

Reference: 20220453

12 December 2022

Dear [REDACTED]

Thank you for your Official Information Act request, received on 20 October 2022. You requested the following:

*The information that I seek relates to a statement in the departmental advice given by the Treasury to the Finance and Expenditure committee and relating to the Natural Hazards Insurance Bill.*

*The statement relates to the 'cap' on EQCover to households, and is on pp 59-60 of the Officials' Report to the Finance and Expenditure Committee on the Natural Hazards Insurance Bill ([https://www.parliament.nz/resource/en-NZ/53SCFE\\_ADV\\_121175\\_FE10264/7489244db8a90ca87e511cecea403de1d08a7a17](https://www.parliament.nz/resource/en-NZ/53SCFE_ADV_121175_FE10264/7489244db8a90ca87e511cecea403de1d08a7a17)):*

*"Alternative options to a cap have been considered and ruled out during the policy process as the cap is seen as an effective tool to put greater downward pressure on insurance prices in higher-risk areas, and therefore is more likely to support Cabinet's objective to ensure that property insurance is affordable and available."*

*I seek information that would explain the rationale for this terse summary of a complex issue. The Information may be recorded in minutes of discussions, in memoranda, research findings or Treasury report. Or it may be held personally by the officer who drafted that statement.*

*I should make it clear that I'm not seeking to enter into a dialogue with the Treasury on this matter, nor to engage in point-scoring of any kind. I'm obviously missing something, and hence would like to better understand just what the argument is.*

### Information being released

Please find enclosed the following documents:

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<https://treasury.govt.nz>

Item	Date	Document Description	Decision
1.	15 August 2013	EQC Intervention Model	Release in full
2.	August 2020	A Review of the EQC Scheme Structure	Release in part

I have decided to release the relevant parts of the documents listed above, subject to information being withheld under one or more of the following sections of the Official Information Act, as applicable:

- personal contact details of officials, under section 9(2)(a) – to protect the privacy of natural persons, including that of deceased natural persons, and
- commercially sensitive information, under section 9(2)(b)(ii) – to protect the commercial position of the person who supplied the information, or who is the subject of the information.

Please note that Item 1 was developed to support initial internal discussions in Treasury on potential future scheme design options. Both documents detail our previous consideration given to alternative options to the first-loss structure of the EQC scheme.

### **Information publicly available**

The following information, provided to you in our previous correspondence on 14 November 2022, is also covered by your request and is publicly available on the Treasury website.

Items 1-3 explain the scope of the work programme to modernise the Earthquake Commission (EQC) Act. The Minister's decision to modernise the Act excluded the option of a first-principles review required to investigate a proportional co-insurance scheme, accordingly investigation into this option was also excluded.

Items 4-7 concern alternative options to a cap that were considered as part of the review of cap settings undertaken in parallel with the work to modernise the EQC Act.

Items 8-9 show previous consideration given to alternative options to the first loss structure of the EQC scheme, and the recommendation to retain the status quo approach to the cap.

<b>Item</b>	<b>Date</b>	<b>Document Description</b>	<b>Website Address</b>
1.	12 March 2020	Treasury Report T2020/212: Future EQC Policy Work: Scope and Timing for a Review of EQC Scheme and Act (Report 1 of 2)	<a href="#">Treasury Report T2020/212: Future EQC Policy Work: Scope and Timing for a Review of EQC Scheme and Act (Report 1 of 2) - 12 March 2020 - Treasury Advice Related to Modernising the EQC Act Information Release - The Treasury</a>
2.	18 June 2020	Treasury Report T2020/1766: Future EQC Policy Work: Updated Scope and Timing for a Review of EQC Scheme and Act	<a href="#">Treasury Report T2020/1766: Future EQC Policy Work: Updated Scope and Timing for a Review of EQC Scheme and Act - 18 June 2020 - Treasury Advice Related to Modernising the EQC Act Information Release - The Treasury</a>
3.	30 July 2020	Treasury Report T2020/2370: Coming Objectives and Scope of the Review of EQC Act	<a href="#">Treasury Report T2020/2370: Confirming Objectives and Scope of Review of EQC Act - 30 July 2020 - Treasury Advice Related to Modernising the EQC Act Information Release - The Treasury</a>
4.	3 October 2019	Treasury Report T2019/2933: Property insurance: options for further work	<a href="#">Treasury Report T2019/2933: Property insurance: options for further work - 3 October 2019 - EQC Bill No. 2 - The Treasury</a>
5.	11 December 2019	Cabinet Minute: DEV-19-Min- 0332: Property Insurance Markets: Options for Further Work	<a href="#">Cabinet Paper DEV-19-MIN- 0332: Cabinet Economic Development - DEV minutes of meeting - 11 December 2019 DEV - Property Insurance Markets - Options for Further Work - 11 December 2019 - EQC Bill No. 2 - The Treasury</a>

Item	Date	Document Description	Website Address
6.	11 December 2019	Cabinet Paper: DEV-19-Min-0332: Property Insurance Markets: Options for Further Work	<a href="#">Cabinet Paper DEV-19-SUB-0332: Cabinet paper - Property insurance markets: options for further work - 11 December 2019 - EQC Bill No. 2 - The Treasury</a>
7.	10 December 2020	Treasury Report T2020/3282: Modernising the Earthquake Commission Act: Options to address affordability and availability of insurance, including through the EQC cap	<a href="#">Treasury Report T2020/3282: Modernising the Earthquake Commission Act: Options to address affordability and availability of insurance, including through the EQC cap - 10 December 2020 - EQC Bill No. 2 - The Treasury</a>
8.	11 December 2012	Treasury Report T2020/3048: EQC Act Review: Key Policy Choices	<a href="#">Treasury Report T2020/3048: EQC Act Review: Key Policy Choices – 11 December 2012 - The Treasury</a>
9.	28 May 2013	Treasury Report T2013/1128: EQC Act Review: Policy Proposals for Public Consultation	<a href="#">Treasury Report T2013/1128: EQC Act Review: Policy Proposals for Public Consultation</a>

Some relevant information has been removed from documents listed in the above table and should continue to be withheld under the Official Information Act, on the grounds described in the documents.

Please note that this letter (with your personal details removed) and enclosed documents may be published on the Treasury website.

This reply addresses the information you requested. You have the right to ask the Ombudsman to investigate and review my decision.

Yours sincerely

Mary Llewellyn-Fowler  
**Acting Manager, Financial Markets Team**  
**The Treasury**

# OIA 20220453

## Table of Contents

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1.	<a href="#">EQC Review - Intervention model</a>	1
2.	<a href="#">EQC Scheme Structure Review</a>	10

## EQC Review – Intervention model

### Introduction

Once the Government has decided the amount of property it wishes to protect, it must decide on the most effective mechanism to deliver this coverage. The purpose of this note is to identify preferred mechanisms for delivering this cover.

### Broad choices

At a high level, the literature identifies two broad choices regarding intervention models for disaster insurance schemes:

- A **primary insurance** model involves the provision of insurance policies directly to individual homeowners, either by EQC, or by a private agent such as an insurer operating on behalf of EQC. The EQC scheme is currently configured on the primary insurance model, with EQC policies automatically attached to contracts of fire insurance and private insurers handling the distribution of policies to homeowners. Primary insurance may be structured in the following ways:
  - A **first loss scheme** would involve EQC paying the first tranche of losses on each property up to a cap. Private insurers would cover subsequent losses.
  - A **second loss scheme** would require private insurers to cover the first tranche of losses on each property up to a cap. EQC would cover subsequent losses.
  - A **co-insurance scheme** would involve EQC and private insurers sharing the losses on each property on a proportional basis.
- A **reinsurance** model essentially involves the provision of insurance to insurers. A reinsurance scheme would create a financial relationship between the Government and private insurers, in which the Government would help private insurers bear the aggregate costs associated with their own policies after a disaster. The implication of establishing a reinsurance scheme is that there would be no direct insurance relationship between the Government and individual homeowners.

We are unaware of conclusive evidence to suggest that a primary insurance model or a reinsurance model represents a ‘better’ option for intervention in insurance markets. In fact, there is a relatively even balance in the use of insurance models among key comparator countries and jurisdictions, as the table below indicates:

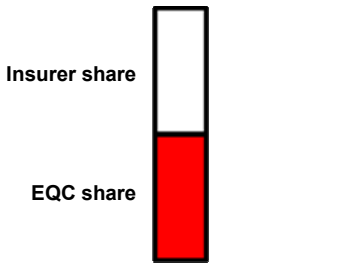
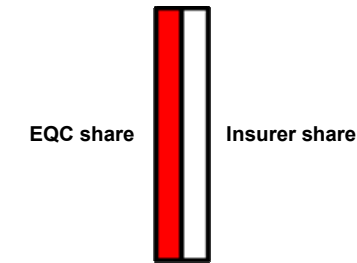
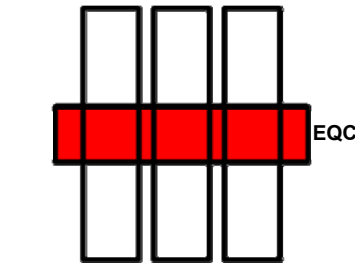
Primary insurance schemes	Reinsurance schemes
New Zealand (EQC)	Japan (JER)
California (CEA)	Taiwan (TREIP)
Turkey (TCIP)	France (CCR)

Following a survey of catastrophe schemes, Gurenko et al (2006) have found that the choice of insurance model is largely pre-determined by the local insurance market’s level of development and ability to retain catastrophe risk. Freeman and Scott (2005) suggest that “the best way for governments to support catastrophe insurance programs is still a matter largely of political choice, not empirical evidence,” but they do state a preference for reinsurance models on the basis that reinsurance reduces the need for the Government to establish its own distribution networks. (This preference, however, ignores the fact that such costs can be avoided in primary insurance schemes if private insurers are assigned responsibility for distribution, underwriting and claims handling, as occurs with the coverage provided by the California Earthquake Authority.)

**Specific options for consideration**

For our own purposes, we have decided to focus our analysis on three types of schemes: first loss and co-insurance (both forms of primary insurance) and a reinsurance pool. We have ruled out the use of a second loss scheme because the Government’s policy interests relate to the restoration of basic, adequate housing; it would be difficult for the Government to justify involvement in the insurance of more expensive homes on a second loss basis, given this policy interest.

The main characteristics of the three main options for consideration are as follows:

<p><b>First loss (status quo)</b></p>  <p><b>Costs per claim</b></p> <p>EQC pays the first tranche of losses on each claim up to a cap. Private insurers are free to provide top-up cover above the cap.</p>	<p><b>Co-insurance</b></p>  <p><b>Costs per claim</b></p> <p>EQC and private insurers share the losses on each claim on a proportional basis. The proportions could vary as the size of the loss increases.</p>	<p><b>Reinsurance pool</b></p>  <p><b>Aggregate losses for each insurer</b></p> <p>EQC pays part of the <i>total</i> costs faced by each insurer across all of their policies after a disaster.</p>
<b>Who would handle claims?</b>		
EQC and private insurer <b>or</b> private insurer only.	Private insurer. EQC will not deal with homeowner.	Private insurer. EQC will not deal with homeowner.
<b>Do terms and conditions across EQC and insurer policies need to be the same?</b>		
Consistent if possible, but not necessary.	Yes. EQC and the private insurer are sharing the costs of the same policy.	Yes, for two reasons: <ul style="list-style-type: none"> <li>• Govt will want to ensure the policies it reinsures achieve its policy goals.</li> <li>• It will be difficult for EQC to price reinsurance cover across differing policies.</li> </ul>

Note that in the case of land, the Government has no choice but to offer some form of first loss insurance, due to the private insurance industry’s unwillingness to assume any land exposure whatsoever. The wider range of options is therefore only available to the Government in considerations of the design of building cover.

## Assessment against Government objectives

### *Fiscal considerations*

At first glance, the different models would appear to result in quite different fiscal outcomes: a reinsurance pool appears to allow the Crown to establish a maximum liability for its residential property exposure in each event, whereas the size of the liability in a primary insurance scheme would be open-ended, depending on the number of claimants and the size of their losses.

But there are caveats to this argument. The establishment of a reinsurance pool is no guarantee that the Government will be able to contain its liability over time. Firstly, the Government must be confident the reinsurance scheme will secure the provision of private insurance to a significant majority of homeowners, so it is not faced with unchannelled demands for homeowner assistance after a disaster. Secondly, the Government must be confident the limits established by the pool will actually hold in the face of an event (e.g. through the proportionate reduction of individual claims payments if the total cost of claims exceeds the capacity of the financing arrangements).

The ultimate exposure will depend, however, on how the liability is structured, and it is possible to structure each of the options in such a way that there may be little difference between them in terms of economic substance. But each of the options will give rise to different incentive effects, particularly during the claims handling phase, which may affect the size of the liability at the margin. These impacts are as follows:

- A first loss scheme that involves EQC handling claims will create additional costs by requiring EQC to create a duplicate claims structure on the ground. These costs can be significant: **[reference to Canterbury claims costs]**. EQC will not need to incur these costs if it cedes claims responsibilities to private insurers, or if the scheme is operated on a co-insurance or reinsurance basis.
- Removing EQC from claims handling responsibilities will create a principal-agent problem. EQC will be paying for work undertaken by private insurers; private insurers may have an incentive to gold-plate claims settlement to the extent that they will benefit from improved client relationships while EQC bears some or all of the associated costs. While EQC will not have to build a duplicate claims structure on the ground, it will need to incur the costs of a robust monitoring and accountability arrangements. We do expect, however, that these costs will be lower than the alternative.

### *Social considerations*

The responsibilities allocated for claims handling may have significant impacts on the outcomes experienced by claimants, and therefore on levels of social distress.

Under current arrangements, claims handling responsibilities are split between EQC and the relevant private insurer. This means properties close to or over the statutory cap on EQC cover are subject to two separate claims handling processes. In cases where assessments differ, the effect of such 'double-handling' is to cause delays, increase handling costs, and create distress and uncertainty for affected homeowners until the differences can be worked through. In some cases, claimants do not even know whether EQC or the private insurer will be the entity handling their claim.



A first loss scheme that involves EQC handling claims in addition to private insurers is therefore likely to create confusion and distress for at least some claimants. Increasing the caps on EQC cover will reduce the number of claimants potentially at risk to such distress, but this distress can be avoided altogether by the adoption of a co-insurance or reinsurance scheme, or if the first loss scheme involves the assignation of claims handling responsibilities to private insurers.

#### *Disaster recovery management (DRM) considerations*

The different options for the future of the scheme have different implications for EQC's role in a recovery and for the Government's broader recovery policy. EQC's current configuration as a first loss insurer with claims handling responsibilities has allowed the Government to use it in Canterbury as a recovery agency in two main ways:

- The Government has tried to reduce price pressure and achieve coordination benefits by managing almost all of EQC's under-cap claims through a single Project Management Office.
- Ministers have tasked EQC with a range of additional functions (such as urgent repairs and home heating installations) which are beyond the scope of the scheme but were considered necessary or desirable to support the recovery.

The Government will not be able to achieve either of these aims through EQC if it relinquishes claims handling responsibilities. Instead, EQC would serve as a financing entity with no obvious role in recovery activities. If the Crown wishes to ensure sustained investment by EQC in the capability to support recovery then this would effectively rule out the use of the reinsurance model.

#### *Economic considerations*

The Government wishes to support the contribution of the private insurance industry to economic growth opportunities in New Zealand. Choices taken in the review, however, may reduce the role of the private insurers and therefore their willingness to participate in New Zealand markets.

Generally, the larger the footprint of Government intervention, the greater the incentive there will be for the private insurance industry to exit some or all segments of the market. In particular, a greater level of Government involvement in claims handling responsibilities is likely to lead to reduced insurance industry investment in its own capability to deal with natural disaster claims.

#### *Summary assessment against Government objectives*

The following table summarises the outcomes of these considerations in terms of the Government's objectives:

**Table 1: Options analysis against Government objectives**

The following analysis assumes the Government's exposure through EQC is roughly equivalent across each of the options, and also that private insurers take up a substantial proportion of the total liability. (Co-insurance, for example, is not a viable option unless this second assumption holds.)

Unweighted scoring for relative achievement of objectives: 0 = not achieved, 1 = partly achieved, 2 = achieved

		<b>First loss (EQC handles claims)</b>		<b>First loss (insurers handle claims)</b>		<b>Co-insurance</b>		<b>Reinsurance pool</b>
<b>Fiscal</b>	0	Duplicate claims handling operations.	1	Principal-agent problem for EQC regarding cost management, but single claims handling operation per insurer.	2	Aligns fiscal interests between EQC and insurers. Single claims handling operation per insurer.	1	Principal-agent problem for EQC regarding cost management, but single claims handling operation per insurer.
<b>Social</b>	0	Multiple parties create confusion for claimants.	2	No confusion for claimants regarding responsible party.	2	No confusion for claimants regarding responsible party.	1	Land cover more complex to deliver so may be a source of confusion and delay.
<b>DRM</b>	2	Allows Govt to efficiently sequence much of rebuild, and to use EQC to deliver other policy initiatives.	0	Govt loses ability to directly sequence rebuild and to deliver policy initiatives through EQC.	0	Govt loses ability to directly sequence rebuild and to deliver policy initiatives through EQC.	0	Govt loses ability to directly sequence rebuild and to deliver policy initiatives through EQC.
<b>Economic</b>	0	Greater level of Govt involvement in claims will reduce industry investment in claims capability.	2	Guarantees supply of basic level of cover. Industry more likely to invest in claims capability.	2	Guarantees supply of basic level of cover. Industry more likely to invest in claims capability.	1	Cannot guarantee supply of basic cover. Industry more likely to invest in claims capability.
<b>TOTAL</b>	<b>2</b>		<b>5</b>		<b>6</b>		<b>3</b>	

## **Other considerations**

There is also a broader set of considerations that will need to inform our judgement on the preferred delivery mechanism. These include:

### *Control and certainty of supply*

A public disaster insurance scheme is a response to a political economy problem. The scope, terms and conditions of the insurance offered to homeowners must be sufficiently acceptable to political interests and to homeowners themselves that it allows the Government to channel and constrain the demands for assistance that are likely to emerge from homeowners regardless after a disaster.

In this regard, one of the key advantages of a primary insurance model is that it allows the Crown to directly shape and control the insurance product to achieve its aims. A reinsurance model, on the other hand, will afford the Crown less scope to control the way insurance products are designed and then marketed by private insurers, unless the Crown is prepared to contemplate more intrusive (and risky) measures such as the regulatory standardisation of private insurance policies.

The question of control becomes particularly important if there is uncertainty regarding the willingness of private insurers to stay on risk. A reinsurance scheme can enhance the market provision of disaster insurance if insurers are constrained by the high cost of capital, but it is possible to conceive of circumstances in which insurers may be simply unwilling to participate in some markets at all, regardless of the extent of government reinsurance available to them. In these cases, they may apply the reinsurance capacity in lower-risk areas rather than the higher-risk areas where the Government's greatest concerns lie. The major benefit of a primary insurance model is that it will ensure the supply of a basic level of disaster insurance cover on an ongoing basis, regardless of any perturbation in private insurance markets.

This is not to say that a primary insurance model represents the only means to ensure continuity of supply. The obvious alternative would be to combine a government reinsurance scheme with a regulatory requirement for all private insurers to offer disaster insurance. In our view, however, regulatory requirements of this nature are extremely undesirable for two main reasons:

- They create an implicit liability for the Crown. If private insurers are overwhelmed by the liability associated with a disaster, the Crown will face strong pressure to bail them out because it forced them into that line of business in the first place.
- They may actually reduce the supply of private disaster insurance if some insurers consider the risks associated with provision to be too great and decide to exit the New Zealand market altogether. A similar dynamic played out in California after the 1994 Northridge earthquake, although in that case the requirement to supply earthquake insurance was not complemented by government reinsurance.

### *Special interests: land*

The Government also has a number of special interests in disaster insurance, particularly regarding the coverage of land. Land insurance is not available in private insurance markets. If the Government wishes to provide land insurance, it will need to design and distribute some form of primary insurance contract.

A mix of primary land cover and reinsured building cover is likely to prove clumsy and unnecessarily complex. It would also impose a potentially fatally conflicting set of incentives on EQC that are likely to complicate relationships with key stakeholders, particularly insurers and reinsurers.<sup>1</sup>

This is undesirable in light of the experience in Canterbury, which demonstrates the importance of establishing simple but robust insurance mechanisms, particularly when large numbers of claimants are involved. It is also undesirable to the extent that questions about EQC's motivations and objectives, particularly by reinsurers, may reduce the desire of key industry stakeholders to participate in the scheme.

### *Coverage*

We also need to consider the impact of a shift in model on household coverage. Household coverage represents a key success metric for any disaster insurance scheme. This is because the scheme will only serve as an effective mechanism to constrain demands from homeowners to compensate disaster losses if a significant majority of homeowners are already covered by the scheme.

The EQC scheme is unique relative to other disaster insurance schemes in hazard-prone jurisdictions around the world in that it has consistently delivered extremely high insurance penetration rates (currently 90-95% of New Zealand households are covered by EQC, compared to rates as low as 10% in California and 25% in Japan). It is certainly not impossible for a different model to deliver equivalent rates of insurance penetration, but there needs to be a high burden of proof to justify moving away from a model that has proved to be so uniquely effective with regard to household coverage.

### **Assessment**

At a high level, there does not appear to be a compelling argument to move away from a primary insurance model and adopt a reinsurance model in its place. In some regards, primary insurance appears to offer significant advantage – not least in the fact that it provides a mechanism for the Government to ensure the ongoing supply of a basic level of disaster insurance, regardless of any perturbation in private insurance markets. The specific nature of some of the Government's concerns, especially regarding land cover, which is not otherwise provided by private market, also argues in favour of retaining a primary insurance model. We recommend the Government retain a primary insurance model as the basis for the EQC scheme in the future.

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<sup>1</sup> There is a high degree of substitutability between foundation works and site works. As a reinsurer of buildings, EQC with its fellow reinsurers would be seeking, where possible, to reduce the cost of foundation works and increase the cost of site works; as an insurer of land, EQC alone would be seeking, where possible, to increase the cost of foundation works and reduce the cost of site works.

Of the primary insurance models, co-insurance appears to represent a highly attractive option. The major benefit of co-insurance is that it would align the financial interests of EQC and the private insurers during the loss adjustment phase. There are, however, at least two preconditions for the successful operation of a co-insurance scheme:

- EQC and the private insurers would need to agree on a consistent set of terms and conditions for each policy.
- Private insurers would need to assume a reasonably substantial proportion of the losses on each policy in order for the incentives to really take effect.

Our discussions with insurers to date suggest neither of these conditions can be met, but we will test their views further during consultation.

Assuming that the preconditions for co-insurance cannot be met, our preference at this stage is to retain the current first loss scheme but to remove claims handling responsibilities. Such a scheme responds clearly and simply to the Government's policy interests and scores the best against the Government's objectives.

**References**

Paul Freeman and Kathryn Scott. 'Comparative Analysis of Large Scale Catastrophe Compensation Schemes' in *Catastrophic Risks and Insurance*. Paris: OECD, 2005.

Eugene Gurenko, Rodney Lester, Olivier Mahul and Serap Oguz Gonulal. *Earthquake Insurance in Turkey: History of the Turkish Catastrophe Insurance Pool*. Washington, D.C.: World Bank, 2006.



# Table of Contents

<b>Introduction</b>	<b>3</b>
<b>Findings</b>	<b>3</b>
<b>The current EQC model and market challenges</b>	<b>4</b>
<b>A review of PGE's and how they influence the insurance market</b>	<b>6</b>
<b>A description of the structural alternatives for EQC</b>	<b>8</b>
Option 1: EQC as a First Loss Insurer	8
Option 2: EQC as an Excess Insurer	9
Option 3: EQC as a Co-Insurer	9
<b>Quantifying alternative scheme structures</b>	<b>9</b>
Insurance Pricing	9
Basis of Analysis	10
Modelled Scenarios	12
Summary of Inputs	14
Modelled Outputs	15
Summary	17
<b>Qualitative considerations related to alternative scheme structures</b>	<b>18</b>
Qualitative Comparison	19
Administration of model (including coverage and claims management)	22
Pricing (including reinsurance support)	23
Reinsurance	23
Crown protection	24
Post-event sustainability	25
Build system resilience	25
Unintended social and commercial consequences	26
<b>Findings</b>	<b>27</b>



## Introduction

EQC have engaged Aon to undertake a review of the current EQC Scheme structure and compare the current model to a select number of alternative structures. Namely, the review is to test the current structure against three alternatives:

Option 1. Increasing the EQC Cap to either NZD 400,000 or Unlimited.

Option 2. EQC becoming an Excess Insurer, with the private market retaining the first NZD 150,000 of any loss and EQC insuring losses “Excess” of either (a) NZD 150,000 and (b) NZD 50,000.

Option 3. Changing EQC to be a Co-Insurer, with EQC and the private insurance market insuring predefined proportions of a property, sharing all losses on this predefined, proportional basis.

The ambition of this review is to investigate the potential impact on consumers from changing the current EQC scheme structure. These impacts will be both Quantitatively and Qualitatively assessed.

The overarching ambition of this paper is to investigate whether or not alternative structures of the EQC scheme could generate meaningful savings for New Zealand households, and ensure affordable insurance is available to all.

## Findings

The geological peril risk facing New Zealand is currently distributed between EQC, private insurers and the Crown along well defined boundaries. The current exercise has been to redistribute this risk with an ambition to measure the impact of these changes on the policy holders of New Zealand, as well as the Crown.

The modelling undertaken quickly ascertained that two features drove the outcomes of redistributing risk:

- Any redistribution which increased risk to private insurers led to detrimental outcomes for households as private insurers are required to charge a margin to carry risk, and these margins (in terms of dollars) increase when the risk increases.
- Any outcome where EQC retains more risk improves outcomes for policyholders as EQC purchase less reinsurance than the private insurance market, reducing premium leakage.

Beyond these quantitative outcomes, a series of qualitative considerations have been included. There are various nuances to these observations, however in general they can be distilled into three key themes:

- 1) Ownership of policy / risk : As a first loss insurer EQC has significantly more ownership of the risk being underwritten. Moving to a position excess of private insurance (or even as a co-insurer) gives primary contact to the private insurer, limiting EQC's ability to influence policy holder behaviours and customer outcomes.
- 2) Disparity of Insurer positions : Private insurers operating in New Zealand have a range of approaches and contractual obligations to supporting geological perils excess of the EQC's NZD 150,000 cap. The impacts of these are largely mitigated and muted by EQC's first loss position. Any change to the scheme bringing private insurers into a first loss position will further expose these variations, driving differences in outcomes for policyholders in New Zealand and potentially driving varying outcomes for EQC.
- 3) Post-event sustainability : EQC's position as a first loss insurer provides sustainability to the provision of affordable insurance for natural perils in New Zealand. If the private market is considered unsustainable post event, or reinsurers fail to support EQC, the Crown still has a vehicle to provide coverage at the cost of tax payers. If private insurers are moved to a first loss position, or even act as a co-insurer, this sustainability is diluted.

## The current EQC model and market challenges

The current EQC Scheme has been in existence since 1993 and was established to ensure cost effective insurance for geological perils is available to the people of New Zealand. Coverage is for damage from all geological perils and is automatically binding after home insurance is purchased from a private insurer. EQC also provides insurance coverage for land.

Coverage under the EQC policy is for building losses up to NZD 150,000, after which the private insurance policy pays for the remainder of a claim. In Insurance parlance this makes EQC a "First Loss" policy, namely EQC pays for the first dollar of loss (beyond any deductible) up to NZD 150,000, and the private insurer pays for losses in excess of NZD 150,000.

Since the Canterbury Earthquake Sequence (CES) the general insurance market in New Zealand (and globally) has been undergoing significant flux. Coinciding with the CES, the Tohoku earthquake, Australian floods, various Floridian Hurricanes and other significant natural catastrophes have meant many private insurers and reinsurers have put greater emphasis on underwriting natural peril risk, impacting all layers of the insurance hierarchy. Coupled with this, poor investment returns have

impacted private insurers' investment portfolios placing greater emphasis on underwriting profitability. These impacts have meant that increasingly the private market has been under pressure to increase the premiums charged when deploying significant capital.

Over the last 24 months the private insurance market in New Zealand has moved rapidly towards introducing Risk Based Pricing. Risk Based Pricing has been adopted in many jurisdictions such as Australia and the UK for some time, and refers to the practice of attributing every risk a distinct premium based on its proximity to natural hazard events and the risk characteristics of the asset in question. In locations such as New Zealand, where notably higher risk exists in some locations, this can lead to significant variations in premiums.

The alternative strategy to Risk Based Pricing is community rating. In this model a common premium rate is charged irrespective of the risk being presented. Currently EQC community rates risk, charging a common levy across all of New Zealand. The practice of community rating normalise the cost of risk across the community, enabling people to insure and live in highly risky areas as well as those more benign. The private insurers in New Zealand have been arguing that the practice of community rating decreases resilience, enabling policy holders to populate unduly risky locations at the expense of the wider community.

In New Zealand these factors have conspired to generate significant premium increases for many households, especially in peril prone locations (e.g. Wellington). Insurance affordability is a very real and significant challenge for many consumers, with premiums increasing significantly in some areas.

In the background to these dynamics, the Government, insurance market and community in general has been dealing with the aftermath of the CES. Public scrutiny and opinion has been very open and vocal, and rightly or wrongly many have questioned EQC's performance after the CES and Kaikoura events, calling for change. At the time of writing the Public Inquiry into the performance of EQC has just been released, with the findings and recommendations currently being considered by the Crown and the community at large.

This paper does not make any specific comment on the findings of the Public Inquiry. Instead the purpose of this paper is to provide an analytical and financial framework to assess different potential "co-insurance" options for the EQC scheme.

## A review of PGE's and how they influence the insurance market

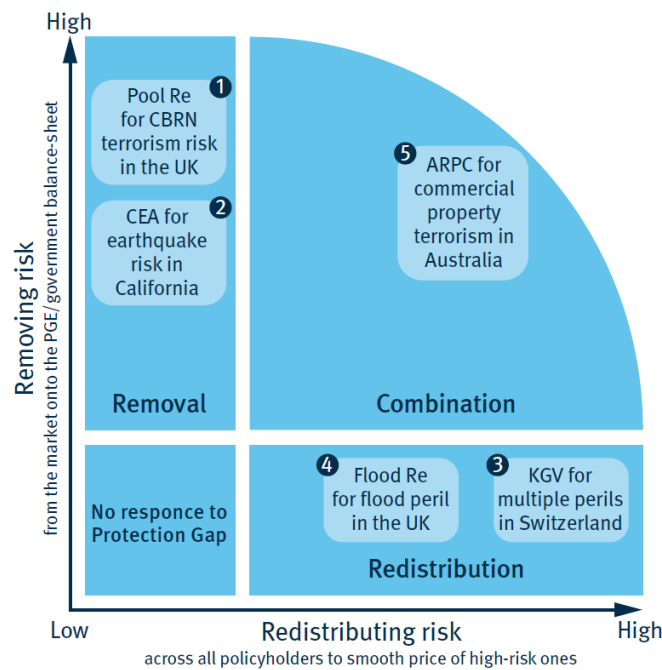
EQC can be defined as a PGE, or a Protection Gap Entity. The Protection Gap is the term given to the circumstance where a group of risks cannot for one reason or another obtain affordable risk financing. Protection Gap Entities help mitigate this situation, enabling risk owners to access affordable risk financing. By facilitating affordable coverage for geological perils for New Zealand householders, EQC fulfils this role as a PGE.

In 2018 Dr Paula Jarzabkowski and a series of co-authors from the CASS Business School in London prepared a paper entitled *Between State and Market: Protection Gap Entities and Catastrophic Risk*. This paper is an excellent synopsis of different PGE's around the world, and the various characteristics of these solutions. One aspect of the paper that is very pertinent to the current investigation is a discussion about how different PGE's transform uninsurable risk communities into affordable insurance markets.

The authors found that in mature markets all PGE's provided at least one of two risk mitigation responses:

- Removal of Risk: The PGE removes risks deemed uninsurable, making the residual risk affordably insurable in the private market.
- Redistribution of Risk: The PGE uses it's balance sheet to redistribute the cost of the risk across a wider funding base, increasing the affordability of peak locations.

This spectrum was diagrammatically illustrated as below.



Source : *Between State and Market: Protection Gap Entities and Catastrophic Risk*

EQC fulfils both of these roles, removing geological risk from the private insurance market, creating an environment whereby the residual risk can be affordably underwritten by the private insurers. Furthermore, the community rating basis of EQC coverage means that the risk is redistributed across New Zealand, making the peak zones affordable for consumers.

The other crucial role EQC plays is accessing cost effective reinsurance. Private insurers purchase reinsurance programmes that are structured to have a retention which is breached every 3 to 6 years. The amount of cover purchased is defined by the RBNZ solvency requirement, which states that an insurer must be capitalised to a minimum of the 1 in 1000 year return period loss. These upper and lower bounds represents a significant stretch of reinsurance capacity which attracts various loads (e.g. reinsurer profit load) above the expected loss (this is discussed in more detail in the following section).

Being a Crown entity, EQC is liberated from such requirements, s9(2)(b)(ii)

s9(2)(b)(ii) Because of this smaller stretch the amount of capital upon which reinsurer loads are applicable is reduced. Effectively another form of redistribution, EQC significantly reduces the profit being paid to reinsurers by retaining more risk in New Zealand.

This relief is magnified in the lower sections of a reinsurance programme where the most expensive capital is accessed. EQC’s comparatively large retention means that the most expensive portions of risk are retained in New Zealand rather than transferred to reinsurers.

## A description of the structural alternatives for EQC

The current review has investigated three alternative EQC scheme structures, these being:

Option 1. Maintain EQC as a **First Loss Insurer** but increasing the EQC's cap to either (a) NZD 400,000 per dwelling or (b) unlimited dwelling cover.

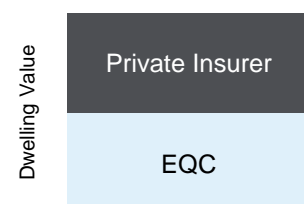
Option 2. Changing EQC to be an **Excess Insurer**, whereby the private insurers become the 'first loss' insurer retaining either the first (a) NZD 150,000 or (b) NZD 50,000 per dwelling, with EQC providing unlimited cover in excess of that value.

Option 3. Changing EQC to be a **Co-Insurer**, where EQC take a (a) 60% share, (b) 70% share or (c) 80% share of the dwelling risk and private insurers provide the remaining share of (a) 40% (b) 30% or (c) 20% share.

In all cases the coverage afforded by EQC has remained consistent to the perils defined in the EQC Act. In all the options we have assumed Contents insurance remains with the private insurance market, as does Commercial and Corporate insurance. Whilst not explicitly tested, we have also assumed Land cover remains in place and is protected entirely by EQC.

### Option 1: EQC as a First Loss Insurer

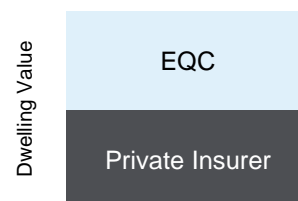
The first Option is not a structural change as such, rather an adjustment of the current EQC cap. For the current analysis we have looked at increasing the EQC cap from NZD 150,000 to NZD 400,000 or to unlimited cover. Under both models EQC would remain a first loss insurer as EQC is today but essentially takes on more residential dwelling exposure for perils under the Act. The first loss insurer model is illustrated in the diagram to the right.



We have chosen to review both the NZD 400,000 and unlimited cover because the loss curve to EQC rises steeply from 0, and then flattens out as the cap increases. NZD 400,000 appears somewhat of an inflection point on this curve, representing a good point upon which differing scheme dynamics are likely to occur, whilst an unlimited cap is considered an extreme yet understandable alternative worthy of investigation.

## Option 2: EQC as an Excess Insurer

Under Option 2, the private insurance market and EQC effectively swap positions, with the private insurer underwriting the first NZD 150,000 or NZD 50,000 of risk, and EQC providing unlimited protection for the remainder of the dwelling. A diagram of this model is shown across.



## Option 3: EQC as a Co-Insurer

The third Option is a model where EQC and the private insurance market co-insure every risk. Co-insurance is the concept whereby two parties insure the same asset to pre-agreed proportions. In this model, if EQC were to take a 60% share of a risk the private insurer takes the remaining 40% of the risk and all premiums and claims would be shared in the same proportion.

In the current analysis we have assessed various levels of co-insurance but assumed the proportion remains the same across all risks (i.e. they do not vary by dwelling value). We have tested EQC insuring 60%, 70% and 80% of the asset value. This model is depicted in the diagram shown across.



## Quantifying alternative scheme structures

### Insurance Pricing

Insurance and reinsurance pricing is constructed using some elementary components. The quantum of these parameters may vary from company to company depending upon their strategy, return expectations and operational paradigm, however the elemental building blocks remain moderately consistent, with these being:

- **Loss Cost:** The average annual loss expected to the coverage being priced.
- **Volatility Load:** A load to account for the volatility in loss to the protection being priced.
- **Expenses:** A value designated to pay for the operational expense of the underwriter.
- **Commission / Brokerage:** Commission is the cost associated with the risk carrier acquiring the business.
- **Profit Margin:** A load added to account for the underwriter needing to make a profit in their business.

As can be imagined, the private insurance industry has a materially different need in pricing insurance than EQC does. Examples of these differences include:

- EQC has very limited acquisition costs as policies automatically bind upon the purchase of a household policy.
- EQC has no need to make a profit in fulfilling it's role as a PGE.
  - In making the above statement, a small load may be considered necessary to contribute to the redevelopment of the Natural Disaster Fund (NDF), with this load effectively taking the place of a profit margin.
- Through time, losses are expected to track towards the average annual loss. Being a Government insurer, EQC can take a longer-term strategy and not take account of volatility in the same manner as a private insurer, trusting that over the long-term the performance of the portfolio will converge on the average annual loss.

Note should be made that in the above no mention is made of accounting for reinsurance inputs and outputs. The above can be thought of as the net position, accounting for reinsurance premiums being deducted and reinsurance recoveries being an input.

## Basis of Analysis

The current analysis has been based on the modelling undertaken for the 2019 reinsurance renewal.

s9(2)(b)(ii)

The basis of the earthquake modelling is RMS. The choice to use RMS ahead of EQC's bespoke modelling platform Minerva has been made in order to facilitate the combining EQC and Non-EQC results. Minerva only models EQC's view of New Zealand householders risk and therefore did not allow the assessment of the private market. By using RMS the various views of loss can be analysed in isolation or combination.

It should be noted that RMS produces higher modelled losses than Minerva, this is due to model differences including a wider range of earthquake related loss causing mechanisms in RMS. Given the comparative nature of this exercise however, many of the variations between Minerva and RMS cancel each other out allowing a side by side analysis of the alternatives.

For tsunami, volcano and attritional losses (often storm), s9(2)(b)(ii)

s9(2)(b)(ii)

These results have been increased in line with risk count (and economic growth where appropriate) to produce 2019 figures.



Analysis of the impacts of changing the scheme structure on reinsurance has been into account using a combination of EQC placement data s9(2)(b)(ii) Various statistics can be drawn from these placements which have been used to inform our estimates of reinsurance costs for EQC and for the private insurance market.

The peril-specific modelling approaches to determine the impact of changes to the scheme structure as follows:

<b>Peril</b>	<b>Method for adjusting results</b>
Earthquake	Modelled using RMS. The unlimited option is assumed to be equal to the modelled position using a buildings cap of s9(2)(b)(ii)
Tsunami	<p>2016 figures have been increased in line with risk count to 2019.</p> <p>Losses are assumed to be predominantly total asset loss for scenarios where the EQC cap is below the average buildings sum insured s9(2)(b)(ii) For the NZD 400,000 cap, the average building sum insured is used and for the uncapped position, the losses are increased using the relativity of uncapped to capped losses from the 2016 Report</p>
Volcanic Eruption	<p>2016 results have been increased in line with risk count and economic growth to 2019.</p> <p>The majority of losses are assumed to be partial damage (i.e. below cap). To allow for the potential for full-limit losses (i.e. exceeding the cap), moving to an uncapped scenario has been assumed to increase the volcanic eruption AAL by 10% versus the NZD 150,000 cap scenario. This increase is apportioned in line with the increase in building sums insured for caps above NZD 150,000.</p> <p>When moving to Option 2b where EQC is insuring xs of NZD 50,000, a pragmatic decision has been made to s9(2)(b)(ii) as the significant proportion of partial losses in a Volcanic event will mean that the movement in AAL from a NZD 150,000 cap will not be linear.</p>
Attritional Losses	<p>2016 figures have been increased in line with risk count and economic growth to 2019.</p> <p>The majority of losses are assumed to be partial damage (i.e. below cap).</p> <p>The assumption of predominantly partial losses means that there is no increase in expected losses when the cap is removed.</p> <p>The relative increase in total sum insured is used to determine contents losses.</p>

As Options 2 and 3 simply represent a redistribution of the forecast losses between EQC and the private insurers, the underlying losses follow the same pattern for both parties, with the loadings and other economic assumptions the key variables. Accordingly, the approach listed above can be applied across all of the options.

Other key assumptions in our approach include:


- s9(2)(b)(ii) It has been assumed that EQC's expenses do not vary as a result of altering the scheme structure.
- The cost of reinsurance has been adjusted for scenarios where significantly more or less capital is required. This has been applied as a percentage increase to the current Rate on Line (ROL).
- Gross total sum insured allows for the cap (where appropriate) but does not take account of original policy limits and deductibles. Note that these sums insured are as per those used in the reinsurance renewal.
- The number of risks is as projected to June 2019 in the renewal modelling information pack – set at 1,745,903.
- s9(2)(b)(ii)
- The model has been set to provide insurers a fixed profit as a percentage of income, the logic being that if they are to take on more or less risk, they would expect to make the same margin as they do today.
- Unless otherwise noted, the assumptions have been kept constant across the various options modelled.

## Modelled Scenarios

As stated above, we have investigated 8 scenarios including the current EQC model. The details of risks being attributed to EQC and the Private Insurance market are catalogued in the table below.

<b>Option</b>	<b>EQC risks</b>	<b>Private Market risks</b>
Current Structure	First NZD 150,000 of earthquake, volcano and tsunami (collectively EVT)	Above NZD 150,000 of EVT All contents All commercial risks All non-EVT risks
EQC 400k	First NZD 400,000 of EVT	Above NZD 400,000 of EVT All contents All commercial risks All non-EVT risks
EQC Unlimited	All EVT	All contents All commercial risks All non-EVT risks
Opposite to Current	Above 150k of EVT	First 150k of EVT All contents All commercial risks All non-EVT risks
EQC xs 50k	Above 50k of EVT	First 50k of EVT All contents All commercial risks All non-EVT risks
Co-share (60%)	60% All EVT	40% of All EVT All contents All commercial risks All non-EVT risks
Co-share (70%)	70% All EVT	30% of All EVT All contents All commercial risks All non-EVT risks
Co-share (80%)	80% All EVT	20% of All EVT All contents All commercial risks All non-EVT risks

s9(2)(b)(ii)



## Modelled Outputs


Using the above, a model has been built testing the impact of alternative EQC scheme structures on EQC, the private insurers and householders. The basis of this model is to establish a pot of risk, where the premium and losses are attributed between these parties based on the scheme structure in question. To estimate the impact on households the various inputs and outputs alter the costs associated with who bears or transfers risk allowing the us to assess which alternatives are most beneficial for each party.

Based on this modelling, the following tables have been created, comparing key metrics across the options. The bottom table shows the variation of the alternative from the current coverage position, with :

- Green circles representing an option which that is more beneficial to either EQC or the population of New Zealand.
- Orange circles representing an option which that is of similar beneficial to either EQC or the population of New Zealand as the current scheme structure.
- Red circles representing an option which that is less beneficial to either EQC or the population of New Zealand.

These evaluations are insensitive to the qualitative factors impacting each option, those matters will be dealt with in future sections, rather the evaluation is purely based on the modelled outcome as parameterised above.

s9(2)(b)(ii)



Below are some observations on each of the outcomes above.

Cost to Policy Holders (CPH) – this outcome represents the total premium pool paid by policyholders in New Zealand.

- CPH goes down in each option where EQC takes on more risk, this is a function of two key factors, EQC purchases reinsurance to different levels than the private insurance market, and EQC does not need to generate a profit on the premium it charges.
- The converse relationship occurs when the private insurance market takes on more risk as a first loss insurers (Option 2), driving up the CPH.
- A co-insurance share of 70% appears to be the breakeven point between the current level of risk attributable to EQC vs the private insurance market, with 60% ceding less risk to EQC and the 80% cession presenting more risk to EQC.

Savings per Household (SpH) – This is the CPH divided by the number of the number of houses in the EQC portfolio (circa 1.75m).

- Given this metric is simply a portion of CPH, the options follow the same trend.
- Notably, the SpH for the option where EQC becomes an excess insurer with a NZD 150,000 retention is very large, s9(2)(b)(ii) showing that (based on this model) the potential premium increases for households in New Zealand could be significant.

Profit for Insurers (Pfl) – This is the Profit, in dollars, earned by the private insurance market if the same profit rate is earned as in the current scheme structure.

- Pfl goes down for options where EQC takes on more risk.
- If we compare the options where EQC takes additional risk in the form of cap increases versus the co-insurance options, the Pfl increase tested as a proportion of CPH (effectively a profit ratio) is less efficient for the co-insurance options. This outcome results from private insurers requiring more reinsurance support under the co-insurance options as they share a proportion of loss from ground up.

Risk to EQC (RtE) – This is the Average Annual Loss (AAL) to EQC under each option.

- As expected, when EQC takes on more risk in the NZD 400,000 and Unlimited caps the Crown is more exposed to loss from the AAL.

- The RtE is significantly reduced under the option where EQC provides excess coverage. This is in essence reflective of EQC and the private insurers swapping places in comparisons to today's scheme structure.

RI Capacity – The amount of reinsurance capacity required for NZ assuming a stable Risk Appetite

- Options where EQC takes on more risk reduce the RI Capacity as EQC's programme starts at a higher return period and exhausts at a lower return period than the private insurers do.
- A significant increase in capacity is required into New Zealand in order to support the excess scenario of NZD 150,000 (Option 2 a), s9(2)(b)(ii)

s9(2)(b)(ii)

## Summary

Whilst somewhat a product of the model, the two key drivers in the quantitative assessment are the differences between EQC and the private insurance market in relation to:

- Profit – Private insurers require more profit than EQC, so any option where private insurers take on more risk will be more expensive to New Zealand policy holders per dollar of capital purchased.
- Reinsurance – Because EQC's reinsurance programme attaches at a higher return period than the private insurance market and exhausts at a lower return period, when EQC takes on more risk less premium is being spent on reinsurance than if the risk is ceded to private insurers.

Whilst seemingly simplistic, these simple observations fit well with the role of EQC as tested against the paper by Jarzabkowski et. al. Both EQC and the private insurers transform risk from the policy holder into the global risk financing market. EQC can achieve this without the commercial imperatives of the private insurance market making it a more efficient vehicle for accessing risk financing than the private sector.

## Qualitative considerations related to alternative scheme structures

To review the breadth of qualitative considerations in the options tested, we must do so in the context of why the New Zealand Government is involved in financing risk and the characteristics of the New Zealand risk landscape.

The work by Jarzabkowski et. al. defines PGE schemes such as EQC as contributing to a developed society's risk financing through removing uninsurable risk and/or redistributing risk across a broader funding base. Through these two operations, PGE's support the affordability and accessibility of insurance by bridging the protection gap or removing the protection gap for insureds. Interlinked is the support a PGE provides to a thriving private insurance market, thus further improving the affordability and accessibility of risk financing for the community.

EQC's Resilience Strategy for Natural Hazard Reduction clearly articulates the reasons New Zealand must obtain cost-effective and sustainable risk financing as part of the overall management of natural hazard risk:

- New Zealand has a high exposure to natural hazard events.
- New Zealand's vulnerability to damage may result in significant social costs.
- New Zealand has a modest economy and cannot sustain the social and financial costs of ongoing events alone.
- Prevailing attitudes and biases exist towards natural hazard risks, with some undervaluing their potential impact.
- The New Zealand population requires solutions based on information and knowledge rather than supposition or naivety.

The Government objectives in the Treasury-led review of the EQC Act were set out in the 2015 discussion document as the following:

- Support the contribution of a well-functioning insurance industry to foster economic growth opportunities in New Zealand.
- Minimise fiscal risk to the Crown associated with private property damage from natural disasters.
- Support an efficient approach to the overall management of natural disaster risk and recovery.
- Minimise the potential for property owners to experience socially unacceptable distress and loss in the event of a natural disaster.



From this context, we have established the following criteria to review the qualitative implications of alternative scheme structures analysed in this report:

- Administration of model (including coverage and claims management)
- Pricing of insurance cover (including reinsurance support)
- Crown protection
- Post-event sustainability
- Build system resilience
- Unintended social and commercial consequences

Finally it is also important to reiterate we have maintained two assumptions as constant throughout the options:

1. EQC continues to community price EQCover with a set rate across geographies and risks.
2. EQC policy coverage continues to be on the current basis i.e. dwelling and land cover as set out under the Act for specific perils. Private insurers continue to provide contents and wider natural catastrophe cover for other perils, and out-of-scope matters such as temporary accommodation, driveways, fences, paths pools, and specialist fees.

## Qualitative Comparison

Fundamentally, the three options reviewed are differentiated by the influence EQC can exert on the EQC / Insurer relationship depending on who “owns” the policy holder relationship when a claim occurs. These can be summarised as:

Option 1 : EQC as a first loss insurer – EQC pays the first loss when a claim occurs. This position means that EQC controls the response of the wording and sets the tone for settlement.

Option 2 : EQC is an excess insurer – EQC pays for claims after the insurer has already set the tone of the settlement, contributing only when losses escalate.

Option 3 : EQC as a co-insurer – EQC and the insurer must be aligned in their interests, sharing a wording and the claims settlement process.

The table below has marked how each option performs across the various dimensions listed above. For simplicity, we have marked the options, such that:

- Green circles representing an option which that is more beneficial to either EQC or the population of New Zealand.
- Orange circles representing an option which that is of similar beneficial to either EQC or the population of New Zealand as the current scheme structure.
- Red circles representing an option which that is less beneficial to either EQC or the population of New Zealand.

It is noted here that below there is little differentiation between the alternatives (e.g. a and b) of each Option as the overarching observations are normally applicable regardless of the cap or co-insurance percentage chosen.

Thoughts on these outcomes are included below.

Administration	Option 1	Option 2	Option 3
Coverage Completeness	EQC own original wording	Insurer defines coverage	Must align with Insurers
Claims Management	EQC can control if desired	Insurer will define	Must align with Insurers
Settlement flexibility (for EQC)	EQC has control	Less flexibility	Less flexibility
Cover Reinstatement	EQC has control	Less flexibility	Less flexibility

Pricing	Option 1	Option 2	Option 3
Community Pricing	EQC can control if desired	Insurers have risk based pricing	Confused if not aligned
Pricing Adequacy	EQC can subsidise	Insurers pass on increases	As across but muted
Frictional Cost	EQC can absorb	Insurers cant save expense	Status Quo
Sum Insured Variation (Insurers method)	EQC immune to different methods	EQC can establish its own view	EQC coverage will vary by insurer

Reinsurance	Option 1	Option 2	Option 3
Sum Insured	EQC will need to enforce	Status Quo	EQC will need to enforce
Diversification Saving	EQC have none to share	Insurers offer diversified risk	Status Quo

Crown Protection	Option 1	Option 2	Option 3
Exposure Level	EQC exposes the Crown more	Much less exposure to Crown	Can be tuned to current levels
Inflation Mitigation	EQC can control costs	Insurers more prone to inflation	EQC has some control
Flexible Participation	EQC can control costs	Harder for EQC to flex	EQC can change share for market

Post Event Sustainability	Option 1	Option 2	Option 3
Reinsurance	EQC can retain risk	Affordability concerns	Can be tuned to current levels
Insurance Market	EQC exposes the Crown more	Shareholder discontent	Shareholder discontent

Building System Resilience	Option 1	Option 2	Option 3
Enrich Data	EQC's data sets get deeper	EQC only see excess claims	EQC's data set gets deeper
Insurer Oversight	EQC data improves	EQC is removed from much of the loss	EQC participates on all losses

Unintended Social Consequences	Option 1	Option 2	Option 3
Muting Risk Signals	No incentive as cap grows	R B Pricing sends signals	RB Pricing on co insurance
Insurer Viability	Questionable given exposure	Solidifies position	Solidifies position
RBNZ	Will need overhaul	Easier to measure	Less importance
International Exposure	Insurers influence mitigated	NZ Inc reliant upon insurers	Ins influence mitigated but existent
Competition	Status Quo	Easier to measure	Difficult without EQC disparities

## Administration of model (including coverage and claims management)

Administration	Option 1	Option 2	Option 3
Coverage Completeness	● EQC own original wording	● Insurer defines coverage	● Must align with Insurers
Claims Management	● EQC can control if desired	● Insurer will define	● Must align with Insurers
Settlement flexibility (for EQC)	● EQC has control	● Less flexibility	● Less flexibility
Cover Reinstatement	● EQC has control	● Less flexibility	● Less flexibility

Coverage Completeness : Option 1 affords EQC the most freedom in relation to coverage completeness, with private insurers being able to “wrap” their policy around EQC. Option 3 has an added complication in this regard as the co-insurance model becomes impractical if coverage is not afforded by either party, necessitating EQC’s coverage aligns seamlessly with the private insurance market. Furthermore, EQC can afford coverage to homeowners which may not be reinsurable, with the Crown carrying this risk, Options 2 and 3 preclude this capability as insurers require back to back reinsurance.

Claims Management : As a first loss insurer, EQC have the primary responsibility for Claim Management strategy (which can be to outsource these operations). As an excess insurer this position is removed as the first dollar of loss is managed by the private insurers, whilst in a co-insurance model this strategy must be aligned between partners.

Settlement flexibility (for EQC) : Similar to the above, as a first loss insurer EQC can choose any means of settlement at its disposal. As a co-insurer this capability is compromised as a partial settlement on an alternate basis is impractical. As an excess insurer this flexibility is compromised as not only would the private insurance market determine the primary settlement method, the quantum of loss required for EQC’s participation (e.g. xs NZD 150,000) would also probably dictate a more structured and rigorous settlement route.

Cover Reinstatement : The reinstatement of protection post loss is most simple when EQC is a first loss insurer as there is no reliance on the private insurance market to reinstate. In either Option 2 or 3 the private insurers can impede this process if they decide (within legal confines) not to reinstate protection.

## Pricing (including reinsurance support)

Pricing	Option 1	Option 2	Option 3
Community Pricing	● EQC can control if desired	● Inurers have risk based pricing	● Confused if not aligned
Pricing Adequacy	● EQC can subsidise	● Insurers pass on increases	● As across but muted
Frictional Cost	● EQC can absorb	● Insurers cant save expense	● Status Quo
Sum Insured Variation (Insurers method)	● EQC immune to different methods	● EQC can establish its own view	● EQC coverage will vary by insurer

Community Pricing : As a first loss insurer EQC has the greatest impact with assisting insurance affordability via community pricing. As an excess insurer, or in a co-insurance model, the insurers ability to implement risk based pricing is greatest.

Pricing Adequacy : As a Crown insurance vehicle EQC has the ability to subsidise premiums, reducing pricing adequacy if the pragmatic decision is made that this is beneficial for the people of New Zealand.

Frictional Cost : For a private insurer, excluding reinsurance costs, there is very little expense relief in transferring natural peril coverage to EQC, accordingly any model where risk is reduced from the private insurance market the proportion of cost attributable to expenses (i.e. a common measure of frictional cost is the expense ratio) increases.

Sum Insured Variation : Any model where EQC takes risk until the exhaustion of an assets value (Option 2 or 3) rather than a predefined cap (Option 1) makes EQC susceptible to differing approaches to defining the asset value by the private insurer. This variation may drive systemic differences in EQCover across the population.

## Reinsurance

Reinsurance	Option 1	Option 2	Option 3
Sum Insured	● EQC will need to enforce	● Status Quo	● EQC will need to enforce
Diversification Saving	● EQC have none to share	● Insurers offer diversified risk	● Status Quo

Sum Insured : At present EQC has independence to develop its own views of a risk’s sum insured. Whilst this capability remains in Option 2, more emphasis is placed on this calculation as any error in this calculation falls on EQC to rectify rather than the private insurance market. A further complicating factor with Option 3 is that alignment must exist between EQC and the private insurance market as to what the sum insured should be. This complication not only impacts EQC’s conversations with each insurer individually, it would in all likelihood also require agreement across insurers to ensure EQC does not treat policy holders in a bias fashion based on their insurer of choice.

Diversification Saving : Options 2 and 3, where private insurer risk increases greater diversification can be introduced when compared to EQC. Whilst spread across New Zealand, EQC’s peril risk is highly concentrated. Private insurers can instead bring diversification from locations outside of New Zealand.

### Crown protection

Crown Protection	Option 1	Option 2	Option 3
Exposure Level	EQC exposes the Crown more	Much less exposure to Crown	Can be tuned to current levels
Inflation Mitigation	EQC can control costs	Insurers more prone to inflation	EQC has some control
Flexible Participation	EQC can control costs	Harder for EQC to flex	EQC can change share for market

Exposure Level : At present EQC represents a capped exposure to the Crown (simplicistically, the aggregate of the policy caps across the number of policies issued creates an exposure ceiling). Even with nominated sums insured, this limitation of liability becomes significantly more difficult if EQC carries liability to the exhaustion point of the original policy.

Inflation Mitigation : As a first loss insurer EQC has the ability to mitigate claims inflation via the settlement mechanism employed. In a model where this ability is changed or co-insuring exits EQC will have less flexibility in this regard.

Flexible Participation : EQC has been able to change the amount of risk it carries relatively simply being a first loss insurer, for example, increasing the cap to help alleviate other external pressures on New Zealand householders. If insurers were to take a first loss position (Option 2) this ability to change the cap underwritten by the private market becomes more complicated as the additional burden on the private market cannot be instantaneously assumed.

## Post-event sustainability

Post Event Sustainability	Option 1	Option 2	Option 3
Reinsurance	● EQC can retain risk	● Affordability concerns	● Can be tuned to current levels
Insurance Market	● EQC exposes the Crown more	● Shareholder discontent	● Shareholder discontent

Reinsurance : The ability to attract reinsurance to New Zealand if another large catastrophe occurs is uncertain. EQC’s ability to retain risk and not reinsure is materially greater than a private insurer’s ability to do so. For this reason, having EQC as a first loss insurer (Option 1) provides a level of immunity to the New Zealand population that would not exist under Options 2 or 3.

Insurance Market : Post the CES various private insurers questioned the viability of the New Zealand insurance market, citing the premium vs risk relationship as untenable. New Zealand’s vulnerability to insurer withdrawal is heightened if they are placed in the position of first loss (Option 2).

## Build system resilience

Building System Resilience	Option 1	Option 2	Option 3
Enrich Data	● EQC’s data sets get deeper	● EQC only see excess claims	● EQC’s data set gets deeper
Insurer Oversight	● EQC data improves	● EQC is removed from much of the loss	● EQC participates on all losses

Enrich Data : In Option 2, where EQC becomes an excess insurer, contact is lost with the policy holder as EQC stands behind the private market. The current scheme structure, and the co-insurance structure mean that EQC must receive information from the first dollar of loss, this position means that EQC have significantly more clarity regarding the entire data suite.

Industry Oversight : In a similar fashion to the above, the closer the EQC is to the full customer experience, the better oversight EQC will have of the insurance industry’s behaviour. This oversight is significantly impeded in Option 2 where EQC is an excess insurer, and enhanced in Option 3 where

EQC is a co-insurer. Unlike Option 1 or 3, where EQC sees the experience of the insurer all the way through the risk rather than up to a pre-defined cap.

## Unintended social and commercial consequences

Unintended Social Consequences	Option 1	Option 2	Option 3
Muting Risk Signals	● No incentive as cap grows	● R B Pricing sends signals	● RB Pricing on co insurance
Insurer Viability	● Questionable given exposure	● Solidifies position	● Solidifies position
RBNZ	● Will need overhaul	● Easier to measure	● Less importance
International Exposure	● Insurers influence mitigated	● NZ Inc reliant upon insurers	● Ins influence mitigated but existent
Competition	● Status Quo	● Easier to measure	● Difficult without EQC disparities

**Muting Risk Signals :** A common argument against the use of PGE’s is the detrimental message they send towards a communities risk awareness, with risk based pricing the private insurers weapon of choice for encouraging resilient decision making. For this reason, Options 2 and 3, where risk based pricing signals are received by householders from the first dollar of risk, produce the most unfiltered message for households.

**Insurer Viability :** If the EQC cap increases significantly the viability of private insurers participation in the New Zealand insurance is possibly questionable under the current model. The cost effectiveness of underwriting what would essentially be a fire and storm insurance portfolio is potentially undermined as the premium required may not be affordable for such limited coverage.

**RBNZ Implications :** The RBNZ solvency requirements place a strong emphasis on an insurers exposure to earthquake risk for the establishment of its capital needs. The ability for private insurers to assess and cap this risk under a scenario where they have first loss exposure is increased in comparison to the current scheme structure.

**International Exposure :** The New Zealand insurance market is heavily dominated by overseas insurers, and it is arguable that as they move closer to the policy holder in carrying major peril risk their influence increases. For this reason, Option 1 presents the lowest risk in regards to overseas influence.

**Competition :** Option 1 has proven a successful mechanism by which the New Zealand population can have both coverage certainty and a viable insurance market. Option 2 would generate some



complications in this regard, however Option 3 may not be viable without the imposition of some tariff style behaviours. As EQC would need to align its offering across all insurers, and because the insurers and EQC are equally sharing risk, it would be very difficult to achieve this uniformity without imposing upon the individual decision making of each insurer.

## Findings

The geological peril risk facing New Zealand is currently distributed between EQC, private insurers and the Crown along well defined boundaries. The current exercise has been to redistribute this risk with an ambition to measure the impact of these changes on the policy holders of New Zealand, as well as the Crown.

The modelling undertaken quickly ascertained that two features drove the outcomes of redistributing risk:

- Any redistribution which increased risk to private insurers led to detrimental outcomes for households as private insurers are required to charge a margin to carry risk, and these margins (in terms of dollars) increase when the risk increases.
- Any outcome where EQC retains more risk improves outcomes for policyholders as EQC purchase less reinsurance than the private insurance market, reducing premium leakage.

Beyond these quantitative outcomes, a series of qualitative considerations have been included.

There are various nuances to these observations, however in general they can be distilled into three key themes:

- 4) Ownership of policy / risk : As a first loss insurer EQC has significantly more ownership of the risk being underwritten. Moving to a position excess of private insurance (or even as a co-insurer) gives primary contact to the private insurer, limiting EQC's ability to influence policy holder behaviours and customer outcomes.
- 5) Disparity of Insurer positions : Private insurers operating in New Zealand have a range of approaches and contractual obligations to supporting geological perils excess of the EQC's NZD 150,000 cap. The impacts of these are largely mitigated and muted by EQC's first loss position. Any change to the scheme bringing private insurers into a first loss position will further expose these variations, driving differences in outcomes for policyholders in New Zealand and potentially driving varying outcomes for EQC.

- 6) Post-event sustainability : EQC's position as a first loss insurer provides sustainability to the provision of affordable insurance for natural perils in New Zealand. If the private market is considered unsustainable post event, or reinsurers fail to support EQC, the Crown still has a vehicle to provide coverage at the cost of tax payers. If private insurers are moved to a first loss position, or even act as a co-insurer, this sustainability is diluted.

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