

Terrorism Insurance Act

Review: 2015

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ISBN 978-1-925220-35-3

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CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS	•••••
EXECUTIVE SUMMARY	1
Australia's Terrorism Insurance Scheme	
CHAPTER 1: INTRODUCTION	5
Rationale of the scheme	5
CHAPTER 2: CONTINUATION OF THE ACT	9
Issue	g
Recommendation	g
Assessment	g
CHAPTER 3: OWNERSHIP STRUCTURE OF THE ARPC	13
Issue	13
Recommendation	
Assessment	13
CHAPTER 4: ENSURING FINANCIAL SUSTAINABILITY OF THE SCHEME	17
Industry retentions	
Continuation of Retrocession Program	18
Compensation to government	
Premium pricing	
CHAPTER 5: CLARIFYING THE COVERAGE OF THE SCHEME	25
Mixed-use and high-rise residential building cover	
Impact of exclusions in insurance policies	
APPENDIX A: TERMS OF REFERENCE	29
APPENDIX B: INTERNATIONAL APPROACHES	31
Recent developments in the United Kingdom and United States	31
How the Australian scheme compares with other schemes	
ANNEX A: POTTINGER REPORT	
ANNEX B: FINITY REPORT	

LIST OF ACRONYMS AND ABBREVIATIONS

AGA Australian Government Actuary

ARPC Australian Reinsurance Pool Corporation

DTI Declared Terrorist Incident as defined in the *Terrorism Insurance Act 2003*

OECD Organisation for Economic Co-operation and Development

NBCR Nuclear, biological, chemical and radiological risks

EXECUTIVE SUMMARY

AUSTRALIA'S TERRORISM INSURANCE SCHEME

Background to Review

The Terrorism Insurance Scheme (the scheme) was intended as an interim measure to operate while terrorism insurance cover was unavailable in the private market. The scheme was set up under the *Terrorism Insurance Act 2003* (the Act), and is operated by the Australian Reinsurance Pool Corporation (the ARPC). The Act requires that the Minister prepare a report that reviews the need for the Act to continue in operation at least once every three years. Previous reviews in 2006, 2009 and 2012 have concluded that there was insufficient commercial market terrorism insurance available at affordable rates and that the scheme should continue to operate.

The terms of reference for this review appear at Appendix A. It is not the purpose of this review to consider the level of risk of terrorism. That is the function of other branches of government. Nevertheless, recent events — in Sydney and Paris, for example — highlight that terrorism is an ongoing threat. The Sydney event in December 2014 gave rise to the first and only activation of the scheme since its inception.

This comes at a time when the scheme has been in operation more than a decade. Last year, the National Commission of Audit, in expressing a view on the future of a number of Australian Government bodies, said of the ARPC:

"With continued recovery in terrorism insurance markets, there is scope for a gradual Commonwealth exit over the coming years."²

Against that background, this review has closely considered the scope for government withdrawal from the market, and whether alternative structures for the ARPC, including full or partial private ownership, would be viable. To assist in exploring these issues, an external consultant (Pottinger) was engaged by Treasury. In addition, in finalising this review, consultations were held with industry representatives on a draft of the Report.

For the reasons set out in detail in the chapters below, the recommendation of this review is that the current ownership and administration structure of the scheme as set out in the Act be retained, while noting that there is scope to revisit alternative structures in future if there is a significant change in market conditions.

Nevertheless, as the need for the scheme has persisted for more than a decade, the policy framework against which its operation is assessed should no longer be limited to one that conceives of the scheme as a short-term, temporary measure. While the ongoing need for the scheme should continue to be periodically reviewed, the fact that it has matured into at least a medium-term policy response should be recognised and reflected in decisions about the nature and scope of its operation.

¹ Terrorism Insurance Act 2003, section 41.

² Towards Responsible Government, The Report of the National Commission of Audit, Phase One, p. 205

Reflecting the considerations outlined above, the recommendations in this report are motivated by the desire to ensure that:

- those who benefit most from the scheme insured parties and the insurance industry take an appropriate level of responsibility for its sustainable operation;
- the government and taxpayers are fairly compensated for any financial support provided to scheme;
- the scheme operates equitably and effectively to provide terrorism cover where it is unavailable in the private market; and
- there is an appropriate level of certainty around the operation of the scheme.

Recommendations

Structure of the ARPC

Recommendation 1: That the Act remains in force, subject to future three-yearly statutory reviews.

Recommendation 2: That the current administration structure of the ARPC as set out in the Act be retained.

Retentions

Recommendation 3: The four per cent rate of gross fire and industrial special risk premium (less any fire services levy) should be increased to five per cent.

Recommendation 4: Current maximum retention levels for individual insurers should be removed.

Recommendation 5: The maximum industry retention should be increased from \$100 million to \$200 million.

Retrocession

Recommendation 6: That the ARPC continue to have the discretion to purchase retrocession, subject to the APRC assessing the need for, and levels of, its retrocession programme and value for money.

Fee for the government guarantee

Recommendation 7: That the ARPC pay to the Commonwealth each year, commencing in 2016-17:

- a) a fee of \$55 million in respect of the Commonwealth guarantee of the ARPC's liabilities; and
- b) an additional amount of \$35 million per annum to reflect the Commonwealth's support in making the ARPC reserves available for payment of claims.

Premiums

Recommendation 8: That the premiums charged by the ARPC be increased, with effect from 1 April 2016 to:

- 16 per cent for Tier A,
- 5.3 per cent for Tier B, and
- 2.6 per cent for Tier C.

Scope of the scheme

Recommendation 9: That the scope of the scheme be extended so that it applies to:

- a) buildings in which at least 20 per cent of floor space is used for commercial purposes; and
- b) buildings with a sum-insured value of at least \$50 million, whether used for commercial or other purposes.

Recommendation 10: That the application of the Act be clarified by amendments that remove doubt about whether certain losses would be covered under the scheme; in particular, losses attributable to terrorism attacks that use chemical or biological means.

CHAPTER 1: INTRODUCTION

RATIONALE OF THE SCHEME

The lack of affordable terrorism insurance following terrorism events on 11 September 2001 forced Australia's commercial property owners, developers and investors (such as banks, superannuation funds and fund managers) to assume their own terrorism risk, as existing policies expired and renewal policies explicitly excluded terrorism cover. Effects included a substantial reduction in commercial building activity. As a result, in May 2002 the Government announced that it would act to protect the Australian economy from the negative effects of the withdrawal of terrorism insurance cover.

Subsequently, a scheme was established under the *Terrorism Insurance Act 2003* (the Act) to replace terrorism insurance coverage for commercial property and associated business interruption losses and public liability claims. Under the Act, the scheme is administered by the ARPC, a Commonwealth statutory corporation. The scheme commenced on 1 July 2003.

Operation and coverage

The Act operates by overriding terrorism exclusion clauses in eligible insurance contracts to the extent the losses excluded are eligible terrorism losses arising from a declared terrorist incident (DTI).³ This requires insurers to meet eligible claims in accordance with the other terms and conditions of their policies.

Insurance companies can (but are not required to) reinsure the risk of claims for eligible terrorism losses through the ARPC, in which case premiums are payable to the ARPC at rates set by the Minister. Insurance companies can choose to reinsure through the private reinsurance market.

An eligible insurance contract is a contract that provides insurance coverage for:

- loss of, or damage to, eligible property owned by the insured;
- business interruption and consequential loss arising from loss of, or damage to, eligible property
 that is owned or occupied by the insured or an inability to use all or part of such property; or
- liability of the insured that arises from the insured being the owner or occupier of eligible property.⁴

'Eligible property' is defined under the Act as the following property that is located in Australia:

- buildings (including fixtures) or other structures or works on, in or under land;
- tangible property that is located in, or on, such property; and
- property prescribed by regulation.⁵

Note that there is a range of exclusions set out in the *Terrorism Insurance Regulations 2003*.

³ Terrorism Insurance Act 2003, sections 6-8.

⁴ Terrorism Insurance Act 2003, subsection 7(1).

⁵ Terrorism Insurance Act 2003, section 3.

How a claim is funded

In the event of a DTI, claims would progress along the following sequence (see also Figure 1):

- 1. Losses would be met first by industry up to the level of each insurer's retention; then
- 2. From ARPC capital up to the value of the deductible on retrocession cover; then
- 3. From the retrocession program, (with any co-contribution being made from ARPC capital and then through the government guarantee); and finally
- 4. Through the government guarantee, up to the \$10 billion cap.

The sum of these tiers represents the maximum claimable amount under the scheme. Should the total claimed losses exceed the capital of the ARPC, the value of retrocession cover purchased and the \$10 billion government guarantee, a 'reduction percentage' would be applied and claims would be paid on a pro rata basis.

Insurers that reinsure their terrorism risks with ARPC retain part of the cost from a DTI. The retention, similar to an excess or deductible, requires the insurer to pay the first part of any claim. Retentions for individual insurers are calculated as 4 per cent of fire and industrial special risk premiums collected by the insurer, with a minimum retention of \$100,000 and a maximum retention of \$10 million.

The ARPC's reinsurance agreement also provides for a maximum industry retention of \$100 million. If the sum of the retentions of individual insurers in respect of all eligible terrorism losses caused by a single DTI exceeds the maximum industry retention of \$100 million, then each insurer's retention is reduced proportionately.⁶

⁶ Australian Reinsurance Pool Corporation, *Annual Report* 2013-2014, page 32.



Figure 1: 2015 ARPC scheme capacity

CHAPTER 2: CONTINUATION OF THE ACT

ISSUE

This chapter examines whether there is a need for the Act to continue to deem cover for losses suffered due to a terrorism incident into eligible insurance contracts and whether the government should continue to provide a reinsurance scheme for this risk. Considerations include to what extent there continues to be a market failure in the provision of terrorism insurance and what the impact would be if the Act were to be abolished.

As noted above, the National Commission of Audit, in expressing a view on the future of a number of Australian Government bodies, said of the ARPC:

"With continued recovery in terrorism insurance markets, there is scope for a gradual Commonwealth exit over the coming years."

The scope for any short term Commonwealth exit is considered below.

RECOMMENDATION

The restriction on availability of terrorism insurance and reinsurance cover in the private market remains. There is some cover available, but this falls well short of the current level provided under the scheme. This is unlikely to change in the short to medium term. As a result, it is recommended that:

Recommendation 1: That the Act remains in force, subject to future three-yearly statutory reviews.

In relation to the size of the scheme, the current capacity is considered an appropriate level of cover, in that modelling indicates it would adequately cover the cost of a single explosion event and provide a good level of cover for a multiple explosion event.

ASSESSMENT

Appropriate level of terrorism cover

The ARPC's modelling demonstrates that, if a loss was to occur in the Sydney or Melbourne central business districts from a large blast, ARPC's pool of funds plus the retrocession program would cover almost all probable events. Multiple explosion events have not been modelled and would lead to larger losses. Determining an appropriate capacity for the scheme is challenging due to the lack of certainty of the probability of substantial events. However, the ARPC's conclusion that the current capacity of \$13 billion is adequate to comfortably cover most foreseeable outcomes of a major explosion event in a large Australian city provides a basis on which to maintain the current level of

⁷ Towards Responsible Government, The Report of the National Commission of Audit, Phase One, p. 205

⁸ ARPC Autumn 2013 'Under the Cover'.

cover under the scheme. If ARPC reserves were depleted after such an event, consideration would be given as to how best to replenish those reserves in preparation for any further event.

Market failure

The report prepared by external consulting firm Pottinger considered the availability of reinsurance for terrorism risk in detail. It concludes that the availability and pricing of private sector terrorism insurance has improved over time due to the low incidence of major terrorism claims, better risk modelling and greater competition among reinsurers. Terrorism loss reinsurance prices have also fallen over time. In addition, coverage has improved for small events.

Nonetheless, there is still a partial market failure. The Pottinger report estimates that terrorism risk retrocessions available to Australian insurers at a reasonable price total around \$5 billion, which is well below the approximately \$13 billion of reinsurance cover provided by the scheme.

There also seems to be no material likelihood of market conditions changing such that adequate private sector supply of terrorism insurance becomes available over the near to medium term. The development of a private market for terrorism insurance in Australia depends on further growth in the capacity of global reinsurance markets for terrorism risk. Recent developments overseas indicate that government support of terrorism insurance arrangements continues to be required. The US Parliament, for example, recently voted to reinstate the national terrorist insurance scheme, which had lapsed in December 2014. The Bill passed with bipartisan support.

Current conditions do not imply the continued availability of private sector terrorism insurance at an economic price over the medium to longer term, particularly in the event of a major claim in Australia or overseas. Further, the report indicates that, while there is increasing capacity to insure the risk pool managed by the ARPC, there is no guarantee that the same capacity would be available to individual insurers. The report identifies the risk-pooling mechanism as a key factor in providing cost-effective reinsurance of terrorism risk.

Impact on competition

A second consideration is whether continuation of the scheme is preventing the re-emergence of a private market for terrorism insurance. Again, the capacity of Australian insurers depends on the global market for reinsurance. In this context, the current government-supported scheme in Australia is likely to have little effect on the development of the market. Supporting this conclusion is the Finity report's finding that no market solution has emerged in relation to high-rise residential and mixed-use buildings not covered by the scheme.

The low impact of the scheme on the development of a market solution is consistent with the view of insurance industry stakeholders that the scheme should remain in largely its current form and is of benefit to them in a market where terrorism insurance is lacking. In fact, the successful retrocession program operated by the ARPC is viewed by stakeholders as having a positive effect on Australian insurers' access to global reinsurance markets.

Impact of removal of the scheme

A final consideration is whether the removal of the scheme would have any negative impacts.

The likely negative economic impacts are difficult to assess. There are indications from some stakeholders that removing the scheme may not initially concern—the market more generally. However, conditions have not materially changed so that funding of large-scale commercial projects

would be viable without insurance. In current conditions, the pricing of the scheme suggests that insurers see little likelihood of a large-scale loss. Yet there seems to be no reason to think that a future large terrorist event would not have a similar effect on large commercial building activity to that in 2001.

A further issue is that, if sufficient terrorism insurance is not available in the private market, then the government may be called on to provide open-ended support in the event of a terrorist incident. Existence of an explicit guarantee provides certainty and enables the government and tax payers to be fairly compensated for the provision of the guarantee.

The need for the scheme was highlighted recently through the certainty it provided in the December Sydney siege events where it was activated for the first time. Although losses are predicted to be below the level of activation of the government guarantee, the scheme has provided a mechanism for communication between insurers and the government and provided certainty to claimants.

Ongoing reviews

The Pottinger report recommends making the scheme permanent given the apparent ongoing need for the Act, and posits reviews once every 5 years. While this review recognises that the temporary nature of the scheme needs to be reassessed given the persistent need for it, it is considered that triennial reviews should remain in place to ensure that the ongoing need for the scheme is closely monitored, but also to ensure that the parameters of the scheme are appropriately set.

CHAPTER 3: OWNERSHIP STRUCTURE OF THE ARPC

ISSUE

While the Act and the ARPC are necessary and likely to be so over the longer term, there may be alternative options available for ownership of the ARPC. This chapter considers alternative options for the ARPC and whether the ownership or administration structure should be changed.

RECOMMENDATION

Recommendation 2: That the current administration structure of the ARPC as set out in the Act be retained.

ASSESSMENT

The introduction of the scheme in 2003 was to counter a significant impact on economic activity due to a lack of insurance for commercial property and associated business interruption losses and public liability claims. At the time, it was recognised that creation of the ARPC, a government-owned statutory corporation, would increase government involvement in the insurance market, operate as a competitor to private-sector reinsurers, and increase the risk faced by the government through the provision of a government guarantee. For these reasons, the scheme was intended to be temporary until a market-based solution re-emerged.

This review finds that there is no near-term possibility of a market-based solution emerging and that the scheme should continue. However, the review also considers whether there is scope for alternative ownership or administration structures for the ARPC that might increase industry responsibility for the scheme's continued operation, and facilitate a gradual withdrawal from the market by the government. An external consulting firm, Pottinger, was engaged by Treasury to provide advice on alternatives for this review (report attached as Annex A).

Pottinger's report canvasses ownership and administration structures used for similar schemes overseas and considers costs and benefits if these options were to be adapted for use in the Australian context. Drawing on Pottinger's work, this review considers two broad alternative options for ownership of the ARPC that would allow for significantly lower government involvement: a private sale and a mutual structure. If one of these options were to be pursued, a transition plan would need to be established to ensure the success of the transfer.

Both options presented here retain a mechanism to pool risk. Terrorism risk is different to other insurable risks as the potential loss from a single event is very high, events happen at very low frequency and are unpredictable, and the actions of the government can have an impact on the probability of an event. The Pottinger report concludes that a risk pool, such as the one operated by the ARPC, is the most cost-efficient way to provide access to retrocession markets. The report

concludes that the same level of retrocessions may not be available to individual insurers outside a risk pool.⁹ This view was reinforced in consultations with the industry.

Both options also contemplate the continuation of the government guarantee. The Pottinger report estimates that the private sector currently can provide only \$3 billion — \$5 billion in retrocession coverage for terrorism risk in Australia, below the current size of the scheme and the estimated maximum losses under a single large terrorist incident. In the event of a terrorist incident where losses exceeded those covered by the private sector, it is likely that the Government would be called upon to provide additional financial support. An explicit government guarantee reduces uncertainty, decreases insurance premiums, and ensures that the government receives adequate compensation for the risk faced in acting as an insurer. Most foreign schemes have some form of government support.

Sale of the ARPC by trade sale or initial public offering

A private sale of the ARPC has the potential to reduce government involvement and risk taken by the government, as well as realising value for the government that is currently tied up in the ARPC. The government could seek to retain majority ownership through a limited share offer or pursue full privatisation.

Establishing a likely purchase value for the ARPC is difficult without exact knowledge of how the scheme would operate after a sale. The factors to be considered include how much control the private entity would have over premiums and the ability of the purchaser to diversify risk; market sounding reports suggest that few market participants would be interested in purchasing an insurer that only covered terrorism risk. The value would also be affected by any minimum prudential capital requirements that might be applied, required provisions for charges following a major claim, and whether the Act will continue to deem insurance cover for losses caused by terrorism incidents into eligible contracts.

If the scheme settings remain as they are, Pottinger considers that private sector buyers would place little value on the ARPC. The Pottinger report estimates that the current premium and cost structure of the ARPC would generate a return on equity below that of other listed insurers. The potential purchaser may also be required to inject capital into the ARPC to meet prudential capital requirements if the ARPC was privately owned, lowering the value to a potential purchaser.

While the settings of the scheme can be changed to facilitate a sale, a clear transition plan to establish and maintain the value of the ARPC would be required.

A significant policy issue is that a privately-owned ARPC would likely operate as the sole provider of terrorism reinsurance in Australia. Creation of a systemically important financial institution operating as a monopoly provider of terrorism reinsurance may trigger financial system stability concerns. In particular, it may be necessary to identify how the entity would recapitalise after a large claim. Privatisation may also impact on the prudential capital requirements of insurers reinsuring with the ARPC.

⁹ The Pottinger report examines alternative options which do not involve pooling in Section 6.7 of their report.

Transfer to a mutual structure

A second option is for the ARPC to adopt a mutual structure. Members could be either the property insurers or the insured property holders. An international precedent exists for a mutual structure owned by insurers - the UK Pool Re scheme.

Mutualisation of the ARPC offers several advantages. It could increase industry involvement and responsibility and align incentives between the administrators of the scheme and those who benefit from the availability of terrorism insurance. The private sector would also take a much larger role in operating the scheme, reducing the administrative burden on the government. However, mutualisation is unlikely to reduce the risks faced by the government. As discussed, for the capacity of the scheme to be maintained, a government guarantee would be required. Existing mutual schemes overseas also receive government support.

Again Pottinger considers that clarification of uncertain aspects of the scheme would be required before the scheme could be mutualised. This list includes clarification of the regulatory framework for the mutual structure and any regulatory capital requirements; the mutual entity's ability to set prices; the process for recapitalisation after a large claim; the nature of the government guarantee; and the coverage of the scheme. In addition, the governance and voting rights within a mutual would need to be considered to ensure the appropriate balance of interests between stakeholders. A comprehensive transition plan would be required to ensure the success of any mutualisation.

Mutualisation would not necessarily release capital to the government. The Pottinger report argues that a mutual structure may be subject to prudential capital requirements or may wish to hold capital in a similar way to a private entity. One implication is that it may be necessary for the government to 'gift' the existing capital to the scheme without compensation.

Assessment

The options outlined above may be viable in the longer term but do not present as attractive short-term solutions. None of the viable options identified by Pottinger involve complete withdrawal of government support, and would require major adjustments to the scheme, including heavily increasing the burden on the users of the scheme, if they were to release capital to the Commonwealth.

The current administrative structure is well established and provides terrorism insurance that cannot be provided to the same degree in the private market. In addition, the current scheme provides a high level of cost-effective access to international reinsurance markets for terrorism risk, with the ARPC being able to build a sizeable retrocession program. Market participants widely support the continuation of the current scheme in its structure and operation.

Following the events at the Lindt Café in Sydney in December 2014, the scheme provided certainty to claimants and allowed for effective communication between industry and the government. Government control of the scheme ensures that the scheme will continue to be operated in the public interest, including in the event of a large claim.

Against this background, there appears to be no compelling case for a major change in the ownership or administration structure of the ARPC in the short term. If market considerations change, further consideration could be given to these options. The appropriate next step would be to undertake a comprehensive scoping study to further consider the viability of alternative options

and set out an implementation plan for a preferred option. In the meantime, greater private sector participation can be encouraged by adjustments to the scheme parameters as set out in this review.

The Northern Australia Insurance Premiums Task Force is assessing the feasibility of a reinsurance pool for cyclone risk, among other options. Its interim report notes that the ARPC could potentially be used to offer a cyclone reinsurance contract (although the cyclone and terrorism pools would need to be completely segregated from each other).

CHAPTER 4: ENSURING FINANCIAL SUSTAINABILITY OF THE SCHEME

Although introduced on a temporary basis, the Act has been required to operate over a longer period than initially contemplated. The current pricing of the government guarantee and premiums, as well as settings relating to the purchase of retrocession and retention levels, should be reviewed to ensure the scheme is sustainable over the medium term and that industry takes an appropriate level of responsibility.

This chapter considers:

- the level of industry retentions;
- the purchase of retrocession by the ARPC;
- the fair level of compensation received by the government for the provision of the \$10 billion guarantee and the retention of capital by the ARPC; and
- the appropriate level of premiums.

INDUSTRY RETENTIONS

Issue

Whether:

- the current level and structure of retentions that apply to individual entities that reinsure with the ARPC are appropriate;
- the overall industry retention per incident is appropriate; and
- increasing this retention would encourage insurers to seek out reinsurance privately.

Recommendations

Recommendation 3: The four per cent rate of gross fire and industrial special risk premium (less any fire services levy) should be increased to five per cent.

Recommendation 4: Current maximum retention levels for individual insurers should be removed.

Recommendation 5: The maximum industry retention should be increased from \$100 million to \$200 million.

Background

When the scheme began in 2003, the Act required insurers who bought reinsurance from the ARPC to retain risk at a minimum of nil and a maximum of \$1 million, with the maximum industry wide retention set at \$10 million. Retentions were based on 4 per cent of the reinsured's gross fire and industrial special risk premium less any fire service levy.

The 2006 review of the Act recommended that, as the insurance industry had developed, retentions under the scheme should increase to a minimum of \$100,000 and a maximum of \$10 million, with an industry retention of \$100 million. Retentions were gradually increased as a result. The 2012 review of the Act recommended no change to retention levels.

Assessment

An analysis of ARPC's portfolio indicates that five insurers benefit from the \$10 million maximum retention and many insurers would have a retention of less than \$100,000 if the minimum was not applied. That is, smaller insurers are made to retain more than 4 per cent of relevant premiums, yet large insurers have their retention capped under the current arrangements at less than 4 per cent.

Further, some consolidation of insurance licenses has led to a situation where some insurance groups have effectively reduced their maximum exposure under the scheme by reducing the number of insurance companies they own that are subject to an individual cap of \$10 million.

The ARPC advises that insurer's retentions under the ARPC's terrorism reinsurance agreements are much lower than those used in natural catastrophe reinsurance, even though the ARPC retentions are more generous in that they are the maximum retention per year rather than per event.

Based on the above, the case can be made for increasing the retention level and removing the maximum individual retention in ARPC agreements to ensure that the insurance industry takes an appropriate level of responsibility in the event of a major claim under the scheme. Removing the maximum retention will also ensure a more even distribution of retention burden. Minimum retentions should be maintained to ensure that insurers retain a non-trivial level of responsibility under the scheme.

One of the underlying principles of the scheme is that it should be designed to allow the re-emergence of the commercial market for terrorism risk cover. Raising retention levels requires insurers to retain a greater amount of terrorism risk, for which they can self-insure or seek to commercially reinsure. Either course of action increases private sector involvement in the provision of terrorism risk cover. Increasing retentions also increases the relative attractiveness of commercial terrorism reinsurance.

CONTINUATION OF RETROCESSION PROGRAM

Issue

Whether the ARPC should continue to have the discretion to purchase retrocession in the private market.

Recommendation

Recommendation 6: That the ARPC continue to have the discretion to purchase retrocession, subject to the APRC assessing the need for, and levels of, its retrocession programme and value for money.

Background

For the first six years of the scheme, the ARPC did not purchase retrocession. Instead, premiums were used to build capital within the ARPC to extend the size of the scheme and provide a buffer before the unfunded government guarantee was called upon. However, once sufficient capital had built up within the scheme, the ARPC was given the discretion to purchase additional retrocession cover from the private market.

The ARPC has purchased retrocession every year since 2009. It initially provided cover of \$2.3 billion, but this amount has increased over time to a maximum of \$3.2 billion in 2014. In 2015, retrocession cover was slightly lower at \$2.9 billion.

Assessment

The purchase of retrocession creates a role for the private market in providing terrorism insurance under the scheme and ensures that the insurance of private sector assets is provided to the greatest degree possible by the private market. A strong argument can be made in support of continuing the retrocession program, in that it:

- supports the private sector provision of terrorism insurance and reinsurance;
- provides an indication of both the market price for terrorism insurance and the availability of terrorism reinsurance in the private sector;
- increases the overall capacity of the scheme (currently by around \$3 billion); and
- reduces the risk that the government guarantee will be called upon.

During consultation, industry stakeholders did not express particular views on the ARPC's retrocession program. Insurers generally benefit under current arrangements; the purchase of retrocession by the ARPC increases the size of the scheme and, therefore, the amount of reinsurance cover purchased by insurers.

On balance, it is prudent for the ARPC to maintain its retrocession programme, at a level that represents the best value for money having regard to the ARPC's other commitments, to ensure that the private reinsurance market for terrorism cover continues to operate in Australia, and to give information about the availability and price of private terrorism reinsurance. This approach would assist in a government withdrawal from the market in future if conditions improved.

COMPENSATION TO GOVERNMENT

Issue

Whether and to what extent the government should be compensated for the financial benefits it provides to the ARPC.

Recommendation

Recommendation 7: That the ARPC pay to the Commonwealth each year, commencing in 2016-17:

- a) a fee of \$55 million in respect of the Commonwealth guarantee of the ARPC's liabilities; and
- an additional amount of \$35 million per annum to reflect the Commonwealth's support in making the ARPC reserves available for payment of claims.

Background

The ARPC is not a mutual pool. It is a government owned reinsurance agency that provides reinsurance cover to industry on the same basis as that provided by commercial reinsurers. The premiums charged by the ARPC represent compensation for the risk of a claim occurring during the period of insurance. The government bears considerable risk in the event of a claim. In the first instance, the government's equity in the ARPC would be reduced as claims are paid out of its pool. Further, in the event of a large claim that exhausts the capital retained in the ARPC and any retrocession purchased by the ARPC, the government will be called upon to cover losses.

Since its inception, the ARPC has been backed by a government guarantee of the ARPC's liabilities to the amount of \$10 billion. From the scheme's commencement, it was intended that the Commonwealth be compensated for the risk it assumed in providing its guarantee. As outlined in the Revised Explanatory Memorandum to the Terrorism Insurance Bill 2002, the intention was "that risk transferred to the Commonwealth is appropriately priced and that the Commonwealth is compensated by those benefiting from the assistance".

Initially no charge was made for the Commonwealth's assistance to the scheme, allowing income from premiums to be used to build up capital within the ARPC as a reserve fund to act as a buffer against a claim on the government guarantee.

Nature of Government Support

In determining a fair amount of compensation for government support to the ARPC, it is instructive to consider the nature of that support. It is open to the government to raise premiums at any time, including following a DTI and subsequent claim on the scheme. This does not, however, have the consequence that the scheme is intended to be a 'post-funded' one in the sense that stakeholders would be required to 'repay' funds expended by the Commonwealth as a result of the guarantee. The ARPC provides reinsurance to insurers and is not able to demand repayment of any claims made on it. Similarly, the support provided by the Commonwealth as guarantor is in the nature of reinsurance rather than temporary liquidity.

Post-funding would be similarly complicated by the fact that the scheme as it currently stands is not compulsory, so that any increase in premiums following an event may result in insurers looking for retrocession cover outside the ARPC scheme. In this regard, the terrorism insurance scheme stands in contrast to the Financial Claims Scheme, for example, which *imposes* a levy on industry, if required, in the aftermath of the failure of a financial sector entity. While flexibility remains for ARPC premiums to increase following a large claim, insurers are not compelled to reinsure with it.

The result is that the support provided by the government guarantee is akin, if not identical to, retrocession cover, and this is an appropriate starting point for assessing the amount of compensation that should be paid to the Commonwealth.

Assessment

From the 2012-13 fiscal year, the ARPC began to compensate the government for the guarantee and this has continued to the time of this review. The current compensation arrangements are split into a fee and dividend: the fee represents a reasonable annual charge for the guarantee (\$55 million), while the dividend (\$57.5 million) provides retrospective compensation for the years that taxpayers were not compensated for providing the guarantee. The dividend is set to cease after 2017-18. A study by the AGA put the value to the ARPC (and those it reinsures) of the guarantee over this period

(having regard to the background as set out above) at least \$800 million. The task of this review is to assess an appropriate and sustainable level of compensation for the ARPC to pay to the Commonwealth on an ongoing basis.

Pottinger estimates that, if the ARPC was to replace the government guarantee with private retrocession of \$10 billion in the private market (if it was available), this would cost around \$200 million annually. This estimate assumes the premium paid by the ARPC would be equal to the marginal rate on line for the ARPC's retrocession program in 2014. Pottinger argues that this rate is the minimum rate at which the private sector *could* provide retrocession.

The AGA provides an intentionally more conservative estimate of the value of the guarantee to the ARPC of around \$55 million, significantly below the charge the Pottinger report estimates would be applied by a private sector reinsurer. This estimate assumes the first dollar of cover provided under the guarantee could be priced at the marginal rate on line of the retrocession programme, but that reasonable fee falls for each additional dollar of the guarantee provided. In effect, the AGA's valuation implies zero charge for the last \$3 billion of the guarantee. The end result is a fee below the private sector charge as the government does not have to achieve 'market returns'.

To date, the government has received no compensation for allowing the ARPC to retain capital to fund a potential claim, even though the ARPC has built up a significant pool through its reinsurance operations. Pottinger estimates that the cost to the ARPC to reinsure the first \$360 million of losses in the private market, which would currently be funded using the capital retained by the ARPC, would be between \$30 million and \$70 million. A similar value of \$35 million is obtained by the AGA based on the ARPC holding a capital pool of \$500 million. Both of these calculations draw on actual premiums paid by the ARPC for retrocession.

Given the principle that the government should be fairly compensated for taking on the risk, a fee or dividend consistent with the AGA's more conservative estimate of \$35 million is considered more appropriate than a full commercial rate. This fee represents fair compensation for the provision of around \$500 million in government funds in the form of the pool and reserves.

Coupled with the fee of \$55 million for the \$10 billion guarantee, this equates to an ongoing annual compensation amount of \$90 million payable by the ARPC to the Commonwealth.

Compensation at this level still allows the ARPC to offer cover at below the rate that could be provided by the private sector. This is considered appropriate unless or until there is evidence that suggests this impedes the return of the private market to provide reinsurance cover for terrorism.

The assessment of the value of the government guarantee set out above assumes retrocession cover continues to be purchased at around the current level. If the retrocession program were reduced in size, the value of the guarantee would rise in line with the increasing risk that the guarantee would be called upon and the fee would need to be reviewed.

An implication of the higher compensation to the government is that the ARPC will need to raise additional premiums. This is discussed in more detail below.

PREMIUM PRICING

Issue

Whether current premiums:

- adequately reflect the cost of providing the terrorism reinsurance scheme; and
- in any way impede a competitor from providing terrorism reinsurance in Australia.

Recommendation

Recommendation 8: That the premiums charged by the ARPC be increased, with effect from 1 April 2016, to:

- 16 per cent for Tier A,
- 5.3 per cent for Tier B, and
- 2.6 per cent for Tier C.

Background

Insurers who seek terrorism reinsurance through the ARPC pay premiums to the ARPC, although insurers may choose to reinsure with other providers. Insurers may pass on the cost of reinsurance to their policy holders through premiums, although this is a commercial decision for the insurer.

When the scheme was first established, it was considered that reinsurance premiums of between 2 and 12 per cent of underlying commercial property insurance premiums would be adequate to build the pool (reserves for claims) and would not be a significant cost to smaller commercial property owners if passed on by insurers. The premium levels (as a percentage) have remained unchanged since 1 October 2003.¹⁰

Assessment

Two broad questions emerge in relation to whether the current premiums adequately reflect the cost of providing terrorism insurance: firstly, is the level of the premium sufficient and, secondly, is the mechanism for calculating the premiums appropriate?

The Pottinger report concludes that premium rates currently charged under the scheme are materially lower than implied by the cost of terrorism risk retrocessions purchased by the ARPC from the private sector. It estimates that, if the ARPC set premiums in line with the price of retrocessions, premiums could rise by over 100 per cent of current levels. The report further notes that the current premiums were set before there was a reasonable estimate of the cost of reinsurance (or retrocession) in the private market.

¹⁰ Tier A is CBDs of cities with populations over 1 million.

Tier B is urban areas of all State capitals plus cities with populations over 100,000 eg Newcastle, Geelong, Wollongong. Tier C is all other areas of Australia

Pottinger's assessment could therefore underpin a doubling of current reinsurance premiums charged by the ARPC. This is not, however, the result recommended in this review. The principal determinant of the marginal price for reinsurance/retrocession in the private market is the cost of capital of the reinsurers concerned. Given that the government does not need to achieve 'market returns', it is not considered unreasonable that the charges levied by the government through the ARPC are lower than those that would be set by the private sector for reinsurance.

At this stage, it is unlikely that the premium settings are currently restricting competition or the development of a private market for terrorism risk (see Chapter 2), although the potential for a private market to re-emerge, and any effect ARPC premium rates have on this, should continue to be monitored.

Nevertheless, the ARPC must generate sufficient premiums to cover its ongoing costs and ensure that those who benefit from the scheme share an appropriate burden of the cost. At current levels, the premiums appear sufficient to cover operational costs, to cover the fee for the government guarantee and to purchase a degree of retrocession cover while maintaining the capital pool at around current levels. However, the current level of premiums is not enough to provide a return on the equity held by the ARPC that will be used as the first tier of funding in the event of a claim. An increase in the premium pool is, therefore, recommended.

The second question is whether the mechanism for calculating the premium is appropriate. This is the practice of setting premiums as a percentage of gross fire and industrial special risk premiums charged by the insurer and of using a community rating. Potential alternatives exist, including pricing premiums based on a larger number of criteria than only location and setting premiums as a proportion of the sum insured.

The Pottinger report considers that some level of community rating is appropriate in the context of the terrorism insurance scheme. The current system balances the need to take into account certain risks, such as geographical location, while maintaining a simple system that is well-established and understood by stakeholders. Setting premiums for properties using a more complex calculation of the risk attached to each property would raise costs significantly, without necessarily implying that the premiums charged would accurately reflect the risk taken on by the ARPC. Setting premiums as a proportion of the gross fire and industrial special risk premiums links the ARPC's premiums to conditions in the wider insurance market and is a simple mechanism to allow premiums to increase over time with property values.

It is, therefore, proposed that the ratios between the premiums under the current tiered structure be maintained, but that the level of premiums be increased with effect from 1 April 2016 to ensure the ARPC can remain self-funded over the medium term while reasonably compensating the Commonwealth and maintaining an appropriate level of capital.

In consultations with the insurance industry on premiums, a number of parties expressed a view about calculating premiums as a percentage of the insured value of the asset. Adoption of this method of calculation would give the ARPC a more stable funding base as it would overcome the cyclical nature of insurance premiums and make ARPC's funding smoother.

Further consultation should be undertaken with insurers to assess the likely impact of such a change, including compliance costs, on their systems and processes, with a view to considering the adoption of this methodology at a later date.

CHAPTER 5: CLARIFYING THE COVERAGE OF THE SCHEME

MIXED-USE AND HIGH-RISE RESIDENTIAL BUILDING COVER

Issue

Whether the scheme should be extended to cover 'mixed use' buildings and high value residential buildings.

Recommendation

Recommendation 9: That the scope of the scheme be extended so that it applies to:

- a) buildings in which at least 20 per cent of floor space is used for commercial purposes; and
- b) buildings with a sum-insured value of at least \$50 million, whether used for commercial or other purposes.

Background

The scheme set up by the Act was intended to cover commercial property. The rationale for confining the scheme to commercial property is set out in the Explanatory Statement to the Terrorism Insurance Regulations:

An assessment of the Australian insurance market by Trowbridge Consulting, assisted by Chiltington International, in June and July 2002 found that virtually no terrorism-related insurance cover is available for commercial property and business interruption. The Government therefore decided that its replacement terrorism insurance scheme should cover commercial property.¹¹

This decision was given effect by excluding policies that cover losses to property that is used wholly or predominantly for personal, domestic or household purposes by the insured.¹²

At each review of the Act, the scope of the scheme has been reviewed. One consistent call from stakeholders has been that consideration should be given to extending the scheme to certain classes of residential buildings. Most recently, the question was considered in the 2012 Review, which declined to recommend that the scope of the scheme be extended. It did, however, recommend that the issue be re-examined at a later stage.

Past reviews have come to the conclusion that the scheme should not be extended to any class of predominantly residential building primarily because there was no evidence to suggest that the lack of coverage for that kind of property was not having an acute economic effect in the same way the lack of coverage for commercial property had in the lead-up to the establishment of the scheme. Against a background where the scheme was established to address that specific economic effect

¹¹ Terrorism Insurance Regulations 2003, No. 162, Explanatory Statement.

¹² Terrorism Insurance Regulations 2003, regulation 7 and Schedule 1, paragraph 2(d).

and was intended to exist only for as long as needed, the conclusion in past reviews has been not to extend the scheme. That view is re-examined in this review.

Assessment

This review has concluded that, after more than a decade in operation, the scheme should continue for the foreseeable future. As the need for the scheme persists, arguments that appeal to its temporary nature become less convincing, and the need to deal with potentially inequitable results if a major terrorist act were to occur becomes more pressing.

A study by Finity Consulting, undertaken for the purposes of this review (Annex B), has indicated that there are still classes of buildings for which terrorism cover is unavailable in the private market (and currently unavailable under the terrorism insurance scheme). These are buildings with between 20 per cent and 50 per cent commercial floor space, and buildings with a sum insured value of at least \$50 million, whether used for commercial or other purposes.

If a major terrorist event were to occur, the result could be that buildings in close proximity were treated differently under the Act due to variations in the nature of the buildings' use. The result would be that owners of some buildings would be dealt with in an orderly fashion under the scheme, while others would be left to appeal to governments for assistance in a less structured way.

The government currently recovers no compensation for the risk that it may be called upon to cover those outside the scheme. Expanding the scheme enables the government and tax payers to be suitably compensated for bearing that risk.

A large majority of respondents to the market soundings exercise conducted by Pottinger recommended broader coverage of predominantly residential mixed-use buildings by the terrorism insurance scheme. Respondents indicated that they considered the exclusion of these buildings from the scheme to be inequitable. The view was expressed that, should a terrorist attack cause material damage to a building that is not covered by the scheme, the government would be likely to come under pressure to provide financial support to the affected parties. It was thought that including such buildings in the scheme would allow the government, through the ARPC, to collect insurance premiums in advance of such an event.

Finity's 2014 analysis of the impact of including mixed-use and high-rise residential buildings in the scheme focused on buildings located in Sydney and Melbourne Tier A postcodes. Finity found that including existing mixed-use and high-rise residential buildings in these locations in the scheme would increase the total sum insured by the ARPC in those locations by approximately 1.2 per cent and 9.7 per cent, respectively. Finity examined the impact on the premiums received by the ARPC of including mixed-use and high-rise residential buildings in the scheme. It was found that, across all Tier A postcodes in Australia, including existing mixed-use buildings would increase premium income by between \$100,000 and \$200,000 per annum, while including existing high-rise residential buildings would increase premium income by between \$700,000 and \$1.4 million per annum.

Finity also concluded that, while including mixed-use buildings in the scheme would not significantly change the government's exposure, the inclusion of high-rise residential buildings would generally increase the government's exposure; for some key risk locations, including high-rise residential buildings would significantly increase the government's exposure to losses from a declared terrorist incident.

This review recommends that the scheme be extended to cover buildings of those classes where terrorism insurance is unavailable in the private market.

IMPACT OF EXCLUSIONS IN INSURANCE POLICIES

Issue

There is some uncertainty in the insurance and reinsurance markets as to the effect of some exclusions in eligible insurance contracts. For example, some stakeholders expressed the view that general exclusions in insurance contracts may, despite the application of the Terrorism Insurance Act, remain effective to exclude liability to pay claims.

Recommendation

Recommendation 10: That the application of the Act be clarified by amendments that remove doubt about whether certain losses would be covered under the scheme; in particular, losses attributable to terrorist attacks that use chemical or biological means.

Assessment

Once a terrorism incident has been declared, the Act operates to render terrorism exclusions in eligible insurance contracts of no effect. Section 8 of the Act defines a terrorism exclusion as: an exclusion or exception for acts that are described using the word 'terrorism' or 'terrorist' or words of similar effect; or other acts that are substantially similar to terrorist acts as defined in Section 5 of the Act.

Many insurance contracts contain a range of exclusions (general exclusions) that exclude cover for losses from things like: chemical, biological and nuclear explosion, pollution or contamination; the destruction of electronic data; or the effects of micro-organisms. Doubt has arisen as to whether such exclusions constitute terrorism exclusions as defined by the Act.

This is because these exclusions do not use words like 'terrorism' or 'terrorist' or other words that specifically refer to events like terrorism, but rather merely exclude losses of a particular class of event.

If this view is correct, losses of a particular class could be effectively excluded even where they came about as the result of events declared to be terrorist incidents under the Act. Take, for example, the release of a toxic chemical agent in such circumstances that caused the event to be declared a terrorist incident under the Act. On one view, a clause that purported to exclude damages caused by the release of chemical agents, but made no mention of terrorism or like terms, would remain effective to exclude the insurer's liability to pay claims for losses caused by the event.

The uncertainty over whether general exclusions would be voided by the Act has created a lack of clarity over the coverage afforded by the terrorism insurance scheme.

When the scheme was introduced in 2003 it was the intention of the (then) Government that a terrorist event using chemical and biological means should be covered.

Chemical and biological attacks are covered in most international pools.

In its report, Pottinger recommended that the government provide clarity in relation to any restrictions that apply to the cover provided by the scheme, as uncertainty over the extent of cover may create both economic and political risks.¹³

In the market soundings exercise conducted by Pottinger, there was strong support from respondents for clarifying the coverage of the scheme in relation to chemical and biological means of attack. Some responses from reinsurers to this exercise also highlighted the lack of clarity over the impact of general exclusions on the coverage of the scheme. Some reinsurers indicated that they would expect losses from biological and chemical hazards associated with terrorist attacks to be excluded from the scheme's coverage, through the operation of general exclusions in insurance contracts, while others expressed the opposite view. Should such an event occur the uncertainty surrounding the extent of cover provided by the ARPC would potentially create both economic and political risks.¹⁴

If the government was to clarify, through legislation, the coverage of the terrorism insurance scheme, this would require careful consideration of both the operation of general exclusion clauses, and whether losses from certain types of declared terrorist incidents should be explicitly excluded from coverage in the same manner as losses from nuclear hazards. Detailed consultation with stakeholders would be needed on these issues.

The Review recommends that the lack of clarity surrounding exclusion for terrorist attacks using chemical or biological means be resolved as soon as possible.

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¹³ Pottinger Report, page 76.

Op cit, page 82

APPENDIX A: TERMS OF REFERENCE

Treasury will report to the Minister on:

- Whether there continues to be market failure in the private sector supply of terrorism insurance and, consequently, whether there is a need for the Act to continue in operation;
- Options on the future of the Act, including if there are possible alternative modes of ownership of the ARPC available to the Government and the costs and benefits of each alternative;
- Whether the pricing of the scheme (the premium rates and tier structure), the level and structure of insurer and industry retentions, and the purchase of retrocession cover (including its level and cost) continue to be appropriate and do not distort demand for insurance;
- Whether the operation of the scheme should be extended to include mixed commercial and residential use buildings, and high-rise residential buildings; and
- Whether refinements to the scheme are necessary to clarify coverage for biochemical attacks, having regard to the effect of insurance policy exclusion clauses such as Chemical, Biological, and Pollution exclusions.

In conducting the review, Treasury will incorporate input from an expert external consultant. The consultant will be instructed to provide a written report to Treasury.

APPENDIX B: INTERNATIONAL APPROACHES

Many developed countries have national terrorism insurance systems in place. Countries with a history of terrorism tend to have long-standing government-run terrorism insurance schemes. For example, the Spanish scheme was established following the Spanish Civil War; the South African scheme was set out following the political unrest of the 1970s; and the Israeli scheme was started early in Israel's statehood.

In the early 1990s, the UK Government and the UK insurance industry set up the Pool Reinsurance Company Limited (Pool Re) scheme. The scheme was designed to deal with a market failure for the provision of terrorism insurance following terrorism incidents related to the troubles in Northern Ireland and the flow-on effects of a lack of insurance on the UK economy.

A large number of schemes were set up following the September 11 terrorist attacks, including in Austria, France, Germany, India, the Netherlands, Switzerland, the United States and, of course, Australia.

RECENT DEVELOPMENTS IN THE UNITED KINGDOM AND UNITED STATES

In the English-speaking world, there has been a push to make the insurance industry pay more for government guarantees, as well as to increase the amount of risk borne by the industry.

The UK Government recently announced changes to the UK scheme that push their scheme's costs towards the insurance industry and away from taxpayers. For example, it will charge Pool Re (the UK scheme) a fee for the UK Government guarantee of the equivalent of 50 per cent of premiums, in addition to a dividend payment of 50 per cent of any surplus generated, half of which will go to the UK Government and half of which will be paid to members of Pool Re. The UK Government also recently announced that Pool Re will be permitted to seek retrocession cover.

In the US, the federal terrorist risk insurance scheme was recently reinstated after the scheme briefly lapsed due to delays in getting the bill passed in Congress. Some changes to the scheme push more of the responsibility onto industry in the event of a terrorist attack. The changes raise industry retentions in the event of a claim, for example, by 2020, the amount of an incident that triggers the government scheme will need to be \$200 million, with co-insurance from the insurance industry increased to 20 per cent.¹⁵

Towards the end of 2014 and into early 2015, the US scheme faced uncertainty because it was not clear whether the US Congress would extend the scheme. Full effects on the US economy and businesses were not felt in this short lapse as many businesses did not wish to publicise the nature

¹⁵ Guy Carpenter, 'A Comparison of the Federal Terrorism Insurance Backstop Legislation', 8 January 2015.

of their vulnerability in the absence of TRIA. ¹⁶ However, no major cancellations of building projects or events are known to have occurred. ¹⁷

Part 3.8 of the attached report by Pottinger discusses some of the recent developments in international terrorism schemes.

HOW THE AUSTRALIAN SCHEME COMPARES WITH OTHER SCHEMES

The Australian scheme is similar to terrorism insurance schemes in other Organisation for Economic Co-operation and Development (OECD) countries, with some combination of a pool, reinsurance and a government guarantee, especially those established after the 2001 terrorist attacks (for example, Belgium, Denmark, France, Germany, and the Netherlands).

Schemes established after September 2001 were generally set up as immediate responses to market failure in terrorism insurance, and were expected to be temporary in nature. Reflecting this, some schemes, such as those in Germany and the United States, include sunset clauses. Similar to the Australian scheme, they exist on a temporary basis with the intention that they only continue to operate while sufficient terrorism insurance cover remains commercially unavailable on reasonable terms. As with the Australian scheme, these two schemes are also subject to periodic review. Both the United States and German governments have extended their respective schemes.

Internationally, many terrorism schemes are public sector schemes, owned by the government. However, some are public-private partnerships run by an administrator operated as a mutual on behalf of insurance companies, but backed by a government guarantee.

Private sector provision of terrorism insurance around the world is limited. In most countries, the private sector does not provide terrorism insurance, even in countries where there is no terrorism insurance scheme. In India and Singapore, limited terrorism reinsurance is provided by industry consortiums.

While the Australian scheme covers property that has predominantly commercial floor space, a number of schemes among other OECD countries go further, covering all commercial property, residential property and their contents. The German, UK and US schemes resemble the Australian scheme most, focusing on cover for commercial property and business interruption.

Similarly, while the Australian scheme excludes cover for nuclear and radiological risks, they are covered by a number of other schemes. The Danish scheme was established specifically to cover nuclear, radiological, chemical and biological risks. The German scheme, on the other hand, excludes nuclear risks, while insurers in the United States have the option to exclude coverage for NBCR risks.

For a detailed description of the operation and ownership structures of foreign terrorism insurance schemes, see Section 5 of the Pottinger Report.

¹⁶ Sturdevant, Matthew 31 December 2014, Hartford Courant, www.courant.com/business/connecticut-insurance/hc-terrorism-insurance-act-expires-20141231-story.html,viewed 29 January 2015.

¹⁷ Lehrer, Eli, 23 December 2014, The Weekly Standard, www.weeklystandard.com/blogs/market-fine-after-congress-fails-reauthorize-fed-backed-terrorism-risk-insurance_822353.html, viewed 29 January 2015.

ANNEX A: POTTINGER REPORT

Triennial Review of the ARPC	
Report to the Department of Treasury	12 th February 2015

Contents

1.	Exec	utive summary and key conclusions	4
	1.1	Introduction and purpose of this report	4
	1.2	High level observations arising from our review	4
	1.3	Conclusions in relation to whether there continues to be market failure	5
	1.4	Conclusions in relation to the pricing and structure of the scheme	7
	1.5	Conclusions in relation to alternative possible modes of ownership	10
	1.6	Overall observations on the findings from our review	19
2.	Cont	ext to our report	21
	2.1	Background to our report	21
	2.2	Policy objectives	21
	2.3	Nature of risks accepted by the ARPC	22
	2.4	Key areas of focus	22
	2.5	Pottinger's approach to the assignment	23
	2.6	Approach to market soundings	23
3.	Natu	re and extent of ongoing market failure	26
	3.1	Introduction	26
	3.2	The emerging environment for terrorism risk	26
	3.3	Declared Terrorist incident	29
	3.4	Implications drawn from current reinsurance arrangements	30
	3.5	Resilience of availability of insurance from the market	32
	3.6	The role of the ARPC	33
	3.7	Potential for transitional arrangements	34
	3.8	Experience in other markets	35
	3.9	Conclusions on the nature and extent of market failure	36
4.	Revi	ew of pricing, structure and retrocessions	37
	4.1	Introduction and scope of ARPC's activities	37
	4.2	The pricing of the scheme	38
	4.3	Mechanism for establishing claims under the scheme	39
	4.4	Payment of claims made on the ARPC	41
	4.5	Changes to the structure of the scheme	43
	4.6	Current market pricing the renewal process	43
	4.7	Overall conclusions on pricing	44
5.	Glob	al terrorism reinsurance schemes	47
	5.1	Overview of other major terrorism reinsurance schemes	47
	5.2	The history of terrorism insurance schemes	48
	5.3	Early schemes	49
	5.4	The United Kingdom scheme (Pool Re)	49
	5.5	Post 9/11 schemes	52
	5.6	Modern schemes	56
	5.7	Commercial schemes	57
	5.8	Observations and implications for the future of ARPC	57

6.	Optio	ons for the future of ARPC	59
	6.1	Implications of long term policy objectives	59
	6.2	ARPC's twin role as scheme administrator and insurance provider	62
	6.3	Mechanisms for further privatisation of insurance risks	63
	6.4	Alternative modes of ownership which preserve a pool structure	65
	6.5	Models for privatisation of the ARPC's role as scheme administrator	72
	6.6	Alternative approaches for transferring insurance risks to the private sector	76
	6.7	Alternative approaches which do not utilise a pool structure	79
	6.8	The nature of government support to terrorism risk pools	80
	6.9	Other matters to be addressed should a pool structure be continued	81
	6.10	Timing considerations	82
	6.11	Summary of major items to be addressed before any privatisation	83
	6.12	Regulatory capital considerations and related matters	84
	6.13	Rating agency, economic and other financial considerations	85
7.	List o	f figures	86

This document is tablet friendly - the table above provides links to the sections in the document. Clicking on "return to index" at the foot of each page will return you to this index. Please direct any enquiries in relation to this document via our web site at www.pottinger.com or by phone to +61 2 9225 8000.

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1. Executive summary and key conclusions

1.1 Introduction and purpose of this report

Pottinger was appointed in August 2014 to assist Federal Treasury with its triennial review of the Australian Reinsurance Pool Corporation (ARPC). The underlying purpose of Treasury's review is to satisfy the conditions of the *Terrorism Insurance Act 2003* by assisting the Minister in preparing a report that reviews the need for this Act to continue in operation. Pottinger's role is to provide input in relation to:

- Whether there continues to be **market failure** in the private sector supply of terrorism insurance, and consequently whether there is a need for the Act to continue in operation;
- Whether the pricing of the scheme (the premium rates and tier structure); the level and structure of insurer and industry retentions; and the purchase of retrocession cover (including its level and cost) continue to be appropriate, and do not distort demand for insurance; and
- Options on the future of the Act, including if there are possible alternative modes of ownership of the ARPC available to the Government and the costs and benefits of each alternative.

Our review has been completed at a time when the National Terrorism Public Alert level of the risk of a terrorist attack is higher than at any time since the formation of the ARPC. More broadly, globally there has been a significant increase in the profile of terrorist activity.

Since the formation of ARPC, the number of terrorist incidents globally has increased significantly. Against this background, the recent increase in Australia's terrorism alert level can be seen as the continuation of a trend that has evolved over the medium to long term. Globally, whilst the substantial majority of terrorist incidents by number have occurred in regions such as the Middle East, the largest incidents by financial impact have occurred in major financial centres, particularly New York (the 9/11 bombings) and London (Bishopsgate, Baltic Exchange and NatWest Tower bombings in the early 1990s).

More broadly, the recent increase in the level of terrorist activity and threat, reflected in the increase in the official terrorist threat level in Australia, highlights the importance of the ARPC. We believe that the underlying insured parties that benefit from terrorism reinsurance should value the cover that ARPC provides. In this context, we note that the majority of stakeholders that we approached in relation to the market soundings exercise warmly welcomed the opportunity to provide their perspectives.

1.2 High level observations arising from our review

The ARPC is systemically important to Australia's financial system. Through providing a substantial level of reinsurance of terrorism risk, the ARPC provides a line of defence to banks operating in Australia should there be a major terrorist event by providing insurance of properties which represent collateral for loans. Meanwhile, insurers and reinsurers have all indicated strong support for the use of a pooling mechanism as part of any national terrorism reinsurance arrangements. In addition, at a deeper level, the scheme also helps to ensure business continuity in the face of a major attack and to finance the necessary rebuilding.

As background to our more detailed conclusions, we have drawn a number of overarching observations from our analysis and our engagement with a wide range of stakeholders. We summarise these briefly below:

- Terrorism insurance provided by the ARPC will be of critical importance to the smooth functioning of the Australian economy should the country ever be subject to a terrorist attack which has a material financial impact. Despite this importance, few people in the business or financial communities are aware of the existence of the ARPC. Whilst at one level this is a reflection of the success of the organisation, there are risks inherent in those communities taking such a laissez faire approach;
- Similarly, the banking sector appears to pay relatively little attention to the ongoing functioning of the ARPC. We have been surprised at this, as we understand that the banks were originally strong proponents of the scheme. In part, however, we believe that this reflects the strong capital position of Australia's banks and what are typically low concentrations of risk in any one property or counterparty;
- Underlying insured parties appear to feel little connection with the scheme. Terrorism risk appears to be a background consideration, which may feature as part of a board risk review process, but it does not appear to be considered a material business risk; and
- The precise structure of the ARPC scheme is not well understood, not least because it is hard to assess from public domain information. This leads to misunderstandings regarding the nature of risk cover that is being provided by the ARPC, the nature of risk that is being transferred to the Australia Government through the operation of the "guarantee" and thus the true nature of "dividend" payments to government¹.

Our report has addressed the three major areas of focus in detail. We provide a brief summary of our overall conclusions below.

1.3 Conclusions in relation to whether there continues to be market failure

In relation to whether there continues to be market failure in the private sector supply of terrorism insurance, and consequently whether there is a need for the Act to continue in operation, we have concluded that:

- Partial market failure continues, with terrorism risk retrocessions² available to cover only about 30% of the \$10bn of cover provided by the government. This reinsurance relates to claims on the fund of over \$360m and up to around \$3.6bn, with ARPC retaining some 10% of this risk (ie \$300m) via co-reinsurance;
- The cost of obtaining reinsurance for smaller claims has declined over recent years, but remains high for example, the cost of obtaining reinsurance for up to \$15m of claims on the ARPC above \$360m (ie a \$15m claim with a \$360m excess on top of industry retentions of up to \$100m) is 5.50% of the sum insured, with ARPC retaining some 20% of this risk (ie \$3m) via co-reinsurance;
- We note that the private sector offers adequate coverage for smaller events (between \$360m and \$3.5bn in value) through these retrocessions, but does not provide any cover for larger events³. The overall cost of this reinsurance is 2.75% of the cover provided, ie approximately \$80m per year;

³ We note that historically there have been many terrorist events globally which have had a financial impact of below around A\$3bn (in current value terms), but only one event of larger magnitude.



 $^{^{1}}$ We note that some stakeholders believe the guarantee to operate as a liquidity facility which must be repaid.

² le reinsurance of the related insurance risks.

- The ARPC has built up sufficient capital to be able to absorb the first \$360m of any claim, together with the majority of the around \$300m of risk associated with ARPC's retention of c10% of the risks between \$360m and \$3.6bn. We have estimated that the cost of purchasing such cover would be some \$38m to \$78m;
- The balance of cover ie primarily for claims in excess of \$3.6bn is provided by a retrocession from the Australian Government (the 'Commonwealth Government Guarantee'), at a cost of \$55m per year⁴;
- This highlights the effectiveness of the operation of a pool, as charges to members of the pool average 0.0043% of the value of property that is insured. Clearly in the event of a very large claim or multiple related claims, the total payout to insured parties will be capped and hence cover to individual parties may be materially lower than the total amount reinsured; and
- Larger terrorist attacks continue to be possible, although the risk of such events is very hard to assess. The ARPC has estimated that the largest likely claim from an individual attack a major central business district would result in damage in the order of \$8bn, well within the current capacity of the scheme. We note, however, that there are precedents in other countries of multiple attacks occurring within a relatively short period of time. These include the multiple 9/11 attacks in the USA and the multiple bombings in the UK in the early 1990s.

The figures included above are based on the reinsurance programme in place during the 2014 calendar year and the financial position of ARPC as at 30th June 2014. The ARPC has recently finalised its 2015 retrocession program, reducing retrocession coverage from \$2.919bn to \$2.620bn. It has also reduced its co-reinsurance participation from \$321m to \$305m and increased its minimum retention from \$360m to \$400m.

These changes have reduced the overall coverage provided to the private sector by the scheme from c\$13.5bn to c\$13.1bn⁵, ie around 3%. The net cost of the retrocession program has been reduced from \$72m to \$56.5m. Whilst the total exposure of the Commonwealth under the guarantee arrangements remains at \$10bn, the threshold at which a material claim would emerge has reduced.

As a result of our conclusions above:

- In our view the Act should continue in operation; and
- Whatever mode of ownership is pursued for ARPC, a single terrorism risk pool is likely to be the most cost-effective way to provide cover over the medium to long term; and
- There is no material likelihood of market conditions changing such that adequate private sector supply of terrorism insurance becomes available over the near to medium term; and
- As a result, **the ARPC should be given a permanent existence**, rather than being subject to a continuance review every three years.

The transition of ARPC to permanent existence would provide materially greater certainty to both the business and financial community that terrorism insurance coverage will continue to be available over the medium to long term. Currently, there can be no assurance of this, meaning that investors who make long term equity investment decisions or provide long term debt facilities cannot depend on the availability of such cover other than over the short

6

⁴ The 2014 ARPC Annual Report indicates that the ARPC will pay \$55m pa as a guarantee fee plus a dividend of \$57.5m for the next four years, for a total payment of \$112.5m a year for the next four years.

 $^{^{\}rm 5}$ January 2015 advice from the ARPC to Pottinger.

term. These issues would come into sharp focus following any major claim on the fund, or for example if one of the major schemes in other countries were to be closed.

In addition, a permanent existence may also allow additional efficiency, by allowing the organisation to make both strategic and operational decisions in a manner that is best aligned with long term outcomes.

The US terrorism insurance scheme expired on the 31st December 2014⁶. However its six year extension was approved by Congress in early January and subsequently enacted by President Obama on the 12th January 2015. The US scheme is, however, fundamentally different in structure from the Australian scheme, as we outline further later in this document.

As we explain further below, establishing the ARPC as a permanent entity would also be an important step in relation to a move to another mode of ownership for the organisation. Similarly, there are a number of other areas where further clarification of the precise boundaries of the ARPC scheme, and the nature of support provided by government, will be critical prior to any potential change of ownership. These changes will also be beneficial in improving transparency regarding the ARPC if the organisation continues to operate as a government-owned entity.

1.4 Conclusions in relation to the pricing and structure of the scheme

In relation to the pricing of the scheme (the premium rates and tier structure), we have concluded that:

- Estimating fair pricing for the scheme remains highly challenging. Whilst the potential level of damage that would occur in various risk scenarios is increasingly well understood, estimating the probability of a major event occurring remains problematic. This is because there have been no major events in Australia previously and to date the ARPC has been subject to just one claims (in relation to the Lindt Cafe event in December 2014, which is expected to fall below individual insurers event retentions);
- This problem is accentuated by the fact that such events are not random in nature, but rather reflect the action of terrorism groups from time to time. In addition, the risk of an event may be effected by government policy;
- Premium rates currently charged under the scheme are materially lower than implied by the cost of terrorism risk retrocessions purchased by ARPC from the private sector. In other words, if ARPC set premiums in line with the price of reinsurance⁷, premiums would rise significantly (potentially by over 100%);
- Currently, the ARPC is able to purchase risk retrocessions from the Australian Government for the balance of its exposure at a cost determined by the Commonwealth on a year to year basis. During 2014, the ARPC utilised this for cover between approximately \$3.5bn and \$13.5bn. As of 2014, the charge for this reinsurance cover is \$55m a year, or approximately 0.55% of the maximum claim amount. This is materially lower than the marginal rate on line than the highest tranche of cover available from the private sector;
- The ARPC produced around \$71m of income in 2014 prior to the cost of this insurance. Accordingly, the ARPC can meet the cost of retrocessions without the need for any

⁷ IE by using the marginal rate on line for the top tranches of reinsurance to calculate implied reinsurance costs for further cover between \$3.5bn and \$13.5bn.



⁶ http://usa.marsh.com/NewsInsights/ThoughtLeadership/Articles/ID/43204/US-Senate-Adjourns-for-2014-Without-Reauthorizing-TRIPRA.aspx.

increase in premiums. Thus, so long as the pricing of reinsurance from the private sector and from the government does not increase materially (even after a major terrorist attack), the pricing of the scheme remains reasonable. Even a modest increase in the cost of obtaining retrocession cover from either source would, however, necessitate an increase in the premiums levied under the scheme;

- In addition to the Guarantee fee, the Commonwealth currently intends the ARPC to pay a dividend of \$57.5m a year for each of the next four years. After allowing for the cost of government reinsurance, the ARPC generated a net profit before tax of some \$16.4m. Thus payment of the proposed dividend will reduce its net assets by approximately \$40m a year. As a result, the risk buffer provided by the Reserve for Claims will reduce progressively and the risk of a claim being on the Government-provided reinsurance will increase⁸;
- Furthermore, if there was a material increase in retrocession costs (whether from the private sector or from government) after a major claim event, then the current pricing would essentially imply that the majority of premiums would need to be collected after an event (rather than seeking to spread the cost of claims evenly over time). In such circumstances, the cost of paying a large claim would be met primarily by parties who are insured after that event occurs (if the government seeks to recoup the cost) or from consolidated funds;
- Given the above, greater clarity would be required regarding the cost of reinsurance provided by the Government over the long term should there be a decision to seek to transfer ownership of ARPC to the private sector;
- Irrespective of the pricing strategy adopted for ARPC, we believe that the use of a tiered structure as part of pool pricing remains logical, particularly given the extreme difficulty of assessing the likely frequency of claims (especially in relation to very large claims);
- This approach ensures that a level of community rating is built into prices which we believe is appropriate in the circumstances. Meanwhile alternative models for the structure of the pool, such as uniform pricing or individual pricing for risk, have significant drawbacks. The former would place a materially higher burden on areas where the risks of a terrorist attack are very low. The latter would entail a materially more complex approach to pricing with significant greater attendant cost; and
- The challenges of establishing the risk of any particular event make it very hard to determine the appropriate level of premiums to be charged for each of the tiers. We note very few parties have expressed dissatisfaction with either the pricing or the tier structure during our market soundings exercise.

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⁸ Logically the charge by the Australian Government for risk reinsurance should increase as the buffer reduces.

A summary of premiums collected by ARPC is set out below. This illustrates that the effective charges on value of sum insured are less widely spread than the variations when measured by the percentage add-on to fire insurance premiums paid.

Figure 1: Cost of terrorism insurance by risk tier (data for year to June 2013)

Tier	ARPC premiums	% of fire insurance	Value insured	% of value insured
Α	\$24.3m	12.0%	\$342bn	0.0071%
В	\$71.2m	4.0%	\$1,779bn	0.0040%
С	\$34.7m	2.0%	\$1,735bn	0.0020%
Total	\$130.2m	3.5%	\$3,009bn	0.0043%

In relation to the level and structure of insurer and industry retentions and the purchase of retrocession cover we have concluded that:

- Use of retentions by industry remains a logical mechanism for ensuring that minor claims do not have to be addressed by ARPC;
- The structure of insurer and industry retentions appears adequate in the circumstances, but there may be merit in indexing these limits over time;
- The purchase of retrocession cover provides benefit to the Government in reducing the risk of a call on consolidated funds by transferring risks to the private sector;
- The purchase of retrocession cover ensures that private sector pricing and capacity to provide such cover is known by ARPC and the Government this represents the most transparent evidence of whether or not market failure continues;
- The retention of a surplus within the scheme over time has allowed reinsurance to be purchased with a modest excess (\$360m in 2014, increased to \$400m in 2015). This materially reduces the cost of such retrocessions we estimate that the cost of purchasing such cover from the open market might be of the order of \$30m to \$70m; and
- The structure of the scheme means that increases in retrocession cover reduces the risk of a claim on the government guarantee, but not the maximum amount of that claim there may be merit in adjusting this arrangement over time, so that increases in retrocession cover available serve to reduce the maximum claim that may be made on government.

Finally, in relation to whether the above factors act to distort demand for insurance, we have concluded that:

- There is widespread support for existence, structure and operation of the scheme, from virtually all stakeholders, with very few suggesting that this should be changed;
- Similarly, there is widespread support for the pricing offered by the scheme, with very few parties suggesting that prices are too high;
- The relatively low cost of reinsurance offered by the ARPC (compared to that implied by the marginal rate on line for the highest level of reinsurance cover purchased by the ARPC) incentivises insurers to reinsure through the scheme rather than attempting to arrange their own reinsurance coverage; and
- In addition, the cap on liability offered by reinsurance through the scheme provides a further strong incentive to participate in the scheme, rather than seeking to access private sector capital directly.

Our analysis has shown that the premiums levied by ARPC are not sustainable, ie they are not sufficient to maintain the existing level of cover at current prices over the medium term.

9

Pottinger Return to index

In part this may represent a policy decision in favour of a post paid approach – ie where the majority of the cost of meeting claims is levied on participants in the scheme after such a claim is incurred.

Importantly, there has been widespread feedback that a pool structure represents the best mechanism for accessing private sector risk capital for the reinsurance of terrorism risks due to the ability to insure the same maximum probable loss over a larger base of insured parties. Thus, irrespective of whether the status quo is maintained, or if a different mode of ownership is implemented, we anticipate that a pool structure should be retained.

1.5 Conclusions in relation to alternative possible modes of ownership

Although most participants in the market soundings exercise have expressed their preference for the current arrangements to continue, alternative modes of ownership are possible and could be pursued in the near term. We have focussed on structures which preserve an underlying pool structure, as this represents the most cost-effective mechanism for ensuring cover for terrorism risk remains available to the entire Australian market on reasonable terms. Meanwhile, the factors that will impact the practical viability of any proposed privatisation pathway and the value that might be achieved are, however, complex. We outline these further below.

The value that would be attributable by the private sector to any particular structure will depend on the average levels of profit expected to be achieved over time, as well as the volatility of those profits year by year. In addition, to the extent that the organisation to be sold (or otherwise transferred to the private sector) retains insurance risks, the level of capital (such as the Reserve for Claims) retained to cover those risks will also be critical. It will thus be of central importance to define clearly the nature of activities to be undertaken by ARPC following any privatisation.

The value implied by any transaction involving ARPC will inevitably be benchmarked against the current valuations of Australia's two major listed general insurance companies, even though the nature of insurance risks accepted are very different. By way of illustration, these two companies (IAG and QBE) are currently valued at 14.1x and 14.8x FY2015 post tax profits post tax profits respectively⁹. Thus, before any allowance is made for differences in the risk profile of the organisations concerned, for every \$100m of market value ascribed to the organisation, ARPC would need to earn approximately \$7m of post tax profit (approximately \$10m pre tax).

In practice, ARPC's activities entail very different risks from those inherent in the IAG and QBE businesses. In particular, the latter include substantial elements of short tail, personal lines insurance business and whose portfolios are highly diversified.

As a result, we believe that it is helpful to consider ARPC's role as administrator of the terrorism risk pool separately from its role in transferring the underlying insurance risks to the private sector. In particular, we note that:

The role of administrator of the scheme requires no insurance risks to be accepted and very low levels of operational risk, as an administrator is simply responsible for day to day management and oversight of the pool. This role comprises the collection of premiums, arrangement of reinsurance (both from the private sector and from the Australian Government) and management of residual funds retained to ensure adequate short term liquidity and ongoing solvency within the entity itself. The

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⁹ Source: Capital IQ as of 5th January 2014.

administrator would not itself be responsible for the payment of claims themselves ¹⁰. As a result, the pool administrator is likely to have reasonably to highly predictable profits, although the absolute quantum of these profits need not be particularly high; and

The role of **terrorism risk insurer** may involve substantial levels of risk, depending on the extent to which such risks can be transferred to other parties. Currently this risk is shared between the government (via the guarantee), reinsurers (via retrocessions), the ARPC (via retention of a level of risk) and insurers/insured parties (via industry retentions). Private sector parties that accept this risk must be suitably authorised insurance companies and must therefore hold adequate claims reserves and capital, reflecting financial sector capital adequacy requirements. To the extent significant risks were retained and insured directly by ARPC, the organisation would need to maintain a significant capital base in order to meet any claims which emerge. Substantial levels of premium will be required to cover these risks while delivering an adequate return on capital, as illustrated further below.

In this context, we note that the ARPC has built up a **pool of capital** out of retained "profits" which allows the entity to act is primary insurer and to absorb the first part of any claim ¹¹. As a result, the company acts current as both pool administrator and as an insurer. It is exempt from financial sector capital adequacy requirements, and parties which rely on it for insurance do not have to hold capital themselves against the risk of ARPC failing to make payments when due as a result of the government guarantee.

Currently the premiums charged by ARPC are substantially lower than the market rate implied by the charges made by the private sector for the retrocession cover that is purchased by ARPC. As a result, amongst other things the profits achieved by ARPC are insufficient to cover the combined cost of the government guarantee and dividend payments to its shareholder. Thus, rather than being able to increase capital slowly over time, the organisation is consuming its existing capital relatively rapidly in order to make the requisite payments to government.

As a result, over time the current reserves of the ARPC will be depleted. Its ability to retain part of the risk associated with claims above its maximum retention level (\$360m in 2014) will reduce, meaning that extent of reinsurance cover purchased from the market will need to be reduced. As a result, the effective attachment point for government-provided reinsurance will effectively reduce, implying that the government should make increases to the cost of this insurance in due course¹². This will, however, further accelerate the rate of depletion of remaining reserves if no changes are made to pricing.

From a private sector perspective, the organisation is making a small underlying operating profit. In particular, the 2014 operating result of \$71.4m is stated before the cost of the

¹¹ To date, this capital position has been used to support low (ie below market rate) charges to insured parties. ¹² If the Government were to provide cover for the first \$360m of any claims that are currently covered by the Reserve for Claims, it would logically need to charge a materially higher price (ie rate on line) for that cover than was being charged for risk reinsurance which attaches at a much higher level (ie where the excess is much higher). Our indicative estimate above is that such reinsurance might cost between \$30m and \$70m per year, implying that premiums would need to rise by some 25% to 55% on average in order to generate sufficient premium income to pay for the estimated cost of retrocessions.



¹⁰ Changes to the scheme would, however, be required to separate the administrator's role cleanly from the underlying insurance pool, and so ensure that the ARPC could act as a pure administrator, rather than accepting part of the claims risks associated with the scheme (as it does currently).

government guarantee of \$55m per year¹³, implying an underlying profit of some \$16.4m before tax or around \$11.5m after tax (assuming a pro forma tax rate of 30%). This is equivalent to a return of 2% on existing capital of \$573m. Thus, if these profits were retained in their entirety, they would be sufficient to provide for roughly inflationary increases in the capital base, so long as there are no material claims on these reserves. In other words, shareholders would not be able to access any profit from the organisation. This would substantially depress the value of such an entity compared to listed peers such as QBE and IAG (where typically some 50% to 70% of profits are distributed as dividends).

Thus, despite ARPC's substantial embedded capital, under current pricing arrangements, the cost of the guarantee and the ARPC's limited profitability offset the value of its embedded capital, as this capital can effectively only be accessed if the scheme is wound up. In the light of the above, we have considered what changes might be required to the pricing and operation of the scheme in order for the entity to make adequate returns on capital from the perspective of the private sector.

Effects of a transition to "market" pricing

To be sustainable from a private sector perspective, the ARPC would need to generate annual income (from annual premiums and from earnings on reserves) sufficient to meet the cost of the requisite retrocessions (including government-provided retrocessions), the anticipated cost of claims (averaged over the long term, and taking account of investment returns), as well as ongoing operational costs. In addition, it would need to generate an adequate return on the capital required to operate the business, including any capital required from a regulatory capital adequacy perspective, and to be able to finance the increases in the capital base required over time (reflecting market growth, inflation etc).

We have used calendar year 2014 market rates for retrocession cover to illustrate the approximate costs that might be involved, together with operational costs, as summarised below:

- Cost of existing retrocession programme: \$74.1m¹⁴;
- Extension of above programme to cover 100% of risks above \$360m: \$8.3m;
- Cost of existing government reinsurance: \$55m¹⁵;
- Estimated illustrative market price for the cost of cover for first \$360m: say \$50m (estimate of \$30m based on 2014 figures and \$70m based on 2012 and 2013 figures)¹⁶; and
- Operating costs of just below \$10m.

Together, these costs total some \$197m, more than 50% higher than current premiums of \$130m.

Meanwhile, we note that the capital required to operate the ARPC relates almost entirely to its role as insurer, rather than as pool administrator. In a conventional insurance company, this capital is split into two elements:

¹³ The \$55m had not been levied in 2014. Additionally note that this guarantee fee is substantially less than the full market rate implied by the top tiers of retrocession.

¹⁴ Outwards retrocession premium of \$81.7m less retrocession commission income of \$7.6m.

 $^{^{15}}$ This assumes that the government does not charge full market rates for the guarantee fee over time.

¹⁶ A simple estimate based on the costs of the lower levels of retrocession purchased over the last two years implies that the total cost of reinsurance of the first \$360m of any claim would be at least 8.4% or approximately \$30m per year. The same calculation for the prior two years implies a total cost of around 19% to 20%, or around \$70m per year.

- The first is so-called **technical provisions**, ie provisions for the likely level of claims that may emerge over time, usually set high enough that there is at least a 90% probability of sufficiency (ie the provisions being sufficient to meet claims which emerge). Estimating the appropriate level of provisions is highly challenging for ARPC, as the risk of a large claim above the limit of reinsurance coverage is very hard to assess;
- The second element is **shareholders' equity**, ie the capital that is required to operate the business and to meet regulatory requirements. The latter takes into account both the minimum level of capital required by prudential regulators in the light of the risks being written, together with a prudential margin (to ensure that minimum capital levels are maintained even in the event of major claims over and above technical provisions, and/or losses on investments etc). Typically large insurers have maintained shareholders' equity of at least 1.5x the minimum capital requirement, and smaller insurers have typically maintained at least 2.0x the minimum capital requirement. ARPC is not currently regulated by APRA, and so a minimum capital requirement for the entity has not been established. Given the unusual nature of risks insured by ARPC, there are no obvious peers that can be used for comparison purposes.

When a conventional insurance company is sold, the technical provisions transfer with the entity together with the associated assets which are held to cover the technical provisions. Thus no consideration is attributable to these assets and liabilities, which essentially net off against each other. An acquiror does, however, pay for the net assets (ie shareholders' equity) that are acquired, together with a level of premium which reflects the profitability of the insurer in question¹⁷. The latter is effectively adjusted to take account of any material perceived over or under provision within the technical reserves.

The nature of risks underwritten by ARPC makes the separation of its capital between technical reserves and shareholders equity challenging, as there is no logical method for estimating the likely frequency of claims. Currently the accounts do not make this distinction, and the "Reserve for Claims" is reported as part of net assets.

Assuming that the Reserve for Claims continued to be treated as part of net assets, a private sector owner of the entity would expect to achieve a minimum return on that capital, typically of at least 10% to 12% post tax (with target returns commonly at set at around 15%). For illustrative purposes, a 10% to 12% post tax return on ARPC's total reserves of \$573m would equate to \$57m to \$69m post tax, or \$82m to \$98m before tax.

¹⁷ And adjustment for any potential overvaluation of assets acquired and/or undervaluation of liabilities.



Based on the estimate of arm's length pricing set out above, the ARPC would generate \$197m of revenues, together with investment returns (\$26.5m in 2014), implying total revenues in the order of \$226m. Assuming ARPC continued to retain the first \$360m of risk, together with the existing 10% participation in the reinsurance programme, it would earn a pro forma net profit after tax of \$60m, equivalent to a return on capital of 10.5%. A summary is provided below.

Figure 2: Transition to arm's length pricing – simplified statement of comprehensive income

Quote	Current	Adjustments	Pro forma
Premium income	129.7	67.3	197.0
Net reinsurance costs	(74.1)	-	(74.1)
Government reinsurance	(55.0)	-	(55.0)
Net premium revenue	0.6	67.3	67.9
Claims costs	0.0	-	-
Operating expenses	(10.7)	-	(10.7)
Underwriting result	(10.1)	67.3	57.2
Investment income	26.5	2.1	28.6
Pre tax profit	16.4	69.4	85.8
Pro forma tax charge	(4.9)	(20.8)	(25.7)
Post tax profit	11.5	48.6	60.1
Implied return on equity	2.0%	+8.5%	10.5%

Source: Pottinger estimates. Allowance made under adjustments for incremental investment income net of tax

These figures show that, a transition to estimated market pricing would deliver an adequate return on capital *so long as no claims were incurred.* This level of return would allow dividends to be paid to shareholders and some profit to be retained to support growth in the business (ie to allow the overall capacity to provide cover to increase over time). If valued on this basis (ie with no allowance made for the risk of claims), the ARPC would be valued at around its net asset value of \$573m. In particular, the ARPC would be able to distribute the majority of its post tax profit, whilst making retentions to provide for inflationary increases in its net assets.

In practice, an owner will also need to factor in an allowance for expected claims to its pricing (or its valuation of the company). This amount will be set such that the reserve for claims can be maintained (allowing for inflation effects etc) over the long term. The higher the annual allowance made for possible future claims, the greater the discount to net asset value that will be realised in the valuation. Alternatively, prices would need to be further increased to absorb this additional element of cost, for a valuation in line with net asset value to be achieved.

Such a business could potentially be sold via a trade sale or possibly via an IPO.

The ARPC could be sold by way of a **trade sale** to a private sector third party, such as an insurer, reinsurer (or specialist insurance scheme administration company)¹⁸. With a valuation of over \$500m, this would be a meaningful acquisition for most large insurance companies, but would be small enough to be a viable acquisition for a significant number of such companies;

¹⁸ A specialist administrator would reduce insurance exposure by reinsuring more of the risks inherent in ARPC, either with private sector reinsurers, or through the existing government guarantee arrangements.

Alternatively, in theory such an entity could also be sold via an **IPO**, thereby creating a listed specialist insurance company (or specialist scheme administration company). The resultant company would be a medium-sized company in the context of the Australian stock exchange, ranking on the borders of the ASX 200. We note, however, that the company has minimal recognition by retail consumers and low institutional brand awareness. In addition, it has an unusual niche market position in an industry sector (general insurance) which we believe it is not particularly well understood in Australia¹⁹. These factors will make an IPO more challenging than for a company with a simpler business model and greater brand presence.

Success of either approach will depend critically on market appetite at the time given the highly specialised nature of the business. Additionally, we note that the value realised for the Australian Government by such a transaction would result from the increases in pricing implemented in order to ensure that the ARPC could achieve an adequate return on capital – the inherent value of the ARPC on the current pricing basis is very low as explored below).

In either case, a variety of changes will be required to the regulatory framework within which ARPC operates, in order to give the subsequent owner much greater certainty regarding the operation of the scheme, including following any major claim event. These are outlined later in our report.

Should the Australian Government wish to pursue the transfer of ARPC to an alternative mode of ownership, we believe there would be considerable merit in undertaking a confidential market soundings exercise in order to gauge potential interest from purchasers in such a transaction before any public statement of intent is made regarding the future of ARPC. This will be particularly important given the highly specialist nature of the ARPC's activities and hence the potential for interest will likely be low. Similar soundings could potentially be undertaken in relation to an IPO by engaging with major equity distributors (both global investment banks and local broking houses, given the relatively small size of the potential IPO). It will, however, be more difficult to maintain confidentiality regarding market soundings for an IPO.

Further consideration in relation to the value of the Reserve for Claims

Overall, we believe that the current reserve for claims has low inherent value, for the reasons outlined below. In other words, the current level of the reserve for claims appears to be broadly reasonable given the nature and size of potential future claims which may be made upon it.

Logically, the value of the retention pool that is maintained should increase over time, for example with inflation. Meanwhile the assets that are held against these reserves will typically be invested in very low risk (ie short term) fixed income investments, earning a yield that is modestly higher than inflation. In this context, we note that:

- If there are no claims on the reserves, and the pool did not generate any profits or losses year on year²⁰, then the Reserve for Claims would generate a surplus each year of the difference between the inflation rate and short term government bond rates;
- Currently, short term government bond rates are very similar to inflation rates, implying that the Reserve for Claims has minimal inherent value. Alternatively, using the long

²⁰ le the premium income was sufficient to purchase retrocessions and to cover administrative costs, but no surpluses were earned.



¹⁹ This is a result of their being only two major general insurance companies, namely IAG and QBE, and only one major listed life insurance company (AMP).

term target inflation rate of 2.5%²¹ and the current yield on 15 year government bonds of around 3.2%, the intrinsic value of the Reserve for Claims would be around \$36m at a 10% discount rate, or some 10% of its headline value;

■ These figures, however, assume that no claim is ever made on the fund. It is challenging to assess the likelihood of a claim on these reserves, ie the frequency with which claim events on the fund of up to \$360m are likely to occur. If the average such claim was \$200m (in current value terms, ie was indexed for inflation) and claims occurred every fifty years, then the average cost of a claim in net present value terms would be some \$57m (at a 10% discount rate). If the frequency of claims increases to once every 30 years, the average cost of a claim in net present value terms would increase to some \$86m.

These figures illustrate that the expected cost of claims on the reserve fund are higher than the net present value of surplus income expected to be earned by the fund. In other words, in order to maintain the level of reserves in real terms and in the face of claims on the reserves, contributions would need to be made to the fund from time to time. We emphasise that the above figures are illustrative only – if the average claim on the fund is \$360m, then the net present value of such claims ranges between some \$100m and \$155m assuming a frequency of between 1 in 30 and 1 in 50 years. If the average claim on the fund is lower, then the net present value of such claims will also be lower.

In all cases, these figures also assume that no claim is made in relation to the risk assumed through participation in the retrocession programme, under which ARPC had a liability of some \$314.5m in CY2014. Taken together, these figures suggest that, assuming that the ARPC continues to operate, the intrinsic value of the Reserve for Claims is likely to be low.

Sale by way of mutualisation

A transition to market based pricing set out above illustrates that it is possible to generate sufficient proceeds to realise the capital that is currently retained within ARPC. This approach would require an increase in pricing of at least 50% in order that the ARPC could generate sufficient profits to be able to meet all relevant costs and to return a reasonable proportion of those profits to shareholders by way of a dividend. In other words value would need to be created by an increase in pricing implemented prior to (or at the time of) any sale. Given the significant change in pricing that would be required, it may also be necessary to consider making participation in the scheme compulsory, particularly in the aftermath of any major claim event.

In contrast, if there was an attempt to sell the ARPC in its current form, with current pricing remaining in place, investors would see an entity that was making continuing profits of approaching \$11.5m per year (before allowance for the cost of future potential claims on the fund) and which could not distribute dividends as shareholders unless the scheme were disbanded. We believe that the private sector would ascribe very little value to such a business, as it would generate no cash flows for its owner.

As a result, if there was a policy desire not to increase pricing, the ARPC could be **transferred into a mutual structure**. This would mean that the ARPC would become owned either by insurers (and reinsurers) as is the case with Pool Re, or by underlying insured parties (as is the case with classic insurance mutuals). Given the low current inherent value in the business (with current pricing), such a transfer could reasonably be made for very low consideration. In other words, such a transition could prospectively be effected by

²¹ le the mid-point of the official target range of 2% to 3%.

legislative change, transforming ARPC into a mutual owned by policy-holders (ie insurance companies or underlying insured parties).

Transition to a pure pool operator

We have also given consideration to other mechanisms that might be utilised to realise value for the Australian Government and/or to transfer operation of the scheme into the private sector. For example:

- If the Australian Government were to close the ARPC, the entire net assets including the Reserve for Claims could be realised and returned to the shareholder (ie the Australian Government). This would, however, leave the country without access to adequate terrorism reinsurance, unless private sector stakeholders were to create their own scheme (and for this to be effective the Australian Government would need to agree to provide that scheme with access to reinsurance along current lines);
- If stakeholders did create a reinsurance pool (along the lines of Pool Re), it would need to recommence retaining capital in order to reduce the cost of reinsurance. In the meantime, a significant increase in premiums would be required to maintain current levels of cover, even with the current Government reinsurance arrangements in place;
- An increase of this nature may attract an adverse response from insured parties, if they see the government as having withdrawn profits by closing the scheme and simultaneously forced an increase in prices.

An alternative approach would therefore be for ARPC to be sold on the basis that in future it would act as a pure administrator, with the Reserve for Claims retained as part of the underlying pool. If ARPC were sold on this basis, the Australian Government would not receive value for part or all of the Reserve for Claims but the current level of pricing could potentially be maintained.

If so, the amount of capital realised is likely to be closer to the remaining Claims Handling Reserve of some \$38m. We have included indicative figures which suggest that, to justify such a valuation, approximately \$16m to \$17m of annual revenues would need to be allocated to the administration company (with the balance allocated to the risk reinsurance pool). Net of operational costs and taxation, this would result in estimated profit for the administrator of \$3.7m to \$4.4m per year, thus generating a return on equity of some 9.7% to 11.7% for the administrator.

There would be no operational efficiencies from a change in role of this nature – ARPC would still retain responsibility for all administrative matters related to the underlying risk pool. It would simply cease to retain insurance risk on its own balance sheet (and hence could release associated reserves).

The ideal approach would be to estimate an economically reasonable level for a provision for claims, and/or to introduce a mechanism for rebuilding the Reserve for Claims following a sale whilst providing a level of protection in the event that there is a claim on the fund before the reserve can be fully replenished. In this scenario, it is important to note that the reserve could be released at any time, if the scheme were to be wound up and no claims were made during the scheme's final year. This highlights the importance of ensuring that the scheme must continue to be operated should there be a sale of the business with these reserves intact²².

²² Or that such reserves should be returned to the Government if the scheme was to be wound up.



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Other risk transfer considerations

The structures outlined above will not of themselves necessarily have any material bearing on the nature and extent of *insurance* risk retained by the Government. This is because the structures will almost certainly require ongoing Government support in order to be viable over the medium to long term. There are, however, ways in which the insurance risk can be more fully privatised. These are summarised briefly below:

- The simplest mechanism to transfer the entire cost of the ARPC to the private sector will be to convert the scheme to a true pool, under which the cost of claims made under the scheme is recovered from members over time. This would be achieved by converting the current Government risk retrocessions into a standby liquidity facility. Thus, when a claim was made, the Government would advance a loan to the ARPC, to allow the claim to be met. This would be repaid (with interest) over a predetermined time period out of insurance premiums received by ARPC. To be fully effective, such a scheme would likely need to be compulsory;
- The nature of the \$10bn limit on Government exposure could be amended, so that purchase of retrocessions from the private sector served to reduce the maximum claim that could be made. If, for example, the maximum claim to be paid by ARPC was set at \$10bn, then the current reinsurance arrangements and ARPC's own capital would mean that the maximum cost would reduce from \$10bn to some \$6.5bn. In practice, as the probability of a claim of more than \$6.5bn is already very low, the commercial impact of this change is likely to be negligible. However reducing the total guarantee increases the likelihood that a reduction percentage may be necessary;
- Increases could be made to the level of fee charged by the Australian Government, such that it matched the marginal rate on line charged by the private sector for higher tranches of the reinsurance programme; and
- Smaller changes could be implemented over time, for example by indexing industry retentions.

Other matters for consideration

Whatever structure is adopted, there are a number of issues which will need to be worked through carefully in advance of any privatisation, in order to ensure absolute clarity regarding the future operation of the scheme. These include:

- Giving the scheme a permanent existence;
- Matters related to the boundaries around the scheme (ie the exclusions that apply);
- The current pricing regime links premiums to the amounts paid for conventional buildings insurance, which may vary significantly over time. In practice, there may not be a strong correlation between the prices for this type of insurance and the cost of purchasing risk retrocessions for terrorism insurance coverage. Thus if such a regime were instigated, it may be appropriate to reset the pricing regime so that it links premiums to property values (which are likely to be less volatile);
- Making participation in the scheme compulsory, particularly after an event, to ensure that the scheme remains viable after a claim. This is an important consideration, as the level of profit achieved by the scheme (after the cost of purchasing risk retrocessions and administering the scheme) will be critical to the speed with which reserves can be built (or rebuilt following a claim);
- Provisions for any changes to pricing required following a major claim event;
- The operation of the guarantee, and basis for pricing risk retrocessions and/or the provision of a standby liquidity facility;

- An appropriate supervisory mechanisms (eg via the ACCC) for adjusting pricing over time:
- Regulatory capital matters;
- Minimum levels of insurance risk to be retained within the scheme (in order to ensure that the Government reinsurance can attach at a minimum claim size well above nil);
- The approach to be adopted to the distribution of any perceived "surplus provisions" that may arise in the scheme if there are no claims for a long period of time, and whether the Government participates in these²³; and
- Ongoing provisions related to the governance of the scheme, in order to ensure an appropriate balance of interest between relevant stakeholders, including both the various insurance companies that participate in the scheme as well as insured parties.

1.6 Overall observations on the findings from our review

Our review has shown clearly that partial market failure continues in relation to terrorism risk insurance, and we have concluded that this market failure is unlikely to be resolved in the foreseeable future. Meanwhile the large majority of stakeholders in the ARPC, including reinsurers, insurers and insured parties, are supportive of the existing structure of the terrorism reinsurance scheme, as well as the approach adopted to pricing. All stakeholders agree that a pool structure remains the best mechanism for providing terrorism insurance cover, irrespective of the mode of ownership adopted.

In relation to options for the future of ARPC, we have highlighted that there are many interrelated factors that require careful consideration, in order to ensure that the entity providing such cover remains sustainable over the medium to long term. Importantly, this includes considerations related to whether the ARPC acts as an insurer or simply a pool administrator, as well as associated regulatory capital considerations.

More broadly, in determining the future of the ARPC, we believe it is also important to consider the current financial resilience of ARPC in the face of a claim, and how this is likely to evolve in the future. In this context, we note that:

- In FY14 the ARPC's balance sheet included a Reserve for Claims totalling some \$535m, sufficient to meet 100% of the CY2014 \$360m of risk retained directly by the ARPC, and to meet about 56% of its exposure under the then co-reinsurance arrangements. The balance of co-reinsurance exposure is effectively met via the government guarantee;
- Payments to the Australian Government for the provision of \$10bn of retrocession cover under the government guarantee arrangements and the proposed dividend will amount to some \$112.5m a year, approximately \$40m a year higher than the current surplus generated by the ARPC²⁴. As a result, over the next four years, the Reserve for Claims will fall from \$535m to approximately \$375m, ie just sufficient to cover the \$360m of risk retained directly by ARPC;
- During this period, we note that the ARPC will rely increasingly on the Government guarantee for any claims that arise in excess of the initial \$360m of claims;

²⁴ This surplus is stated before any provisions for potential liabilities under the scheme – all remaining profits are transferred to the Reserve for Claims, which forms part of the net assets of the scheme. The \$112.5m incorporates a \$55m guarantee fee and a \$57.5m dividend.



²³ This would effectively represent a type of quota share of Government in the profitability of the insurance cover offered directly by the ARPC itself.

- Thereafter, if the \$55m guarantee fee and \$57.5m dividend are maintained and ARPC wishes to maintain the current private sector retrocession arrangements, premiums will need to be increased by around \$40m a year (or about one third) to cover the shortfall that would otherwise emerge in the fund. Alternatively, the ARPC would need to depend directly on the government guarantee in relation to the first \$360m of any claim, as this amount would no longer be covered by the Reserve for Claims;
- We emphasise that these estimates are based on the current cost of reinsurance. This has fallen significantly over recent years, and it remains possible that the cost of reinsurance increases again in the future as the insurance cycle changes. If this were to occur, it would place further upward pressure on the premiums that the ARPC would need to charge its members;
- In the event of a claim on the fund, there would be an immediate need to increase the level of premiums, in order to rebuild the Reserve for Claims. Alternatively, the ARPC would need to rely much more heavily on the reinsurance coverage provided under the government guarantee for smaller claim amounts. We anticipate that the government may wish to revisit the amount charged for such reinsurance as the trigger level at which it becomes exposed to a claim continues to reduce;
- This highlights the importance of establishing protocols for the management of the scheme in the wake of a major claim, including the approach to pricing as well as whether ongoing membership of the scheme becomes compulsory; and
- Irrespective of the future approach to ownership of the scheme that is implemented, we believe it will be important to give the scheme permanent existence.

This document is dividend into the following sections:

- Section 2 sets out the context to our report;
- Section 3 sets out the nature and extent of ongoing market failure;
- Section 4 sets out our review of the current pricing, structure and retrocession arrangements;
- Section 5 provides a summary of other terrorism reinsurance schemes around the world; and
- Section 6 addresses options for the future of ARPC, including alternative potential modes of ownership.

2. Context to our report

This section provides a brief overview of the context to our report, including the policy background to the formation of ARPC, the nature of risks accepted by the organisation, and the main areas of focus of our report.

2.1 Background to our report

The Australian Reinsurance Pool Corporation originally came into existence on 1st July, 2003, in response to the rapid withdrawal of cover for terrorism risks by major insurers and reinsurers in the wake of the 9/11 bombings. These attacks were, in financial impact terms, by far the most severe events of this nature that have occurred, resulting in more than 20 times as much damage as the London bombings in 1993.

Since the formation of the ARPC, and as outlined later in this report, the number of terrorist incidents globally has continued to increase. Nevertheless, at the time of writing there have been no events of the same severity of financial impact as the London bombings or the 9/11 attacks for over a decade²⁵. At the same time, the cost of purchasing terrorism insurance from global reinsurers has fallen significantly over the last few years, reflecting increased capacity in the sector and (we believe) the low level of claims over the last decade.

2.2 Policy objectives

The fundamental purpose of ARPC is to help to minimise the ongoing commercial and financial impact should a terrorist event in Australia lead to material financial losses. More broadly, the existence and operation of such a scheme should also support to business confidence in the aftermath of a major event.

Although the highest impact events are most likely to involve major city centres, the scheme is national in nature, thus providing important protection to suburban areas, infrastructure, regional centres, agricultural production and on and offshore resource production.

We regard these objectives as of high policy importance, as payouts from the scheme would help to accelerate a return to normal commercial operations for businesses and regions impacted by any such event. In this context, it is important to note that \$32.5 billion of the losses²⁶ associated with the 9/11 attacks on the World Trade Centre were covered by insurance (as terrorist risk had not been excluded). Even so, it took a significant period of time for the related insurance claims to be settled due to litigation concerning the extent of proportional liability and the number of terrorist incidents that occurred.

Although the nature of the event was very different, the rebuilding of Christchurch following the severe 2011 earthquake has similarly been materially assisted by the existence of New Zealand's Earthquake Commission, which provides national insurance coverage for earthquake risk in New Zealand²⁷.

²⁷ See Earthquake Commission, www.eqc.govt.nz/about-eqc



²⁵ University of Maryland, START Global Terrorism Database www.start.umd.edu

²⁶ H. Kunreuther and E Michel-Kerjan, *TRIA After 2014 – Examining risk sharing under current and alternative designs*, Wharton

2.3 Nature of risks accepted by the ARPC

During FY2014, the ARPC provided terrorism reinsurance cover up to an effective maximum of \$13.4bn in respect of the first claim that is made. As of June 2014, this reflected the combined value of:

- The ARPC's own reserve for claims of approximately \$535m;
- Retrocession cover purchased by ARPC, up to a maximum of \$2.9bn for any individual event; and
- Risk insurance provided by the Australian Government (the "government guarantee") up to a maximum of \$10bn in respect of any one terrorist event (or related series of events)²⁸.

The Australian Government's total risk in any one year is capped at \$10bn. There is no obligation to repay any funds provided to ARPC by the Commonwealth under the guarantee²⁹ (for further commentary, please see section 6.8 on page 80). Premiums may, however, be increased following an event in order to rebuild reserves more rapidly. The extent and duration of any premium increase is left to Ministerial discretion³⁰.

2.4 Key areas of focus

Pottinger's role is to provide Treasury with advice and input in relation to:

- Whether there continues to be **market failure** in the private sector supply of terrorism insurance, and consequently whether there is a need for the Act to continue in operation;
- Whether the pricing of the scheme (the premium rates and tier structure), the level and structure of insurer and industry retentions, and the purchase of retrocession cover (including its level and cost) continue to be appropriate, and do not distort demand for insurance; and
- Options on the future of the Act, including if there are possible alternative modes of ownership of the ARPC available to the Government and the costs and benefits of each alternative.

Meanwhile we note that Treasury is giving further consideration to the potential costs and benefits of:

- Extending the scheme to provide coverage for mixed commercial and residential use buildings, and high-rise residential buildings; and
- **Refining the scheme** to clarify coverage for biological and/or chemical attacks.

These issues have been raised in previous reviews and are likely to re-emerge during the market soundings process.

²⁸ ARPC Annual Report 2012/13

²⁹ Memorandum from the Australian Government Actuary to Treasury 13 October 2011 Re: Dividend payment from the terrorism pool.

³⁰ Discussions with ARPC.

2.5 Pottinger's approach to the assignment

We adopted a three phase approach to our review. In the first phase, we prepared an initial report to Treasury, based on desktop research and information provided by ARPC. The objectives of the first phase of work were to:

- To summarise relevant market developments in relation to terrorism insurance, in Australia and globally;
- To consider the current Australian market for terrorism insurance, including perspectives on the nature and extent of current market failure and consideration of likely future changes in this environment;
- To utilise current retrocession arrangements and the information that these provide to gain perspective on the depth and pricing of terrorism risk in Australia;
- To set out an update on terrorism reinsurance schemes in other countries around the world, with a particular focus on the schemes in USA, UK and Spain;
- To set out an initial view on options for the future of ARPC, including future modes of ownership, timing considerations and triggers for transition, as well as other relevant considerations; and
- To provide initial overall conclusions, including the nature of issues that we propose to explore in more detail through the market soundings exercise.

In the second phase, we undertook a market soundings exercise, to gain perspectives from a wide range of market participants on the ARPC scheme, including both major direct beneficiaries of the scheme, as well as other parties who are impacted indirectly. We approached a total of approximately 80 parties, and have had discussions or written feedback from 21 of these.

The third phase of our work focussed on interpreting the results of market soundings exercise and development of our final report to the Department.

2.6 Approach to market soundings

We invited five broad categories of organisation to participate in market soundings:

- Direct participants in the scheme: Australian insurers and major reinsurers;
- Direct beneficiaries of the scheme: Major property companies and other companies with large property portfolios as well as major infrastructure owners and construction companies;
- Indirect beneficiaries of the scheme: Major lenders to direct beneficiaries of the scheme;
- Relevant Government agencies: Treasury, Infrastructure, Finance, Attorney General, APRA, RBA the ACCC and State Governments; and
- Other parties who can potentially offer useful perspective: Other major governmentowned terrorism reinsurers around the world, insurance brokers and industry associations.

Participants in the market soundings exercise were offered the opportunity to provide input either by way of a verbal discussion or a formal, written submission. Most opted for the former.

Ottinger Return to index 23



Pottinger

The focus of our discussions with market participants related to the key areas of focus of our report and are summarised below. Further context is provided later in this document.

Figure 3: Questions addressed in market soundings

Key areas	Relevant questions
Nature and extent of current market failure	• Is the existence of the ARPC scheme of value to your organisation? Alternatively, do you believe you could obtain adequate terrorism insurance coverage if the scheme was not continued?
Pricing, structure and risk associated with the scheme	 Do you believe the current pricing of the scheme represents value for money for your organisation? Do you believe the current arrangements for recovery of losses in the event of a claim are appropriate?
	 Do you believe that the risk tiers currently in operation are appropriate, and that risks associated with each tier are fairly priced?
	• Do you believe that the current cap on cover is adequate, or too high or too low?
	• Do you believe that there are benefits in all terrorism risk being reinsured through a single, national risk pool?
	 Do you believe the ARPC's coverage should be extended to include other types of terrorism risk?
	• Are there other risks that you believe it would be appropriate to cover through arrangements analogous to the ARPC?
Views on alternative modes of ownership for the ARPC	• Should the ARPC continue to operate as a 100% Government owned entity? Alternatively, if you believe an alternative mode of ownership may be appropriate, what organisations should own that entity?
	 If ARPC was no longer owned by the Federal Government, would it be appropriate for the organisation still to have access to a Federal Government guarantee? If so, on what basis should the ARPC be charged for the availability of such a guarantee
Comparison with other markets	• Do you have a view on the relative attractiveness and efficiency of the Australian terrorism reinsurance arrangements compared to other countries around the world?

Given the potential significance to the Australian economy of any change to the structure, scope or operations of ARPC, we have sought to engage with a wide range of stakeholders. These are summarised briefly below.

Figure 4: List of stakeholders

Type of stakeholder	Organisations contacted
Key stakeholders	ARPC Board of ARPC
Federal Government	Regulators (APRA, ACCC, and RBA), Attorney General's Department, The Government Actuary, Department of Finance, and Department of Infrastructure
State Governments	All States and Territories
Leading global reinsurers	Munich Re, Swiss Re, Gen Re, Hannover Re, SCOR, Lloyd's of London
Major participants in the Australian insurance market	IAG, Suncorp, QBE, Allianz, Zurich AON, Chartis, CHU, Wesfarmers, Catlin
Insurance brokers and advisors	Willis Re and Marsh

Type of stakeholder	Organisations contacted
Banks lending more than \$5 billion in Australia	NAB, CBA, ANZ, Westpac, Rabobank, Mitsubishi-UFJ, Sumitomo, Suncorp, Bank of China, Macquarie Bank, BoQ, HSBC, Mizuho
Major property owners	Abacus, AMP, Australand, Charter Hall, Dexus, Goodman, GPT, Mirvac, Stockland, Westfield
Property intensive businesses	Amalgamated Holdings, Ramsay Health Care, Woolworths
Infrastructure investors	APA Group, DUET Group, Hastings, IFM, Macquarie Capital
Infrastructure and utility businesses	AGL -Alinta, Asciano, Origin, Telstra, Transurban, Woodside
Resources and construction	BHP, Rio Tinto, Lend Lease, Leighton
Associations and	Insurance Council of Australia
professional groups	Property Council of Australia
,	Shopping Centre Council of Australia
Alternative risk Pools	Pool Re

Source: Pottinger

Finally, we note that the 2009 and 2012 reviews both addressed the issue of whether mixed-use, high-rise buildings should be allowed to access the scheme in the future. Although this was not specifically part of the terms of reference of the 2012 review, the review recommended that this should be re-examined prior to the next review of the Act (ie the review that is about to commence). This reflected the reported views of many stakeholders that such buildings should be included, or at least that this should be considered. The subsequent report recommended that such buildings continue to be excluded from the scheme. Given significant ongoing development of large, mixed-use buildings in Australia's major city centres, it is likely that these issues will once again be raised during market soundings.

In this report:

- Section 3 addresses issues related to whether there continues to be market failure;
- **Section 4** considers matters related to the pricing and structure of the scheme, including the use of industry retentions and retrocessions;
- Section 5 provides further context, drawn from the analogous schemes in operation in other major economies around the world; and
- **Section 6** sets out our perspectives on options for the future of the Act, including alternative modes of ownership for ARPC.



3. Nature and extent of ongoing market failure

This section considers whether, and to what extent, there may be ongoing market failure in relation to the private sector supply of terrorism insurance in Australia, and consequently whether there is a need for the Terrorism Insurance Act to continue in operation. In addition, it provides a high level summary of factors relevant to consideration of the nature and extent of threat posed by terrorist organisations. The latter provides important context to any consideration of how current conditions are likely to develop over the near to medium term.

3.1 Introduction

Historically, Australia has had a very low incidence of terrorist activity, and the level of property damage arising has been minimal. Logically, as one of the safer major Western economies, it is reasonable to expect that Australia would be one of the first countries in which the market failure observed following the 9/11 bombings should come to an end. In practice, Pottinger believes that this would occur progressively, with greater and greater amounts of reinsurance cover becoming available for terrorism risk over time, assuming no major terrorist event is experienced.

Even so, the nature of terrorist activity may mean that the existence of a national scheme for pooling risks related to terrorism may remain a cost effective or necessary mechanism for ensuring that cover can be purchased on economic terms over the long term.

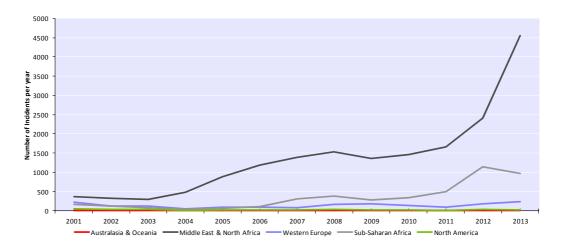
In addition, global insurance markets for different types of risk are highly cyclical. As a result, adequate cover may become accessible during periods when insurance market pricing is soft and risk appetites are high. Conversely, there can be no guarantee that insurance continues to be available, or is available on cost effective terms, during periods when the insurance market has lower risk appetites. The latter will be particularly true following a major claim on terrorism insurance cover, particularly if one or more individual insurers are subject to a disproportionately high level of claims.

We explore these issues further below. In particular, we consider whether, and to what extent, there may be ongoing market failure in relation to the private sector supply of terrorism insurance in Australia, and consequently whether there is a need for the Act to continue in operation.

3.2 The emerging environment for terrorism risk

The University of Maryland Study of Terrorism and Responses to Terrorism (START) Global Terrorism Database lists over 125,000 terrorist incidents since 1970. These incidents impact 127 of 158 countries analysed (ie no incidents were recorded in 21 countries. This data highlights both the breadth of terrorism threats as well as its rapid and recent growth illustrated overleaf.

Figure 5: Global terrorist attacks 2001 to 2012



Source: START Global Terrorism Database, 2013.

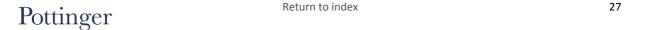
Since 2001, terrorist activity has significantly increased around the world, particularly in the Middle East. Over this period, Iraq and Afghanistan accounted for 35% of global terrorist incidents between 2002 and 2011, and Pakistan and India accounted for a further 21%.

Although the significant majority of events by number have occurred in the Middle East and Africa, the incidents which have produced the largest financial losses have been concentrated in major Western economies. As illustrated below, of the top 20 incidents, ten have occurred in the USA and UK, together accounting for 91% by value of property claims.

Figure 6: Top 20 property insurance damage claims

Date	Country	Event	Property claim
11/9/2001	United States	Airline crashes into Trade Center and Pentagon	US\$24,364m
24/4/1993	United Kingdom	Bomb explodes near Natwest tower	US\$1,176m
15/6/1996	United Kingdom	IRA car bomb explodes near shopping mall	US\$966m
10/4/1992	United Kingdom	Bomb explodes in financial district	US\$870m
26/2/1993	United States	Bomb explodes in garage of World Trade Center	US\$810m
24/7/2001	Sir Lanka	Rebels destroy aircraft	US\$517m
9/2/1996	United Kingdom	IRA bomb explodes in South Key Docklands	US\$336m
23/6/1985	North Atlantic	Bomb explodes on board Air India Plane	US\$209m
19/4/1995	United States	Truck bomb crashes into government building	US\$189m
12/9/1970	Jordan	Hijacked planes dynamited on ground	US\$165m
6/9/1970	Egypt	Hijacked plane dynamited on ground	US\$143m
11/4/1992	United Kingdom	Bomb explodes in Financial District	US\$125m
26/11/2008	India	Attack on two hotels	US\$109m
27/3/1993	Germany	Bomb attack in prison	US\$92m
30/12/2006	Spain	Bomb explodes in airport garage	US\$75m
21/12/1988	United kingdom	Bomb explodes on Boeing	US\$73m
25/7/1983	Sri Lanka	Riot	US\$61m
7/7/ 2005	United Kingdom	Four bombs in tube and bus	US\$61m
23/11/1996	Comoros	Hijacked Ethiopian Airlines Boeing left in sea	U\$\$59m
17/3/1992	Argentina	Bomb attack on Israel embassy	US\$49m
Total			US\$30,449m

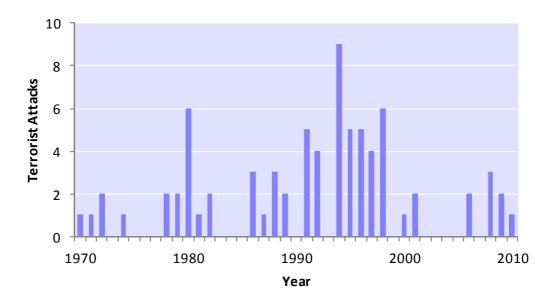
Source: Insurance Information Institute



A significant proportion of incidents in Western countries continue to be caused by domestic organisations. For example, 80 of the 200 terrorist attacks in the USA identified between 2001 and 2012 were perpetrated by domestic environmental and animal rights groups³¹. These types of attacks typically lead to relatively low levels of property damage.

According to the START database, there have been 76 terrorist attacks in Australia between 1970 and 2010 as shown below³².

Figure 7: Terrorist Attacks in Australia



Source: START Global Terrorism Database, 2013.

Over the last twenty years, however, there has been an increase in the proportion of domestic terrorist activity in major Western nations linked to overseas political and/or religious groups. In comparison, historically major events had typically reflected activity by domestic groups such as the IRA (in the United Kingdom) as well as analogous groups in France and Spain. The changing mix in terrorist activity is potentially a reflection of a number of factors summarised below:

Figure 8: Terrorism risk developments

Factor	
Global war on Terrorism	 2001, Afghan Civil War: NATO and allied forces joining the Afghan Civil War to dismantle al-Qaeda by removing the Taliban from power 2003, Second Gulf War: United States led coalition of Western counties invaded Iraq to depose the Ba'athist government 2014, Response against ISIL: Intervention against ISIS / ISIL inclusive of airstrikes and logistic support of local forces Counter terrorism activity: Additional law enforcement and intelligence gathering powers and counter terrorism funding significantly reduces the likelihood of terrorist incidences
Globalisation	 7 of the 20 most severe terrorist attacks (in terms of property damage) involved aircraft Increased ability to access global retail financing by terrorist groups as well as overseas followers Use of media to entice self-radicalised individuals to fight in overseas campaigns, export ideology and incite attacks

³¹ START Global Terrorism Database

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³² START uses a definition of terrorist incident broader than that contained in the Criminal Code.

Factor	
Increased technical	Use of the internet and social media has been key to terrorist groups' ability to export ideology and incite attacks
capabilities of terrorists	Increased destructive capability of bombs, technical proficiency in building and planting them accompanied by increased difficulty of detection

Source: Pottinger analysis, START Global Terrorism Database

The nature and timing of these events highlights the challenge of predicting the timing and severity of impact of any potential terrorist attack in Australia. In particular, although the sophistication of terrorist organisations continues to increase, and some have had access to substantial funding, the number of major attacks has been relatively small. Nevertheless the potential severity of major attacks means that any event would be likely to have a material impact in both commercial and psychological terms. This highlights the importance of ensuring that adequate insurance capacity is available, whether via a national scheme or from the open market.

Finally, we note that the modelling of anticipated losses from specific events continues to improve in sophistication and precision, including through the advent of 3D modelling of city centres and other relevant structures. Nevertheless, significant challenges remain with the estimation of the frequency of such events, as summarised briefly below.

Figure 9: Modelling difficulties for terrorism insurance

Issue	Explanation
History may be a poor predictor of future activity	As the underlying drivers of a terrorist attack (such as geopolitics, domestic responses to overseas terrorist groups, technology, counter terrorism funding and other factors) change, so too does the terrorism risk. This is hard to predict in a continuous manner.
Knock-on implications for the structure of insurance markets	Large variability and high outliers carry potential capital implications for insurers and reinsurers due to concentration of risk. This highlights the benefits of utilising some form of national pooling structure in relation to terrorism insurance, in order to provide a cost-effective mechanism for spreading risk amongst insurers
Barriers to the sharing of data on underlying risks	For several decades, governments have continued to increase investment in preventative measures, and there have been no major attacks by offshore parties in most Western nations for the past decade. Information related to such preventative measures, as well as on foiled terrorist attempts, is highly sensitive and hence comprehensive data is not freely available to all market participants (or even to all governments). This increases the challenge of arriving and reliable estimates of the probability of major events occurring.
Anthropogenic risk	Risk depends on policy choices made by Australian governments and our international partners. This is in terms of our response to overseas based terrorist organisations, the level of funding for domestic anti-terrorism activities and level of internal surveillance and restrictions adopted.

Source: American Academy of Actuaries/Pottinger Analysis

In September 2014, the terrorist threat level as assessed by the Australian Government was increased to "High" for the first time.

Overall we believe that these factors highlight clearly the ongoing importance of ensuring that adequate terrorist risk insurance is available in Australia.

3.3 Declared Terrorist incident

On the 15th January 2015, the Treasurer made a declaration of a terrorist incident relating to a siege at the Lindt Cafe in Martin Place, Sydney on the 15th December 2014. This has been the only declaration of a terrorist incident in the history of the Scheme.

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The aggregate claims received by insurers amounted to some \$650,000. This was shared among five insurers and was well below the insurers' individual event retentions. As a result, no claims on the ARPC were made.

The elapsed time between the event and the declaration by the Treasurer highlights one potential challenge that would arise in the event of a major attack. In such circumstances, it will be critical that business interruption claims are paid in a timely manner, particularly for smaller businesses with less ability to absorb the resulting losses. Accordingly, there may be merit in establishing a definitive timescale within which a declaration is made.

3.4 Implications drawn from current reinsurance arrangements

The ARPC has not had to pay any claims since its formation. Meanwhile, since 2009, it has purchased retrocessions from major global reinsurers in order to offset part of the risks that it carries. This program provides important information regarding the depth and pricing of terrorism risk cover in world markets.

The ARPC board determines the budget for the acquisition of retrocessions based on the need to build reserves, premium income and dividends to be paid to the Commonwealth. The ARPC then requests quotations for the provision of lines of retrocession in global reinsurance markets with various lead reinsurers. These organisations have offered around \$1.5 billion to \$1.75 billion of retrocession cover.

After receiving the quotations, the ARPC places orders for retrocessions with those lead reinsurers and other reinsurers. Together, these organisations have offered a combined total of around \$3 billion in retrocessions. The specific level of retrocession and excess purchased is dependent on the pricing offered, revenues of ARPC and budget for retrocessions determined by the ARPC board³³.

Since commencing this programme, terrorism risk reinsurance prices have fallen and maximum available coverage for the Australian market has increased. This reflects a combination of increasing capacity and an absence of major terrorism claims for reinsurers.

In the four full years that the retrocession program has been operating, the following costs of retrocession cover have been observed:

Figure 10: ARPC retrocession programme – key statistics – calendar year

	2010	2011	2012	2013	2014
Retrocession cover (B)	\$2,600m	\$2,750m	\$2,754m	\$2,969m	\$2,919m
Proportion of ARPC's maximum risk	26.0%	27.5%	27.5%	29.7%	29.2%
Retrocession premium (A)	\$72.5m	\$76.1m	\$73.9m	\$73.9m	\$74.1m
Rate on line (ie B/A)	2.79 %	2.77%	2.68%	2.49%	2.54%
Proportion of premium income	68.8%	70.1%	62.0%	58.1%	57.1%

Source: ARPC Annual Reports 2004 to 2014; ARPC retrocession purchasing levels

Rate on line is the net cost of the retrocession premium as a percentage of the retrocession amount. Percentage of GWP is the percentage of the ARPC's total gross written premium revenue that is paid out to purchase the retrocessions (net of retrocession commission income). Note that retrocession pricing varies due to layering and level of co-reinsurance.

These figures highlight that the capacity that is available has become progressively cheaper to access over recent years. This reflects a considerable improvement on the environment

³³ Discussion with the ARPC.

immediately following the 9/11 bombings, when very substantial claims were paid. However a portion of the decrease in the rate on line is due to increases in the retrocession's excess.

We understand from discussions with ARPC that these figures represent the maximum levels of cover that is available from the market at efficient prices for its own risk portfolio. Meanwhile other insurers, such as NSW SI Corp, also purchase terrorism risk insurance, implying a total market capacity of around \$5bn. In other words, further increases in reinsurance capacity are not readily available, even at materially higher premiums. This demonstrates that there is not currently adequate market capacity to provide insurance coverage comparable to that offered by the ARPC by a considerable margin.

Accordingly, there appears to be a prima facie case for the ARPC to continue in its current role. This does not necessarily preclude, however, alternative modes of ownership for the ARPC being contemplated.

Currently the ARPC is seeking retrocessions for 2015. Feedback from the retrocessionaires indicates rates on line are falling at lower levels of excess, but are increasing at higher levels of excess. Meanwhile there remains an inability to procure retrocessions substantially in excess of \$3 billion³⁴ on cost effective terms.

As noted above, the market does not offer capacity to reinsure all the cover currently delivered by ARPC, which totals some \$13.5bn through the operation of the \$10bn guarantee provided by the Federal Government. However the pricing of the top tranche of cover that is available reflects pricing for coverage that is largely or entirely driven by the cost of capital of the insurers concerned. In other words, at current pricing, the risk of a claim above the current cover level is assessed as negligible.

From this, it is possible to calculate implied pricing for retrocession cover of \$10bn (if market capacity existed to provide such cover). The initial circa \$3 billion of retrocessions costs around \$75 million³⁵. Further retrocessions are priced at around the cost of capital of the retrocessionaire which equates to a charge for incremental cover of around 2% of risk covered³⁶. So as a gross approximation (which takes accounts of the benefits of ARPC's existing reserves and the impact of the co-insurance program), \$10 billion of retrocession cover would cost a total of \$215m, or 2.25% of risks insured, comprising:

- Around \$75 million for the existing \$3bn of cover (2.5%); plus
- Around 2.0% of \$7 billion ie a further \$140m.

We note that these figures are indicative only and are designed to illustrate potential total cost of retrocessions in the absence of market capacity/risk concentration constraints, and are highly sensitive to movements in interest rates and other factors which may impact cost of capital for major reinsurers.

Currently, ARPC generates approximately \$130m of premium income. The above illustrative costs demonstrate that the premium income generated by ARPC is materially too low to cover a market view of the current cost of providing cover. In this context, we note that rates for terrorism reinsurance coverage have fallen significantly over recent years, ie costs may now be at a relatively low point in the pricing cycle. Thus if rates increased, and the

³⁶ Pottinger analysis of ARPC rates on line for the different layers of quoted insurance as well as the rates on line for the different layers of purchased retrocession cover.



 $^{^{\}rm 34}$ Pottinger discussions with ARPC and market soundings with insurers and reinsurers.

³⁵ The reported retrocession costs of around \$80 million are inclusive of a brokerage fee which is refunded to the ARPC. Hence net retrocessions are around \$75 million.

cost of government retrocession cover was set in line with the marginal rate on line current for private sector retrocession of risks, premiums would need approximately to double.

Given the increasing risk environment in which ARPC appears to be operating, it may be appropriate for the premiums which ARPC levies to be increased at least moderately over the near to medium term. This would allow more premiums to be recovered in the "good" times prior to a major risk event occurring. Alternatively, as detailed in section 6 below, we believe there would be merit in providing further transparency regarding whether and to what extent premiums would be increased in the wake of a large claim event.

3.5 Resilience of availability of insurance from the market

Each of the previous reviews has recommended that the ARPC should continue to operate to meet ongoing market failure in relation to the availability of terrorism insurance in Australia for commercial property. The most recent review identified that:

"...some commercial market capacity for terrorism insurance is re-emerging both internationally and domestically, although it remains insufficient to cover the available demand and is concentrated in supporting national pooled arrangements. Furthermore, there is insufficient capacity at reasonable prices for individual risks in Australia, with the quantum of commercial market capacity being significantly below the current \$13.4 billion scheme operated by the ARPC." 37

As described above, there has been an improvement in the **extent** of terrorism insurance capacity that is available in the Australian market, and there has also been a reduction in the **price** of accessing this capacity.

One critical question that remains is the *resilience* availability of this capacity, ie whether such capacity is likely to remain accessible by the private sector over the near to medium term as market conditions continue to evolve.

In due course, it is possible that the market will evolve further so that adequate capacity becomes available from the market to provide terrorism insurance on the same scale as offered by ARPC, and on financial terms which equate to a reasonable (but not excessive) return on capital for the insurers providing such capacity. In such circumstances, however, it will be important to give careful consideration as to whether such favourable conditions are likely to remain for at least the medium term. If such conditions are temporary in nature, caution should be exercised in any decision to terminate the role of the ARPC.

At its simplest, if ARPC was able to purchase retrocession cover from the market sufficient to cover the maximum payout guaranteed by the Government of \$10bn in respect of any one event, then this would imply that there was adequate cover available from private markets. It is important to note, however, that:

- Such cover would be available via the ARPC's pooled system, but might not necessarily be available to all underlying insured parties on the same terms from individual insurers, due to risk concentration considerations; and
- There is no guarantee that such insurance will continue to be available over the medium to long term, particularly in the aftermath of a major claim event or if other factors cause a material withdrawal of capacity from global terrorism risk insurance markets.

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³⁷ Federal Treasury, Review of the Australian Reinsurance Pool Corporation, 2012.

In circumstances where there was considerably more appetite for terrorism risk than required to deliver \$10bn of annual cover, the risks of subsequent market failure would arguably be materially reduced compared to circumstances where there was just sufficient supply of capital to meet such demand. This is not currently the case, as there is materially less risk capital available than would be required to reinsure \$10bn of Australian terrorism risk.

Accordingly, during market soundings we tested:

- The nature of current private sector appetite for terrorism risk, including limits for potential cover to individual market participants, and in respect of individual properties or groups of properties; and
- Whether market participants, including both insurers and underlying insured parties, believe that the pooling of risks through mechanisms such as the ARPC increases the effectiveness and cost efficiency of operation of the market for terrorism insurance.

The feedback provided by stakeholders confirmed that current levels of reinsurance available to address terrorism risk were not expected to change dramatically in the near to medium term. In addition, several reinsurers independently raised the issue of the lack of certainty regarding the availability and extent of terrorism reinsurance in the near to medium term.

In relation to pooling, nearly all respondents confirmed a view that a national risk pool represented the most logical and cost-effective way to obtain reinsurance for risks of this nature. No respondents put forward a view that a direct insurance model (as opposed to a pool) would be more effective.

3.6 The role of the ARPC

The evolution of ARPC's approach has meant that ARPC acts as a conduit which pools terrorism risks and provides access to that risk to the private market. These developments have reflected emerging market circumstances over time, as well as the increasing maturity of the ARPC as it has built both experience and its capital base.

Consequently, as we explore alternative modes of ownership of the ARPC later in this document, and the associated costs and benefits, we have given consideration to the implications for the nature and structure of markets for terrorism insurance in Australia. For example:

- Privatisation of ARPC as a monopoly terrorism insurance provider would create an entity with substantial economic significance. This would help to ensure both the economic viability of the ARPC under private ownership, as well as the price which could be achieved on a sale, but would require careful regulation to ensure that it was not unduly profitable. In addition, there will be complex regulatory capital issues to be addressed, both in relation to the entity itself (assuming it becomes a regulated entity) or in relation to third party insurers who reinsure risk through the ARPC;
- Privatisation of the entity, accompanied by immediate or staged opening of markets to full competition, will increase competition from the perspective of major insurers, but may add complexity and additional net cost when judged from the perspective of the underlying insured companies and entities;
- Privatisation through an alternative mode of ownership, such as an industry-owned mutual structure, may be attractive from the perspective of the insurance industry as a whole, but care will be required regarding the nature of regulatory regime within which such an entity operates (assuming it has a monopoly position at the outset). In

Pottinger Return to index

addition, as a privately-owned entity, the organisation will require to hold potentially large amounts of regulatory capital. Alternatively, if it were exempt from such capital requirements, counterparties may have to hold additional capital to address underlying risks;

- Similarly, should the review identify that there is now adequate capacity accessible in the market such that the ARPC is no longer required, winding up of the ARPC would allow capital to be released and returned to consolidated funds, but may also result in a less efficient industry overall, judged from the perspective of insured entities; and
- If the entity continues in its current form, it will be subject to ongoing market developments, and it will be important to ensure that the scope of its activities and approach to pricing continues to be appropriate in the circumstances. Thus care will be required with the regulatory regime within which ARPC operates on an ongoing basis.

In most scenarios, some form of transitional arrangements will likely be required in order to ensure a smooth transition. In addition, it is unlikely that market availability of terrorism insurance will change so dramatically that there is a change from current levels (where modest amounts of cover are available) to one where substantially more reinsurance is available in the near term.

3.7 Potential for transitional arrangements

In this context, it may be appropriate to consider establishing a pathway whereby the extent of Government support for the ARPC is reduced in a staged manner over time. The extent to which this is viable will depend on a number of factors, including whether the current level of cover is believed to be adequate. Conceptually, a number of mechanisms could be utilised, including:

- A progressive reduction in the level of Government guarantee, offset by the purchase of increased levels of retrocessions and increased claims reserve;
- A progressive transfer of ARPC into an alternative mode of ownership, accompanied by reducing levels of Government guarantee; and
- Increasing pricing for reinsurance cover provided by ARPC, in order to increase the likelihood over time that insurers (or underlying insured companies) will seek to selfinsure, and/or to reduce the Government's effective exposure under the guarantee arrangements.

During the market soundings exercise, we have explored whether such arrangements would be perceived as attractive and viable by relevant market participants.

Overall, virtually all respondents set out a clear preference for maintenance of the current arrangements. A number have highlighted the potential challenges of seeking to encourage or legislate that industry participants should take responsibility for such a pool, implying that a structure analogous to Pool Re (UK) would be challenging to implement. Some acknowledged Pool Re as providing a logical alternative model should one be required to be adopted, while others currently regard themselves as the beneficial owners of the ARPC.

3.8 Experience in other markets

Current market conditions in other countries around the world demonstrate that there is increasing market capacity for the private sector to accept terrorism risk. In broad terms, we believe that this reflects:

- A low incidence of claims across all major catastrophe classes, leading to increasing retained capital within the global reinsurance sector³⁸;
- Increased competition between reinsurers; and
- Better risk models and pricing of terrorism risk³⁹.

Currently private sector global capacity for reinsurance is estimated at around US\$700 billion in total. This capacity is not, however, evenly distributed around the globe. Nor is it all available for terrorism reinsurance. Guy Carpenter estimated that in 2014, the total private sector capacity for terrorism reinsurance across seven national pools (Australia, Austria, Belgium, Denmark, two French pools and Netherlands) was \$9 billion⁴⁰. Meanwhile, the UK scheme currently has capacity of approximately \$8bn (£5.4bn). This level appears to be adequate to cover most levels of non-catastrophic terrorism risks, but is still lower than the level of the Commonwealth Guarantee.

The US terrorism insurance scheme expired on the 31st December 2014. However its six year extension was approved by Congress in early January and was subsequently enacted by President Obama on the 12th January 2015⁴¹. Changes in the 2015 Act include:

Figure 11: Changes to the US terrorism risk scheme

Nature of change	Change
Extension period	6 years
Industry mandatory recoupment	The minimum level of claims that the government will recoup from the scheme post event increases from \$27.5bn to \$37.5bn per incident over time to 2020
Recoupment amount	The amount of claims that the US Government will recover post event increases from 133% of claims paid to 140% of claims paid (up to the recoupment threshold).
Trigger levels	The scheme does not apply to events producing losses less than \$100m. This increases progressively to \$200m by 2020
Co-reinsurance	Insurer's co-insurance increased from 15% to 20%

Source: Marsh: "A comparison of the Federal Terrorism Insurance Backstop Legislation"

In contrast, in Australia around US\$5 billion of capacity is available, as accessed via the ARPC's retrocession program and other similar programmes (eg operated by State and Federal Government self-insurers). This cover is larger than any terrorist event in Australian history by a considerable margin. Nevertheless it is insufficient to cover a number of realistically possible major event scenarios contemplated in ARPC's risk analysis, including explosions which damage multiple major buildings in one of Australia's CBDs.

Globally there is minimal capacity to cover large scale, low-probability attacks such as those which involve a nuclear incident. For example, a nuclear bomb detonation in a large urban district in the USA is estimated to result in damage in the order of US\$900 billion⁴².

⁴² RAND Corporation – "National Security Perspectives on Terrorism Risk Insurance in the United States"



³⁸ Guy Carpenter, Media Release, *Guy Carpenter report reinforces need for TRIPRA Renewal*, 18th June 2014 - http://www.guycarp.com/content/dam/guycarp/en/documents/PressRelease/2014/

³⁹ Marsh & McLennan Companies, 2014 Terrorism Risk Insurance Report, April 2014

⁴⁰ Guy Carpenter, ARPC Terrorism Market Report, 2014 August 2014

⁴¹ https://www.govtrack.us/congress/bills/114/hr26

Meanwhile estimates suggests that such an attack in Australia could produce a maximum loss of around \$600 billion⁴³.

In Australia, the Terrorism Insurance Act contains a 'nuclear carve-out' excluding losses from arising from incidents involving nuclear and radiological attacks. Pottinger notes that according to RAND Corporation's analysis of forecast damage arising from US terrorist attacks the expected losses arising from an attack using one type of biochemical agent on a CBD location is comparable to that of the detonation of a nuclear bomb and several times that of the detonation of a 'dirty bomb' However ARPC Plume modelling indicates that the maximum loss from a biochemical attack in Australia could be around \$30 billion 45.

3.9 Conclusions on the nature and extent of market failure

From our analysis and the market soundings exercise, it is clear that there is ongoing market failure in relation to the availability of terrorism insurance in Australia. Specifically, terrorism reinsurance for the ARPC is only available up to a maximum of around \$3bn, substantially lower than the maximum probable event as estimated by the ARPC. In addition, as explored later in this document, even if cover were available, the cost would be materially higher than the current premiums collected by ARPC.

Meanwhile, we believe it is likely that such market failure will continue for at least the near to medium term. In particular, although insurance prices have fallen over recent years, reflecting a variety of new capital that has entered the sector, there is still a material shortfall in capacity for terrorism risk cover. In addition, none of the front line insurers have indicated interest in taking on this type of risk.

Virtually all participants who responded to the market engagement process have indicated a strong preference for the continuation of a risk pool, irrespective of which entity acts as administrator of that pool. We explore alternative structures in section 6 below.

Given the above conclusions, we also believe it would be appropriate to amend the existing legislation to recognise the ongoing necessity to maintain the existence of the ARPC over the longer term, and hence to give the body a permanent existence. As with other government entities, reviews on the nature and scope of its operations could be carried out from time to time. There would be a number of benefits of giving the ARPC a permanent existence, including both market certainty regarding the ongoing availability of terrorism insurance, as well as the ability of the entity to further improve cost efficiency by entering into longer term contracts where appropriate.

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⁴³ "Terrorism Risk Insurance in Australia" August 2014, slide 41

⁴⁴ RAND Corporation "Terrorism Risk Insurance", 2014, and discussions with ARPC

⁴⁵ ARPC "Terrorism Risk Insurance in Australia" August 2014, slide 41

4. Review of pricing, structure and retrocessions

This section considers whether the pricing of the scheme (the premium rates and tier structure), the level and structure of insurer and industry retentions, and the purchase of retrocession cover (including its level and cost) continue to be appropriate, and do not distort demand for insurance.

4.1 Introduction and scope of ARPC's activities

The Australian Reinsurance Pool Corporation (ARPC) was established as a Commonwealth Government statutory authority under the *Terrorism Insurance Act* 2003 (Cth). The Explanatory Memorandum to the Terrorism Insurance Bill outlines the rationale for establishing the ARPC:

"Following the events in the United States of September 2001, cover for terrorism risk was progressively withdrawn by insurance and reinsurance companies. Significant commercial and financial difficulties have resulted from the withdrawal of such coverage. With a large pool of assets uninsured for terrorism risk, financiers and investors face uncertainty that could result in adverse economic circumstances, delaying commencement of investment projects and altering portfolio management decisions."

The ARPC scheme is designed to ensure that relevant organisations have access to terrorism insurance, and to avoid uncertainty as to which organisations may be insured should such an event ever occur. The legislation prohibits insurers from excluding terrorist acts from relevant insurance contracts, whilst providing a mechanism for these risks to be reinsured.

Figure 12: Definition of eligible insurance contracts

Element	Criteria	Source
Items insured	 Loss of or damage to eligible property owned by the insured Business interruption and consequential loss arising from loss or damage or inability to use eligible property Liability of the insured arising out of the insured being the owner or occupier of eligible property 	S7(1) Terrorism Insurance Act
Statutory Exclusions	 Reinsurance contracts State government related insurance 	s7(2) and (3) Terrorism Insurance Act
Summary of Regulatory exclusions	 Workers compensation, life, health and income protection insurance Marine, aviation and motor vehicle insurance Loss of fares, injury or loss suffered by passengers or goods in transit Commonwealth or State Government insurance Insurance offered by the Export Finance Insurance Corporation or trade credit or trade indemnity insurance Private mortgage insurance (buildings principally used as places of residence) Non-mining or construction; prime movers, rolling stock or trailers Mortgage insurance that is not included with other property eligible insurance Losses relating to repair or breakdown of plant or machinery outside other eligible insurance Crop or livestock insurance outside insurance for business interruption Medical and professional indemnity insurance Insurance related to employment practices, directors' and trustee's duties Insurance only for fraud or dishonesty 	Terrorism Insurance Act Regulations



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Element	Criteria	Source			
	Insurance of loss arising from computer crimes				
	Insurance of the value of financial products				
	Insurance contracts that only insure terrorism risks				
	Insurance contracts that do not contain terrorism exclusion clauses				
	Home owners' warranty or builders' warranty insurance				
Eligible	Only covers property located in Australia	s3 Terrorism			
property	Buildings (including fixtures) or other structures or works on, in or under land	Insurance Act			
	Tangible property that is located in, or on the above property				
	Any other property prescribed by regulations				

Source: Terrorism Insurance Act

4.2 The pricing of the scheme

ARPC charges insurers a fixed percentage of premiums payable under eligible insurance contracts, with this percentage depending on the location of the property insured. The specific percentage depends on which of three tiers of risk the policy holder is exposed to, labelled A, B and C and shown in the table below.

Figure 13: Insurance premiums

Tier	Description	% of premiums
Α	CBDs of cities with populations over 1 million, being the primary business districts of Sydney, Melbourne, Brisbane, Perth and Adelaide	12%
В	Urban areas of all State capitals, as well as cities with populations over 100,000 (eg Newcastle, the Central Coast, Wollongong, Geelong, Sunshine Coast and Townsville)	4%
С	All other areas of Australia, inclusive of coastal waters and property not on the mainland of Australia	2%

Source: ARPC Annual Report 2004 to 2014

In determining which tier a property belongs to, the ARPC maintains a list of postcodes and their associated tiers. For instance, the Sydney CBD is defined by the ARPC to include the postcodes 2000 (Sydney), 2060 (North Sydney) and 2009 (Pyrmont).

As the underlying insurance contract gets more expensive, the premiums collected by ARPC automatically increase. This allows the market to value the building, determine its level of coverage and select an appropriate excess. However this tiered structure creates three issues:

- Some buildings in Tier A may represent specific terrorist targets and as a result have substantially higher terrorist risks than other Tier A buildings;
- Some buildings in lower tiers may present risks that are higher than buildings within higher tiers. For instance a Tier B urban entertainment precinct may hold a comparable or higher level of terrorist risk as a Tier A office location;
- The probability of a terrorist act affecting a property is likely not correlated with the probability that the building will be damaged due to some other cause (such as fire); and
- Major regional infrastructure such as ports and power generators are relatively higher risks than other buildings, notwithstanding that many operate in the lowest risk tier locations.

The table below shows the percentage of the ARPC's total gross written premiums by type of cover provided.

Figure 14: Insurance premiums by risk type covered

Туре	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Fire	81%	81%	81%	77%	77%	78%	81%	80%	80%	83%	82%
Contract works	8%	8%	8%	10%	10%	10%	7%	9%	9%	7%	7%
Burglary	5%	5%	5%	6%	6%	5%	5%	5%	5%	4%	5%
Accident	3%	3%	3%	3%	3%	3%	3%	2%	2%	2%	3%
Mobile plant	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
Glass	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%
Farm	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GWP \$m	56	102	103	95	101	106	105	113	125	132	130

Source: ARPC Annual Report 2014, 2013 and 2008. Note: Farm coverage has been around 2bps to 5bps. GWP means Gross Written Premiums

Fire insurance (inclusive of Industrial Special Risk and Business Interruption insurance) comprises the vast majority of premiums provided by the ARPC for terrorism risk insurance.

The key policy rationale for the ARPC's pricing structure is to avoid adverse selection, escape the need for the Commonwealth or ARPC to price specific risks and to provide revenue growth in line with insured value. Adverse selection poses a critical threat to terrorism risk insurance pools around the world, as it has the effect of concentrating risk and reducing the premia available to pay a claim should one ever arise.

The percentages represent the proportion of premiums collected by the insurer on an eligible insurance contract. We understand that these percentages were originally selected in order to create revenues of \$100 million per annum, in order to produce a pool of \$350 million of claim reserves in the space of 3½ years. The premiums are subject to Ministerial direction and have not changed since its inception.

Most participants in the market soundings exercise indicated that they were happy with the existing pool arrangements, and with the levels of premiums currently being charged. In this context, we note that whilst the add-on to premiums varies substantively by tier, the variation when measured as a proportion of the value of property insured is significantly lower, as illustrated in the table below.

Figure 15: Cost of terrorism insurance by risk tier

Tier	ARPC premiums	% of fire insurance	Value insured	% of value insured
Α	\$24.3m	12.0%	\$342bn	0.0071%
В	\$71.2m	4.0%	\$1,779bn	0.0040%
С	\$34.7m	2.0%	\$1,735bn	0.0020%
Total	\$130.2m	3.5%	\$3,009bn	0.0043%

4.3 Mechanism for establishing claims under the scheme

The Terrorism Insurance Act requires the Minister (acting with the advice of the Attorney General) to declare that a "Declared Terrorism Incident" has occurred before the ARPC is liable to pay a claim. This declaration must be made if the Minister believes that a Terrorist Act has occurred.



The Counter-Terrorism Legislation Amendment (Foreign Fighters) Act 2014 amended the definition of Terrorist Act in the Terrorism Insurance Act. Now "Terrorist Act" is defined in s100.1 of the Criminal Code where it is defined as an action or threat of action where the following elements apply:

Figure 16: Definition a of terrorist act (s100.1 Criminal Code)

Element	Criteria	Source
The intent of the attack	 Advancing a political, ideological, or religious cause; and Has the intent of Coercing or intimidating the Australian Government, a State Government or part of a State or a foreign Government; or 	s100.1 Criminal Code
Nature of attack	 Intimidating the public or section of the public causes serious harm that is physical harm to a person; causes serious damage to property; causes a person's death; endangers a person's life, other than the life of the person taking the action; creates a serious risk to the health or safety of the public or a section of the public; or seriously interferes with, seriously disrupts, or destroys, an electronic system including, but not limited to: an information system; a telecommunications system; a financial system; a system used for the delivery of essential government services; a system used for, or by, an essential public utility; or 	s100.1(2) Criminal Code
Excluded actions	 a system used for, or by, a transport system Advocacy, protest, dissent or industrial action; and Actions not intended: to cause serious harm that is physical harm to a person; to cause a person's death; to endanger the life of a person, other than the person taking the action; or to create a serious risk to the health or safety of the public or a section of the public. 	s100.1(3) Criminal Code
Threats that are covered	A threat of a terrorist act is also covered, provided the act was threatened to be carried out in Australia and the threat created an economic loss	s6(3) Terrorism Insurance Act
Carve-outs	 Losses arising from hazardous properties (including radioactive, toxic or explosive properties) of nuclear fuel, nuclear material or nuclear waste are not covered; and Acts of war 	s3 and s6(2) Terrorism Insurance Act

Source: Terrorism Insurance Act, Criminal Code

Additionally, according to the ARPC, the Act and Regulations might not prevent insurers from excluding some *types* of terrorist acts. For instance if a policy generally insures against losses from fire and explosion but excludes losses from damage arising from glass breakage or pollution (terrorist act, accident or otherwise) then notwithstanding that a Declared Terrorist Incident may affect the policy holder's property, and notwithstanding the policy holder's insurance company may hold reinsurance with the ARPC and the ARPC may be required to pay a claim for other affected policies; there is doubt as to whether the ARPC or the insurance company would be liable to pay a claim.

A number of implications arise from the mechanics of the terrorism insurance scheme and the interoperation of the definitions of 'terrorist act' and 'eligible insurance contract'. These include:

- Terrorist acts intended to cause death may not be covered if they do not also result in property damage;
- The ARPC scheme does not clearly guarantee that policy holders will be insured against all types of terrorist acts given the ability for insurance companies to exclude specific types of losses (eg chemical or biological);
- Losses arising from a riot (or some other attack) may or may not be covered depending on why the Attorney General believes the rioters rioted or attackers attacked;
- Business interruption losses caused by necessary and efficient actions of emergency services teams might not be covered depending on whether the property is also affected by physical damage and the underlying insurance policy's provisions relating to business interruption losses;
- The expected losses due to some types of biological attacks are similar to those for nuclear attacks, yet nuclear attacks are excluded by the legislation;
- High value property that is not primarily residential may be covered while high value residential property may be covered during its construction;
- If a single terrorist bomb destroyed an insurance company's office and a mixed use residential tower, the insurance company could make a claim for its own losses while possibly denying the claim made by the owner of the mixed use residential tower;
- Physical attacks on lead-in conduits or submarine cables may produce relatively minor amounts of physical damage but substantial business interruption losses while cyberattacks on network nodes producing similar consequential losses may not be covered;
- The regulations allow for the widening of the types of coverage and the nature of eligible property to be covered under the Act; and
- State government owned property which is used or leased by the private sector (such as a 99 year lease on a sea-port or the concession to operate a motorway) might not be able to be covered depending on whether the private operator or lessor has its own insurance.

In addition Pottinger notes that under s10 and s11 of the Terrorism Insurance Act, the ARPC is not restricted to provide insurance for terrorism risk only and may offer any kind of insurance product that the regulations allow.

4.4 Payment of claims made on the ARPC

In the event of a claim, customers bear an initial amount of the loss incurred, reflecting the excess agreed under the policy that they have with the insurer in question. Individual insurers are responsible for retentions of 4% of total premiums collected subject to a minimum of \$100k and a maximum of \$10m per event, subject also to a total maximum retention for the industry as a whole of \$100m.

Once a claim has been made on the fund, which requires the Government Guarantee to be partially or completely drawn down, premiums may be increased in order to wholly or partially rebuild the ARPC's claims reserve. This depends on Government policy and there is uncertainty as to what the Government will choose to do should an event occur.

Since its formation, ARPC has not paid any claims and accordingly has begun to build up a level of retained capital/reserves, principally within the "Reserve for Claims". These reserves will be available in the event of any claim to meet part of the payment that arise. As of FY14,

Pottinger

the ARPC had \$535 million in such reserves ⁴⁶. These reserves are held to cover the \$360m of direct risk exposure that the ARPC holds, as well as ARPC's participation in the reinsurance programme for claims of above \$360m. Under the latter, the ARPC has retained a total of \$314.5m of risk, ie approximately 10% of the total reinsurance coverage of \$3,240m. This the \$535m of reserves is sufficient to cover the \$360m of direct exposure in full, and some 56% of the exposure under participation in the reinsurance programme (see following paragraph).

To reduce the need to draw on the Commonwealth Government guarantee, the ARPC has entered into retrocession program, through which it reinsures some of the risks to which it is exposed, in return for payments to reinsurers in the year in question. As of FY14, the ARPC had cover totalling \$2,918 million under its retrocession programme. The Reserve for Claims is also available to cover part of the risk that ARPC holds through participation in the reinsurance arrangements, which totals a maximum of \$314.5m.

Together with the \$10 billion Commonwealth guarantee, ARPC thus has a total capacity to pay claims of \$13,453 million in respect of a single event. If a terrorist act creates insurable losses in excess of this amount, then ARPC's liability is limited to this amount and only partial payments will be made to insured parties. The residual losses will be borne by underlying policy holders (and the banking sector should policy holders become insolvent as a result of a terrorist attack).

We understand from discussions with the ARPC is that the maximum claim on the Australian Government is \$10bn in any single year⁴⁷. We note that there is currently no provision for automatic reinstatement of this cover (even on payment of an additional premium) in the event of a claim. In return for this reinsurance coverage, the Australian Government is currently paid a fee of \$55m, equivalent to a rate on line of 0.55% per year. This is materially lower than the marginal rate on line for cover from the private sector which is around 1.8% to 2.0%. We note, however, that the principal determinant of the prices set by the private sector relates to the cost of capital of the reinsurers concerned, and that the Australian Government arguably has a materially lower cost of capital⁴⁸. Hence it is not unreasonable that the charges levied by the Government are lower than those set by the private sector.

Where one or more events would result in a claim against the government guarantee of more than \$10bn, the claims will be scaled back. Where two or more such events occur separately, our presumption is that claims under the scheme will be paid in full for the first event (to the extent that this is possible). Payouts on subsequent events will be scaled back as necessary to remain within the \$10bn cap. Our view is, however, that these arrangements are not absolutely clear in the description set out in the relevant Act.

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 $^{^{\}rm 46}$ This is in addition to a \$38m claims handling reserve.

⁴⁷ We note that this is ambiguous as s6 of the Terrorism Insurance Act requires an incident to be declared if an incident occurs, and there is no explicit limit on the number of incidents may be declared over any time period. ⁴⁸ In addition, unlike a conventional insurance company, the Australian Government is also not subject to any regulatory capital adequacy regime.

4.5 Changes to the structure of the scheme

Various changes have been made to the structure of the scheme, as illustrated below.

Figure 17: Summary of the changes to the ARPC funding pool over time

Size \$m	Description
2004	\$10 billion Commonwealth indemnity established
	Retention set at 4% of claims subject to minimum and maximum
	No minimum retention
	 Maximum retention of \$1m per insurer subject to a total of \$10m spread across all insurers per incident
	• \$1 billion line of credit established, backed by the Commonwealth indemnity ⁴⁹
2007	Maximum retention per incident increased to \$25 million from \$10 million per incident
	A minimum retention of \$100,000 per insurer is introduced
2008	Maximum retention per incident increased to \$50 million from \$25 million
2009	Retrocessions of \$2.3 billion added being payable after the first \$300 million in claims and before any Commonwealth indemnity payments
	Maximum retention per insurer increased from \$1 million to \$5 million
2010	Retrocessions increased from \$2.3 billion to \$2.6 billion
	\$1 billion line of credit cancelled
	Maximum retention per incident increased from \$50 million to \$100 million
	Maximum retention per insurer increased from \$5 million to \$10 million
2011	Retrocessions increased from \$2.6 billion to \$2.75 billion
	Retrocession deductible increased from \$300 million to \$350 million
2012	Retrocession deductible increased from \$350 million to \$375 million
	Retrocessions now paid dollar for dollar with the government guarantee and any excess reserves of the ARPC
	Dividends of \$389 million paid from reserves
2013	Retrocessions increased from \$2.75 billion to \$2.97 billion
2014	Four dividends of \$57.5m introduced
	Annual guarantee fee of \$55m introduced

Source: ARPC Annual Reports 2004 to 2014

4.6 Current market pricing the renewal process

Before committing to purchase retrocessions, the ARPC asks for quotes from a number of leading re-insurers around the world. In 2012 and 2014 the market capacity for retrocessions was around \$1.6 billion among large reinsurers. Pottinger notes that the retrocession offered by the leading participants in the market amount to less than 20% of the \$10 billion Commonwealth Guarantee and that retrocession providers have declined to offer quotes for higher levels of retrocession cover.

The inability of the ARPC to purchase retrocession sufficient to replace the Commonwealth Guarantee is potential evidence of market failure. This claim is partially supported by the addition of the remainder of the insurance and investment market which made around \$3 billion in retrocessions available to the ARPC in 2013.

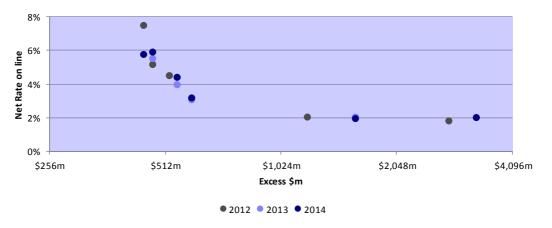
⁴⁹ This allowed the first \$1bn of any claim on ARPC that exceeded its reserves to be financed directly by the private sector rather than being drawn directly from Government.



Cost of Retrocession

Overall, the ARPC has noticed falling retrocession pricing at lower levels of excess (higher likelihood of a claim). However at higher levels of excess and cover the cost of the retrocession has slightly increased. This is likely because, according to the ARPC, the Rate on Line (pricing) for high amounts of retrocession is likely driven by the retrocession provider's cost of capital rather than the likelihood of a claim. The chart below shows the best quotes for retrocessions at different levels of premium excess for years 2012 to 2014.

Figure 18: Retrocession insurance quotes

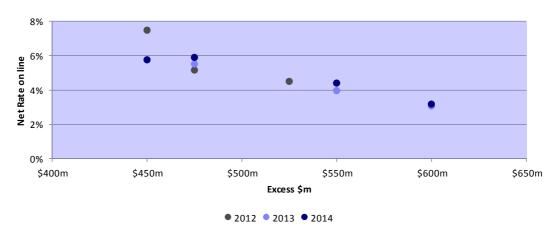


Source: Pottinger analysis, ARPC quotations for retrocessions

The right tail of this graph shows that increasing the excess has no impact on the cost of the retrocession as measured by the implied rate on line. This may indicate that the probability of a maximum loss is similar to the probability of a loss exceeding \$500 million and/or that the probability of a claim exceeding \$500 million is so low that the premium is priced based on the required return on capital needed by the retrocession provider.

The chart below replicates mid range of the graph in more detail.

Figure 19: Retrocession insurance quotes – detail on mid-range figures



Source: ARPC quotations for retrocessions. Pottinger analysis

4.7 Overall conclusions on pricing

44

The current pricing arrangements generate sufficient income to meet the cost of the private sector retrocession programme and the ARPC's operating costs, but not to cover a market price fee for the provision of the government guarantee. On the assumption that the

charges currently levied for the government guarantee are reasonable, then the implication is that the pricing of the scheme is not currently sustainable and that there is a currently shortfall of at least \$40m per year. In other words, for pricing to be sustainable and the current pool structure to be maintained, prices would need to be increased by over one third.

As the capital of ARPC is depleted by these withdrawals, the interest income in the scheme will fall, further increasing the shortfall. In addition, the capacity of the scheme will effectively reduce, as the \$10bn government reinsurance will be used to meet an increasing element of the participation in third party risk reinsurance.

In theory, the charges made by the Australian Government should increase as it steadily becomes more likely that any claim made on the Australian scheme requires a claim to be made on the government insurance. For example, consider a situation where all of the capital of the ARPC had been exhausted. In these circumstances, the Government guarantee would be called in the event of any claim. We provide an indicative estimate of the cost of maintaining the current level of cover below:

- A simple estimate based on the costs of the lower levels of retrocession purchased over the last two years implies that the total cost of reinsurance of the first \$360m of any claim would be at least 8.4% or approximately \$30m per year. The same calculation for the prior two years implies a total cost of around 19% to 20%, or around \$70m per year;
- The current market price for risk reinsurance between \$360m and \$3.6bn is approximately \$80m;
- There will be a further cost to cover the remaining \$6.4bn of reinsurance provided by the government. Currently the government charges \$55m for this cover. Based on the current marginal rate on line of 2%, we estimate that the government might charge up to around \$130m for this cover;
- Thus the overall cost of the government guarantee would be between \$165m and \$280m. In addition, ARPC would need to cover the cost of operations as well. This would require a substantial increase in premiums.

If stakeholders did create a reinsurance pool (along the lines of Pool Re), it would need to recommence retaining capital in order to reduce the cost of reinsurance and, in the meantime, a significant increase in premiums would be required to maintain current levels of cover, even with the current Government reinsurance arrangements in place. By way of illustration, if the ARPC increased its premium income to \$300 million by raising its prices, these premiums would amount to 0.01% of the value of property insured under the scheme in the year to 30th June 2013 (approximately \$3 trillion). As we outline further in section 5 below:

- Pool Re in the UK charged 0.03% of the insured property's value in Central London and 0.006% of property values outside London⁵⁰;
- The Spanish scheme charges 0.014% for offices, 0.018% for shops and 0.025% for industrial risks; and
- The German scheme Extremus charged in aggregate 0.021% of its insured property's value in 2004⁵¹.

⁵¹ Institute Veolia: http://www.institut.veolia.org/en/our-activities/archives/other-studies-published/report-n3-financial-protection/international-analysis-of-coverage-mechanisms-private-public-partnerships/commercial-terrorism-insurance-in-germany-extremus.html



⁵⁰ Source: Willis & Airmic, 'Terrorism Insurance Review', 2014

While there are variations in the manner in which the above schemes operate and potential terrorist risks in the different countries, it does appear from comparative analysis that the Commonwealth is charging substantially less than other markets for the provision of terrorism risk reinsurance.

5. Global terrorism reinsurance schemes

This section provides an update on the nature and operations of national terrorism reinsurance schemes around the world. This provides broader context to the trends observed in Australia, as well as in relation to any potential changes that may be proposed to the ARPC.

5.1 Overview of other major terrorism reinsurance schemes

Most major Western economies operate some form of national terrorism insurance scheme. All cover commercial property damage, and nearly all cover both business interruption costs and nuclear, chemical, biological and radiation hazards. Some schemes provide cover to residential property and a small number cover life insurance and personal injury. The table below provides summary information for all larger Western economies, as well as Israel and Northern Ireland.

Figure 20: Summary of scope of terrorism insurance schemes in major Western economies

Country (rank by GDP*)	Commercial	Business interruption	NBCR	Residential	Life/personal injury
United States (1)	✓	✓	✓	Х	Х
Japan (3)	n/a	n/a	n/a	n/a	n/a
Germany (4)	✓	✓	Χ	Χ	Χ
France (5)	✓	\checkmark	✓	Χ	X
United Kingdom (6)	✓	✓	✓	\checkmark^1	X
Italy (9)	n/a	n/a	n/a	n/a	n/a
India (10)	✓	✓	Χ	✓	X
Canada (11)	n/a	n/a	n/a	n/a	n/a
Australia (12)	✓	✓	✓²	Х	Χ
Spain (13)	✓	Χ	✓	✓	✓
Netherlands (18)	✓	✓	✓	✓	✓
Switzerland (20)	✓	✓	Χ	X	X
Sweden (22)	n/a	n/a	n/a	n/a	n/a
Norway (23)	n/a	n/a	n/a	n/a	n/a
Belgium (25)	✓	\checkmark	✓3	✓	✓
Austria (27)	✓	✓	Χ	✓	X
South Africa (29)	✓	\checkmark^4	Χ	✓	X
Denmark (33)	✓	✓	✓	✓	X
Singapore (36)	✓	✓	Χ	✓	X
Finland (41)	✓	✓	Χ	Χ	Χ
Israel (42)	✓	✓	✓	✓	Χ
Northern Ireland	✓	✓	✓	✓	X

Source: Pottinger Analysis

In broad terms, the private sector does not provide comprehensive terrorism insurance, even in countries where a national scheme is not in place (ie where there is greatest commercial opportunity from the provision of such a scheme).



5.2 The history of terrorism insurance schemes

Whilst some schemes have been formed in recent years, others date back to the mid twentieth century, as summarised below.

Figure 21: Formation of major schemes

Country	Scheme	Foundation	Premium income (\$AUD millions)
Spain	Consorcio de Compensación de Seguros	1941	1,369
Israel	Property Tax and Compensation Fund	1961	Collected by Taxes
Northern Ireland	Criminal Injuries to Property Act & the Criminal Damage Order	1971 &1977	n/a
South Africa	South African Special Risks Insurance Association (SASRIA)	1979	141.5
United Kingdom	Pool Reinsurance Company Limited (Pool Re)	1993	551
Finland	Finnish Terrorism Pool	2002	Not Available
France	Gestion de l'Assurance et de la Réassurance des Risques d'Attentats et Terrorisme (GAREAT)	2002	290
India	Indian Market Terrorism Risk Insurance Pool	2002	60
Germany	EXTREMUS Versicherungs-AG	2002	75.6
Austria	Österreichischer Versicherungspool zur Deckung von Terrorisiken (The Austrian Terror Pool)	2002	Not Available
United States	The Terrorism Risk Insurance Act	2002	No data
Australia	Australian Reinsurance Pool Corporation (ARPC)	2002	127
Netherlands	Nederlandse Herverzekeringsmaatschappij voor Terrorismeschaden N.V. (NHT)	2003	n/a
Switzerland	Terrorism Reinsurance Facility	2003	Not Available
Indonesia	Indonesian Terrorism Insurance Pool	2004	Not Available
Taiwan	Taiwan Terrorism Insurance Pool	2004	Not Available
Sri Lanka	SRCC/Terrorism Fund – Government	2006	16.1
Belgium	Terrorism Reinsurance & Insurance Pool (TRIP)	2008	23.5
Denmark	Terrorism Insurance Pool for Non-Life Insurance (TIPNLI)	2010	4.4
Singapore	Xin Consortium	2011	Not Available

Source: Pottinger analysis

In broad terms, these schemes can be divided into four groups, as follows:

- Early schemes, including the Spanish scheme, the earliest State-sponsored terrorism reinsurance scheme;
- The UK scheme, formed in the 1990s;
- Schemes created in the aftermath of the 9/11 bombings; and
- More recent schemes.

We examine each of these briefly below.

5.3

48

Early schemes

Spain

Spain formed the *Consorcio de Compensación de Seguros* (Insurance Compensation Consortium or "CCS" in 1941 in response to claims arising from the Spanish Civil War. In 1954, the scheme was extended to cover "extraordinary risks", which included terrorism. In 1991, CCS was established as a separate public corporation, under the supervision of the Ministry of Economy and Finance.

The CCS is a permanent scheme which provides insurance for natural disasters and political and social risks, including terrorism, disturbance, rebellion, riot and armed force actions during peace time. This cover is compulsory for property damage, as well as personal life and accident policies. Premiums are added to policies and paid to CCS, with the insuring company retaining 5% fees for service charges. Premiums are determined directly by CCS. Meanwhile claims are handled directly by CCS, which conducts assessments and pays claims. Cover is unlimited, and is backed by an unlimited state guarantee, although this has never been called.

Israel

Israel's Property Tax and Compensation Fund was set up in 1961 to deal with terrorism and other damage to property. Claims are paid directly by the Israeli Government, and are financed through the collection of property taxes. Cover can be extended at the option of the property owner to include contents of property for an additional 0.3% of the value of the property in question. The scheme covers acts of war and is a permanent scheme.

Northern Ireland

In response to high levels of domestic terrorism, the Government of Northern Ireland introduced the Criminal Injuries to Property Act of 1971 and the Criminal Damage Order of 1977. These provide that the Government will reimburse Northern Ireland residents for damage arising to property in the event of terrorist incidents. Claims are funded from general taxation revenues.

Observations

Given the universal nature of these schemes, terrorism insurance for such risks is not available from private sector insurers.

5.4 The United Kingdom scheme (Pool Re)

The UK has been subject to terrorist campaigns involving bombs for many years, dating back to the "Gunpowder Plot" in 1605, and including numerous attacks during the eighteenth, nineteenth and early twentieth centuries.

Following the Second World War, Irish Republican attacks recommenced in the 1970s, eventually culminating in a series of large, high profile events between 1990 and 1993. These included the London Stock Exchange bomb (July 1990), the Downing Street mortar attack (February 1991), explosions at Paddington and Victoria stations (February 1991) and London Bridge station (February 1992), and the very large bombs at the Baltic Exchange (April 1992) and Bishopsgate bomb (April 1993).

The Pool Reinsurance Scheme (generally known as "Pool Re") was created by the Reinsurance Act 1993, partly in response to significant escalation in terrorism activity over the preceding three years. Initially the scheme only covered "fire and explosions" in regards

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to terrorist incidents. Following the September 11 attacks in the USA, it was extended to include damage from any violent terrorist attack including basic nuclear, chemical, biological and radiological events.

Pool Re offers cover for commercial property and business interruption, as well as cover for commercially owned residential buildings, such as blocks of units. Participation in the scheme is not compulsory, but in practice there is a high level of participation. Members of Pool Re attach their terrorism cover to policies upon request of a policyholder, or offer this as standard across all policies.

Insurers in the Pool Re scheme are free to decide the price for the terrorism cover they offer to their customers. All claims management, premium collection and damage assessment is undertaken by the insurer concerned. Members of Pool Re are charged a premium based on a percentage of the building's agreed value. This is determined by location of each individual exposure, as illustrated below:

Figure 22: Pool Re premium zones & rates

Classification	Areas Covered	Premium
Zone A	Central London	0.030%
Zone B	Inner London, Central Business Districts, The Channel Tunnel	0.030%
Zone C	Rest Of England (excluding Devon & Cornwall)	0.006%
Zone D	Rest of Great Britain	0.006%
Business Interruption	All Areas (includes rents)	0.021%

Source: Willis & Airmic, 'Terrorism Insurance Review', 2014

http://www.willis.com/Documents/publications/Services/Political_Risk/Terrorism_2013_FINAL_web.pdf

Pool Re's membership is subject to an industry wide retention of £100 million per event and £200 million per year. This retention is pro-rated across Pool Re's membership by the market share of each member. That is members with less than 1% share have less than a £1 million retention per event and if a member had a 50% share it would have a retention of £50 million per event subject to a maximum of £100 million per year. It additionally means if there was a billion pound loss which was insured by companies comprising only say 25% of the market the retention would be £25 million requiring Pool Re to pay £975 million.

To pay claims, Pool Re has reserves in the order of £5 billion⁵². In the event that Pool Re's reserves are exhausted by a particular claim, the UK Government provides an unlimited reinsurance facility in exchange for a reinsurance premium of 10% of premiums⁵³ that it collects. Meanwhile premium income earned after an insured event has occurred can also be used to pay claims if necessary.

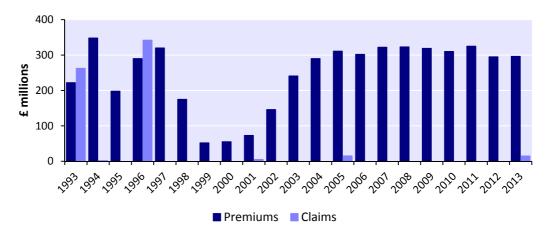
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⁵² Pool Re Annual Report 2013, www.poolre.co.uk

 $^{^{53}}$ This was increased to 50% in 2015 as the scheme was restructured

The following figures outline the claim and premiums collected by Pool Re over time.

Figure 23: Gross Written Premiums vs Claims



Source: Pool Re Annual Report 2013 & Pool Re OECD Presentation 2014- Government's Financial Liability to Terrorism Risk Across the OECD

Figure 24: Pool Re claim history

Year	Event	Claim £
1993	Bishopsgate	262,000,000
1993	Bournemouth	398,000
1994	Finchley (Israeli Embassy)	240,000
1994	Marble Arch Oxford St	162,000
1994	West End	30,000
1994	Israeli Embassy	1,356,000
1996	South Quay	107,000,000
1996	Manchester	235,000,000
2001	Ealing Broadway	4,700,000
2001	BBC Wood Lane	482,000
2005	London Underground	15,000,000
2013	(Undisclosed)	14,810,000

Source: Pool Re Annual Report 2013 & Pool Re OECD Presentation 2014- Government's Financial Liability to Terrorism Risk Across the OECD

http://www.testsite.haggie-partners.com/poolre-annualreport2013.PDF www.oecd.org/daf/fin/insurance/2014-Terrorism-Risk-Insurance-ppt.zip

Changes have recently been made to the pricing arrangements for Pool Re, as part of a wider restructuring of the nature of support provided by the UK Government, and the charges that are made for this support. As part of these arrangements, Pool Re will be allowed to purchase risk retrocessions in the open market.

Meanwhile, the charges to be made by the UK Government will increase significantly. The new arrangements are effectively a hybrid between the provision of standby liquidity facilities to Pool Re and true risk retrocession provided by the UK Government. The underlying structure is dynamic and will result in the extent of retrocession cover provided to Pool Re increasing over time, assuming that no claims are made on the guarantee.

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5.5 Post 9/11 schemes

Prior to the 9/11 attacks, insurance policies typically did not exclude terrorism risks. Following the 9/11 attacks, however, private sector appetite for such risk reduced dramatically to minimal levels, reflecting the severity of the claims incurred. As a result, a number of countries introduced schemes to provide cover for terrorism risk, as outlined further below.

United States

The US scheme was established by The Terrorism Risk Insurance Act in November 2002 in response to 9/11 attacks, initially for a three year period. The scheme was renewedfor six years in January 2015 after lapsing on 31st December 2014, but a six year extension was enacted on the 12th January 2015.

Under the US scheme, the Government directly provides reinsurance cover to insurers for claims above \$100m for any individual event up a maximum of \$100 billion per year. The scheme covers commercial property, as well as casualty insurance, workers compensation, private mortgage insurance, health and life insurance⁵⁴.

Insurers could also opt for nuclear, biological, chemical and radiation risks to be covered on a policy by policy basis.

Under the TRIPRA Scheme, it is compulsory for insurers to *offer* terrorism risk insurance to commercial property and casualty policyholders⁵⁵. However it is not compulsory for business owners to acquire terrorism risk insurance as part of their underlying property insurance⁵⁶. In 2013, 62% of eligible businesses took up terrorism risk insurance⁵⁷. TRIPRA additionally allows insurers to exclude types of property losses. This varies widely depending on the affected industry and location.

TRIPRA does not apply to incidents producing losses of \$100 million or less. If losses exceeded \$100 million, individual insurers are first subject to a deductible from each claim equivalent to 20% of their prior year's premium income. If the claim exceeds this amount, then payment is the joint responsibility of the US Government which pays 85% of the balance and the insurance industry as a whole which pays the remaining 15% of the balance of claims up to a total claim (inclusive of retentions) of \$100 billion.

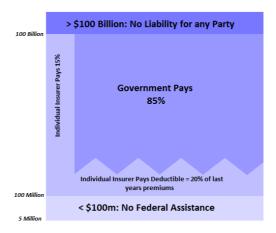
⁵⁴ Terrorism Risk Insurance Act of 2002, As Amended in 2005 and 2007, US.

⁵⁵ Congressional Budget Office, Federal Reinsurance for Terrorism Risk: An Update January 2015

⁵⁶ MARSH – 2014 Terrorism Risk Insurance Report April 2014

⁵⁷ MARSH – 2014 Terrorism Risk Insurance Report April 2014

Figure 25: TRIPRA claim structure



Source: Pottinger analysis

In the 2015 extension Act, the minimum size for Federal assistance will increase over time to \$200m and the industry co-insurance will increase from 15% to 20%⁵⁸.

In order to fund the provision of the Government and industry assistance, the TRIPRA scheme allows the US Government to levy a fee on all commercial property insurance in order to recoup 140% of its payment to insurers. The fee was originally set at 3% of all property related premiums and was subsequently adjusted to be based on a formula related to the size of losses and applies provided the Government's payment to insurers was less than \$27.5 billion (this amount will increase \$2bn pa to \$37.5bn under the changes to the scheme).

The Act additionally calls Treasury to investigate ways to improve the process for declaring a terrorist incident and for the US Government Accountability Office to investigate other terrorism insurance schemes around the world and the viability of commencing a terrorism risk pool and other pre-event funding mechanisms.

France

Since 1986, terrorism insurance in France has been compulsory for properties valued above €20 million. Until 9/11 this was provided directly by private insurers. In response to the 9/11 attacks, which resulted in an inability to secure adequate insurance, Gestion de l'Assurance et de la Réassurance des Risques Attentats et Actes de Terrorisme (GAREAT) was established to provide terrorism risk insurance⁵⁹. France additionally establishes the Caisse Centrale de Reassurance (CCR) to provide reinsurance cover for property damage and business interruption arising from terrorist attacks. CCR acts as a reinsurer for GAREAT.

GAREAT is a co-reinsurance pool whose members are insurers operating in the French market. GAREAT's members are joint and severally liable for losses arising from the pool. GAREAT has two divisions: A large risk section insuring properties valued over €20 million and a voluntary small to medium risk section insuring properties between €6 million and €20 million. Participation is compulsory for large risks and voluntary for small to medium risks. GAREAT insures against all terrorist attacks including losses arising from nuclear, biological, chemical and radiation hazards, subject to a number of exceptions.

⁵⁹ http://www.oecd.org/daf/fin/insurance/France-Terrorism-Risk-Insurance.pdf



⁵⁸ https://www.govtrack.us/congress/bills/114/hr26/text

Under the French scheme, premiums are levied on policy holders by individual insurers. The insurers in turn pay a percentage of their premiums to GAREAT for reinsurance. For properties valued between €20m and €50m the fee is 12% of the underlying premium and for properties valued over €50m the fee is 18%. With the addition of nuclear risks this increases to 24% for all buildings.

GAREAT purchases retrocessions from global reinsurers and CCR. Currently in the event of a claim GAREAT first pays industry retentions of €400m followed by further market based retrocessions of €1.96 billion followed by an unlimited retrocession from CCR which is backed by an unlimited government guarantee.

Germany

In November 2002, Germany introduced a terrorism insurance scheme, whereby insurers and reinsurers created a special insurance company Extremus Versicherungs AG⁶⁰. Extremus provides terrorism insurance in respect of commercial property (and associated contents), inventories and business interruption. Other risks, such as nuclear, biological, chemical, cyber attacks, war and riots/looting are excluded.

Extremus provides cover for property valued in excess of €25 million. Below €25 million, coverage is provided by individual insurers.

Extremus is not a reinsurer – it is a private insurance company offering optional terrorism risk insurance directly to policy holders who may choose to obtain terrorism risk insurance as a 'sidecar' of an existing property and/or business interruption insurance policy. These policy holders specify the level of terrorism coverage they wish to receive which must be for an amount not more than value of their existing policy. Extremus then charges a premium between 0.025% and 0.06% of the sum insured, based on the value of the property insured and the percentage of that value insured. For insured amounts of over €150 million, individual rates are negotiated between the insured party and Extremus⁶¹. Notably the scheme competes with other insurers and property owners are able to choose not to insure terrorism risks.

Under the Scheme, Extremus's liability is currently capped at €10 billion per year across all policy holders. However it additionally limits payments to individual policy holders (ie underlying insured parties) to €1.5 billion per event.

Extremus was originally provided with two guarantees: €3bn from the insurance industry (which is effectively a retrocession) and a second level of guarantee of €10bn from the German Government. By 2005 this had been reduced to a €2bn guarantee from the insurance industry and €8bn from Government⁶². As at 31st December 2013, the company had net assets of approximately €136 million.

⁶⁰ Further information is available from www.extremus.de

 $^{^{61}}$ OECD, Policy Issues in Insurance – Terrorism Risk Insurance in OECD Countries

⁶² https://www.genevaassociation.org/media/65396/geneva%20association%20ed%20298.13%20web%20-%20gas.pdf

Claims are managed by the underlying insurance companies, through whom insurance cover is arranged for underlying insured entities.

Figure 26: Extremus Versicherungs – summary financial information

(Euro Millions)	2007	2008	2009	2010	2011	2012	2013
Premiums	61.4	49.9	52.0	52.1	54.5	52.7	52.0
Sum insured	465,262	445,476	491,875	513,373	611,917	649,267	683,921
Effective cost							
Maximum annual compensation	109,652	186,357	209,248	224,623	241,289	248,420	252,428
Premiums/maximum annual compensation	0.056%	0.027%	0.025%	0.023%	0.023%	0.021%	0.021%

Netherlands

Nederlandse Herverzekeringsmaatschappij voor Terrorismeschaden N.V. (NHT) (Netherlands Reinsurance Company for Losses from Terrorism) was established in May 2003. NHT provides terrorism reinsurance in respect of property, life, non-life and funeral expenses. Aviation and aircraft liability are specifically excluded.

NHT is a corporate entity, wholly owned by Stitching NHT, which is in turn owned by the Dutch Association of Insurers⁶³. Accordingly the NHT is an industry scheme operating with very limited Government support. Over 250 insurers participate in the scheme, representing around 95% of all premium income in the Netherlands⁶⁴ - however participation by insurers and policy holders is not compulsory.

There is no limit on the maximum amount of risk that can be reinsured, but claims are limited to a maximum of €75 million per year per insured party per location in aggregate across all participating insurers. Consequently most insurers will limit their cover to the NHT's capacity, to minimise risk sharing. The scheme is also limited to claims of €1 billion per calendar year.

The first €7.5 million of any claim remains with the primary insurer. The next €400 million of claims in any one year are shared between participate in the NHT pool, with each member's contribution to a claim proportionate to their premium income associated with reinsured risks. The next €550 million is covered by way of retrocessions with international reinsurers, with the final €50 million provided by the Dutch Government.

India

The Indian Market Terrorism Risk Insurance Pool (IMTRIP) was created by Indian non-life insurers in 2002. The scheme has no government backing and was created by the private insurance market in India. All non-life insurance companies operating in India are members of the pool, which is managed by the General Insurance Corporation of India. The entire premium charged for this cover is ceded to the pool after 2% is deducted for service charges by the cedant company. It covers both commercial and residential property, however cover is only available in respect to fire, Industrial all Risks insurance, engineering and fire/engineering sections of policies.

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⁶³ Further information is available from http://www.terrorismeverzekerd.nl

⁶⁴ Conference on terrorism risk insurance 2014

⁶⁵ OECD Publishing, *Terrorism risk insurance in OECD countries*, 2005

⁶⁶ Ibid p.285

Premiums charged are the same for all insurers, ranging from 0.08 to 0.25 per thousand charged on the total sum insured. The premium rates charged depends on the risk classification of policies, which is separated into three risk categories, namely industrial, non-industrial and residential and set by a risk advisory committee.⁶⁷

In the event of a claim, the first layer is a 0.5% deductible which is subject to certain minimum and maximum limits depending on risk classification. The following layers comprise of the pool and reinsurers with a total capacity limit per location of INR 10,000m. This capacity has increased since its inception, from INR 2,000million in 2002 to its current level due to a low level of claims (total of claims settled by the pool over its life is INR 3,769 million) despite 15 major terrorist attacks in India since 9/11 (such as the 800 deaths arising from the Mumbai train blasts of 2006) which were mostly uninsured as terrorism insurance is optional.⁶⁸

Figure 27: IMTRIP premiums and claims, in Rupees crores

Year	Pool premium	Claims paid by pool
2009-2010	306	214
2010-2011	389	76
2011-2012	458	42
2012-2013	483	7

Source: Institute of Actuaries of India

5.6 Modern schemes

A number of other Western economies have introduced terrorism insurance schemes over the last few years.

Belgium

The Belgium government established The Terrorism Reinsurance and Insurance Pool (TRIP) as a not-for-profit scheme in 2008 in order to provide terrorism insurance for all lines of insurance ⁶⁹.

Under the scheme, it is mandatory for insurers to offer terrorism risk insurance in 'mass' insurance policies – which means personal lines plus commercial lines insurance of individuals against injury (such as workers' compensation). The scheme is voluntary for commercial lines insurance including commercial property damage. However insurers representing approximately 95% of premiums participate in the scheme⁷⁰. TRIP as the scheme administrator determines the level of contributions required to be paid by its members. These are then pro-rated by market share.

Initially the scheme was limited to €1 billion, however this is indexed annually and as of 2013 the scheme was funded to €1.176 billion. A second limitation of €75 million per policy holder additionally applies.

In the event of a terrorist incident, there is a 10% industry retention. For claims in excess of this amount the scheme funded in three layers: Insurer-members are joint and severally liable for the first €300 million of claims through a risk pooling system. They are followed by

⁶⁷ Institute of Actuaries of India, *The magazine of the Institute of Actuaries of India*, April 2014 (4)

⁶⁸ Narasimhan B., *Insuring terrorism risk in India*, 2nd international meeting on terrorism risk insurance, Decmeber 2012 - www.oecd.org/daf/fin/insurance/5.BNNarasimhan.pdf

⁶⁹ Belgium – Terrorism Risk Insurance Programme

⁷⁰ www.tripvzw.be/documents/OECD_Conference_Terrorism_Risk%20Insurance_Belgium.pdf

€576 million of retrocessions which is in turn followed by a government guarantee of €300 million. Should a claim event arise, any payment from the Government is treated as a gratuity and funded from consolidated revenue⁷¹.

Denmark

The Danish Government passed the Terrorism Insurance Act in June 2008, establishing the Terrorism Insurance Pool for Non-Life Insurance (TIPNLI) in March 2010. The scheme only provides coverage for losses arising from terrorist incidents utilising nuclear, biological, chemical or radioactive weapons (NBCR). While terrorism insurance is voluntary in Denmark, the scheme is compulsory for any Danish non-life insurer who has obtained authorisation by the Danish Financial Supervisory Authority to underwrite NBCR risks on buildings⁷².

TIPNLI establishes a Terrorism Insurance Council responsible for ensuring that insurers exhaust the possibilities for purchasing reinsurance on market. The council then establishes an industry wide retention based on the total capacity to reinsure NBCR risks. Currently this amount is DKK 5 billion. Should losses exceed DKK 5 billion, the Danish government will provide up to an additional DKK 15 billion.

In exchange for this cover, insurers pay a premium of 0.15% of the Government Guarantee – or in aggregate DKK 22.5 million per year. This premium rate was selected in order to fully fund the scheme over 80 years. As the insurance market increases in capacity, insurers will be required to purchase larger levels of reinsurance and the government guarantee will be reduced along with the premiums paid to TIPNLI.

The Government may recoup payments by way of a levy on policyholders in future years.

5.7 Commercial schemes

Singapore

In 2011, five Lloyd's syndicates (Amlin, Argenta 2121, Canopius, Hardy & Markel) set up Xin Consortium in Singapore to provide terrorism risk insurance for Singapore. The Xin consortium covers Terrorism & Sabotage along with strikes, riots, civil commotions & malicious damage.

Coverage is provided for many forms of property including commercial, residential premises and other property such as art exhibitions and cargo storage. The maximum capacity for a single risk is currently US\$130 million, up from US\$110million since its inception⁷³.

5.8 Observations and implications for the future of ARPC

Whilst most major Western economies have established terrorism reinsurance schemes, there are many differences in the nature and extent of cover provided, the commercial arrangements for the recovery of premiums, and which parties bear the underlying risks. These variations suggest that there are material differences country by country in relation to:

■ The nature and extent of market failure at the time that the schemes were created, and the pace with which such market failure may reduce or be extinguished over time;

⁷³ Australian Treasury, ARPC Triennial review 2012



 $^{^{71}\} www.oecd.org/daf/fin/insurance/Belgium-Terrorism-Risk-Insurance.pdf$

⁷² www.oecd.org/daf/fin/insurance/Denmark-Terrorism-Risk-Insurance.pdf

- The ownership structure for national terrorism risk reinsurance entities;
- The current cost of obtaining reinsurance on the open market for terrorism risk (ie via the use of retrocessions), and its implications for a "fair market rate" for the provision of terrorism insurance via each nation's national scheme;
- The approach adopted to recovery of appropriate premiums for the provision of terrorism reinsurance coverage, whether through up front premiums, enhanced premiums in the event of a claim, or other mechanisms (such as property taxes); and
- The relative cost efficiency with which various schemes operate, as judged by the level of administrative costs incurred compared to the level of premiums collected and/or the underlying level of risk insured.

The various schemes in existence around the world demonstrate that alternative modes of ownership are possible, and that these may have implications for the level of terrorism insurance that is available to the market as a result. For example:

- The UK scheme is administered by a privately-owned administrator (Pool Re) and historically has served to pool risk amongst its participants. Its ability to pay major claims was underwritten by an unlimited backstop liquidity facility provided by the UK Government. Changes to this scheme have recently been proposed, however, which would give the government a greater role in this scheme, including through the provision of a level of retrocession cover, as well as through participation in surpluses generated by the scheme. Full details of these developments are not yet available in the public domain and so we cannot yet provide a full assessment of the implications of these developments;
- The French scheme is administered by an entity that is a partnership between private sector insurers and the Government, with risk retrocessions provided by the Government; and
- The Singapore scheme is entirely operated by the private sector, with no Government support. Insurance is offered on a case by case basis, subject to a maximum for any individual property of some US\$130m.

More broadly, we note that personal lines insurances are offered by a variety of organisations around the world that effectively have mutual status⁷⁴. For example, in Australia this includes the insurance arms of motor clubs such as RACQ. However such risks are short tail and highly granular in nature, and hence much more easily priced than risks covered by ARPC.

⁷⁴ Typically such entities are specialist insurance companies which operate under a corporatized ownership structure which is subject to a governance structure that has the characteristics of a mutual.

6. Options for the future of ARPC

This section provides a summary of potential future ownership models for the ARPC. These range from continuation of the current scheme through to full privatisation and other potential modes of ownership, as well as eventual termination of the scheme (ie transfer of all risks to the private sector, to the extent that this is possible at the time). These are designed to allow an informed assessment to be reached in relation to options on the future of the Act, as well as the costs and benefits of each alternative.

6.1 Implications of long term policy objectives

The overall objective of the ARPC scheme is to ensure the availability of terrorism reinsurance for commercial property and business interruption risks in Australia. This in turn helps to ensure business continuity, by ensuring that there is adequate finance available to support the rapid rebuilding of businesses, critical infrastructure and confidence in the wake of a terrorist event. The response to events of similar magnitude (if different nature), such as the Christchurch earthquake, has demonstrated the significant benefit of such schemes in supporting both economic and community reconstruction.

As outlined earlier in this document, both Pottinger's analysis and the market soundings exercise have suggested that the most effective mechanism for providing terrorism insurance, is some form of risk pool. This serves the twin purposes of:

- Allowing risk reinsurers to take on aggregate risk across the country as a whole, rather than having to price individual risks; and
- Allowing utilisation of an element of community rating in setting prices, which helps to spread the direct cost of insuring higher risk CBD properties across a wider base of what are arguably secondary beneficiaries of such insurance⁷⁵.

Accordingly, in exploring alternative modes of ownership, we have considered a variety of different structures which maintain an underlying pool structure. We have also considered other structures, although the market soundings exercise has indicated that these are unlikely to be considered attractive by most stakeholders.

Private sector profitability expectations

To be sustainable from a private sector perspective, the ARPC would need to generate annual income (from annual premiums and from earnings on reserves) sufficient to meet the cost of the requisite retrocessions (including government-provided retrocessions), the anticipated cost of claims (averaged over the long term, and taking account of investment returns), as well as ongoing operational costs. In addition, it would need to generate an adequate return on the capital required to operate the business, including any capital required from a regulatory capital adequacy perspective, and to be able to finance the increases in the capital base required over time (reflecting market growth, inflation etc).

We have used current market rates for retrocession cover to illustrate the approximate costs that might be involved, together with operational costs, as summarised below as of 2014:

- Cost of existing retrocession programme: \$74.1m;
- Extension of above programme to cover 100% of risks above \$360m: \$8.3m;

⁷⁵ ie parties who benefit from the additional economic and financial resilience implied by ensuring that major business and financial centres can be restored after any major terrorist attack.



- Cost of existing government reinsurance: \$55m⁷⁶;
- Estimated illustrative market price for the cost of cover for first \$360m: say \$50m (estimate of \$30m based on 2014 figures and \$70m based on 2012 and 2013 figures)⁷⁷; and
- Operating costs of just below \$10m.

Together, these costs total some \$197m, 52% higher than current premiums of \$130m.

Meanwhile, we note that the capital required to operate the ARPC relates almost entirely to its role as insurer, rather than as pool administrator. In a conventional insurance company, this capital is split into two elements:

- The first is so-called **technical provisions**, ie provisions for the likely level of claims that may emerge over time, usually set high enough that there is at least a 90% probability of sufficiency (ie the provisions being sufficient to meet claims which emerge). Estimating the appropriate level of provisions is highly challenging for ARPC, as the risk of a large claim above the limit of reinsurance coverage is very hard to assess;
- The second element is **shareholders' equity**, ie the capital that is required to operate the business and to meet regulatory requirements. The latter takes into account both the minimum level of capital required by prudential regulators in the light of the risks being written, together with a prudential margin (to ensure that minimum capital levels are maintained even in the event of major claims over and above technical provisions, and/or losses on investments etc). Typically large insurers have maintained shareholders' equity of at least 1.5x the minimum capital requirement, and smaller insurers have typically maintained at least 2.0x the minimum capital requirement. ARPC is not currently regulated by APRA, and so a minimum capital requirement for the entity has not been established. Given the unusual nature of risks insured by ARPC, there are no obvious peers that can be used for comparison purposes.

When a conventional insurance company is sold, the technical provisions transfer with the entity together with the associated assets which are held to cover the technical provisions. Thus no consideration is attributable to these assets and liabilities, which essentially net off against each other. An acquiror does, however, pay for the net assets (ie shareholders' equity) that are acquired, together with a level of premium which reflects the profitability of the insurer in question ⁷⁸. The latter is effectively adjusted to take account of any material perceived over or under provision within the technical reserves.

The nature of risks underwritten by ARPC makes the separation of its capital between technical reserves and shareholders equity challenging, as there is no logical method for estimating the likely frequency of claims. Currently the accounts do not make this distinction, and the "Reserve for Claims" is reported as part of net assets.

Assuming that the Reserve for Claims continued to be treated as part of net assets, a private sector owner of the entity would expect to achieve a minimum return on that capital, typically of at least 10% to 12% post tax (with target returns commonly at set at around

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 $^{^{76}}$ Currently it is anticipated that the ARPC will pay the Commonwealth \$112.5m by way of a \$55m guarantee annual fee and four \$57.5m annual dividends.

⁷⁷ A simple estimate based on the costs of the lower levels of retrocession purchased over the last two years implies that the total cost of reinsurance of the first \$360m of any claim would be at least 8.4% or approximately \$30m per year. The same calculation for the prior two years implies a total cost of around 19% to 20%, or around \$70m per year.

⁷⁸ And adjustment for any potential overvaluation of assets acquired and/or undervaluation of liabilities.

15%). For illustrative purposes, a 10% to 12% post tax return on ARPC's total reserves of \$573m would equate to \$57m to \$69m post tax, or \$82m to \$98m before tax.

Based on the estimate of arm's length pricing set out above, the ARPC would generate \$197m of revenues, together with investment returns (\$26.5m in 2014), implying total revenues in the order of \$226m. Assuming ARPC continued to retain the first \$360m of risk, together with the existing 10% participation in the reinsurance programme, it would earn a pro forma net profit after tax of \$60m, equivalent to a return on capital of 10.5%. A summary is provided below.

Figure 28: Transition to arm's length pricing – simplified statement of comprehensive income

Quote	Current	Adjustments	Pro forma
Premium income	129.7	67.3	197.0
Net reinsurance costs	(74.1)	-	(74.1)
Government reinsurance	(55.0)	-	(55.0)
Net premium revenue	0.6	67.3	67.9
Claims costs	0.0	-	-
Operating expenses	(10.7)	-	(10.7)
Underwriting result	(10.1)	67.3	57.2
Investment income	26.5	2.1	28.6
Pre tax profit	16.4	69.4	85.8
Pro forma tax charge	(4.9)	(20.8)	(25.7)
Post tax profit	11.5	48.6	60.1
Implied return on equity	2.0%	+8.5%	10.5%

Source: Pottinger estimates. Allowance made under adjustments for incremental investment income net of tax

These figures show that, a transition to estimated market pricing would deliver an adequate return on capital so long as no claims were incurred. This level of return would allow dividends to be paid to shareholders and some profit to be retained to support growth in the business (ie to allow the overall capacity to provide cover to increase over time). If valued on this basis (ie with no allowance made for the risk of claims), the ARPC would be valued at around its net asset value of \$573m. In particular, the ARPC would be able to distribute the majority of its post tax profit, whilst making retentions to provide for inflationary increases in its net assets.

In practice, an owner will also need to factor in an allowance for expected claims to its pricing (or its valuation of the company). This amount will be set such that the reserve for claims can be maintained (allowing for inflation effects etc) over the long term. The higher the annual allowance made for possible future claims, the greater the discount to net asset value that will be realised in the valuation. Alternatively, prices would need to be further increased to absorb this additional element of cost, for a valuation in line with net asset value to be achieved.

Valuation benchmarks

The value implied by any transaction involving ARPC will inevitably be benchmarked against the current valuations of Australia's two major listed general insurance companies, even though the nature of insurance risks accepted are very different. By way of illustration, these two companies (IAG and QBE) are currently valued at 14.1x and 14.8x FY2015 post tax



profits post tax profits respectively⁷⁹. Thus, before any allowance is made for differences in the risk profile of the organisations concerned, for every \$100m of market value ascribed to the organisation, ARPC would need to earn approximately \$7m of post tax profit (approximately \$10m pre tax).

In practice, ARPC's activities entail very different risks from those inherent in the IAG and QBE businesses. In particular, the latter include substantial elements of short tail, personal lines insurance business and whose portfolios are highly diversified. As a result, we believe that it is helpful to consider ARPC's role as administrator of the terrorism risk pool separately from its role in transferring the underlying insurance risks to the private sector.

6.2 ARPC's twin role as scheme administrator and insurance provider

In its current form, ARPC combines the role of administrator of a national terrorism risk pool with the role of provider of insurance coverage for the first approximately \$535m of any claim. Thus, if ARPC became a stand-alone entity, it would essentially be a specialist monoline insurance company that was restricted to providing solely terrorism reinsurance for commercial property and business interruption risks in Australia.

Although monoline insurers exist covering other types of risk, a business of this nature would be highly unusual and with very few peers globally. In particular, it would have a highly concentrated exposure to a very low frequency, very high value type of claim, which has important implications for any privatisation structure, as explored further below. In this context, we note that the firms which provide terrorism risk retrocessions to ARPC all operate businesses which cover a much wider variety of risks.

In addition, it is important to note that the ARPC is a financial institution and an insurance company. As a result, any consideration of alternative ownership structures will require careful assessment of matters related to regulatory capital adequacy and the broader potential implications for the financial system. For example, where frontline insurers reinsure terrorism risk through ARPC, those insurers need to be highly confident that they will receive the appropriate payment in the event that they make a valid claim on ARPC. If not, they will be required to hold material amounts of capital themselves to address the underlying risks.

If the ARPC continues to benefit from a comprehensive guarantee in relation to insurance claims, this will ensure that any financial institution that places such reliance on ARPC can do so with minimal knock-on effects for its own capital adequacy requirements. These issues will also impact on the level of equity that it is reasonable for the ARPC to hold, and in turn the level of profitability required in order to ensure that an adequate return can be earned on that capital.

Given these complexities, when considering alternative modes of ownership it is helpful to consider potential options for the future of ARPC as pool administrator separately from an assessment of potential options for the transfer of further terrorism risk to the private sector. It is important to note that:

The administration of a reinsurance pool implies low levels of operational risk, as an administrator is simply responsible for day to day management and oversight of the pool, including the collection of premiums, arrangement of reinsurance and management of residual funds and liquidity facilities retained to ensure adequate short term liquidity and ongoing solvency within the entity itself. A pure administrator would

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⁷⁹ Source: Capital IQ as of 5th January 2014.

not itself be responsible for the payment of claims themselves, but rather would arrange for payment of such claims out of the underlying insurance pool. Changes to the scheme would, however, be required to ensure that the ARPC could act as a pure administrator, rather than accepting part of the claims risks associated with the scheme (as it does currently); and

The provision of insurance against terrorism involves substantial levels of risk, although the likely frequency of claim events is very hard to assess. Currently this risk is shared between the government (via the guarantee), reinsurers (via retrocessions), the ARPC (via retention of a level of risk) and insurers/insured parties (via industry retentions). Private sector parties that accept this risk must be suitably authorised insurance companies and must therefore hold adequate claims reserves and capital, reflecting financial sector capital adequacy requirements.

As a result, the large majority of the capital required to operate ARPC as a standalone entity will relate to its role as insurer, rather than as pool administrator. Similarly, the large majority of the capital tied up in ARPC currently relates to its role as insurer, rather than its role as administrator.

In most insurance companies, profits are calculated after making appropriate allowance for the risk of future claims. In the case of ARPC, however, the likelihood of such claims is very hard to quantify. As a result, it reports profit before making provisions for claims, and transfers all profits into either the reserve for claims or its claims handling reserve. As a result, it is not possible to identify how much underwriting profit is achieved by the organisation. This has implications for the approach adopted to valuing the entity.

Whilst virtually all respondents to our market soundings exercise have indicated their preference for the status quo to be retained, there are options that would result in the transition of responsibility for administration of the pool to the private sector. Whilst these would not necessarily result in the transfer of additional insurance risk to the private sector, there are separate mechanisms through which the latter could also be achieved.

6.3 Mechanisms for further privatisation of insurance risks

In relation to the provision of insurance coverage, there are a number of parties who could bear the underlying risks. These are, in order:

- Underlying insured parties this represents the full mutualisation of risk, with premiums collected, and claims managed on behalf of all insured parties in a true mutual arrangement. This would require an explicit mechanism for accessing the funds required to meet claims, to the extent that such a claim was greater than the available capital within the pool and/or from any retrocessions in place at the time. Such mechanisms could included stand-by liquidity facilities and/or an immediate levy on all scheme members;
- Front line insurers in theory the government could maintain the current legislative requirement that insurers provide terrorism insurance for commercial property and business interruption insurance. We note, however, that there appears to be minimal interest from insurers in providing such coverage⁸⁰, at least at current levels of pricing. In addition, if insurers carried such risks on their own balance sheets, they would need to hold substantial additional capital to cover these risks. In these circumstances, it would be important to place a cap on the maximum exposure that insurers were

⁸⁰ They remain able to underwrite terrorism risks directly without reinsuring with the ARPC under the current arrangements, but do not choose to do so.



obliged to carry⁸¹. Regulatory capital considerations are addressed further later in this document;

- Reinsurers and other reinsurance capital providers currently there is only sufficient capacity in the market to provide approximately \$3bn of reinsurance coverage to the ARPC⁸². This is significantly lower than the maximum probable loss on a single terrorism event in a major city centre (estimated at around \$7.3bn by ARPC for a 2 tonne bomb⁸³), and much lower than the current \$10bn Government guarantee; and
- Government whether or not an explicit government terrorism insurance scheme is in place, governments are likely to be seen as the default provider of financial support in the event of major disasters, whether a result of natural causes, terrorist events or other circumstances. The creation of a formal scheme such as the ARPC allows explicit funds to be raised from relevant stakeholders in advance of any such event.

Assuming a pool structure is retained, the operator of the pool will seek to optimise the risk/return trade-off between retaining risks within the pool or transferring them to other stakeholders as outlined above. Thus decisions regarding how these risks are managed can be separated from decisions about which stakeholder or group of stakeholders represents the best owner of the ARPC in its role as administrator of the pool. We have explored the alternative modes of ownership which preserve a pool structure in section 6.4 and 6.5 below.

If a pool structure is retained, it is likely that government support will continue to be required in some form, at least for the foreseeable future. It remains possible, however, for the terrorism insurance element of such support to be progressively transferred to the private sector. A number of mechanisms are possible, and they are outlined further in section 6.6.

Meanwhile, as an alternative to modes of ownership which involve continuation of a national risk pool, a pool structure could be replaced with some form of mechanism designed to support, facilitate or legislate greater direct involvement in the provision of terrorism insurance by insurers. Whilst we do not believe that such structures would be attractive to private sector stakeholders, we have provided further commentary in section 6.7.

One broad conclusion from our review has been that the precise nature of the government's role in acting as guarantor of terrorism risk reinsurance schemes is unclear in a number of countries around the world. Specifically, in many cases it is not clear whether the government in question is acting as a terrorism risk reinsurance provider of last resort or whether it is simply providing standby liquidity facilities to enable payment of claims in the event that such claims exceed the claims-paying capability of the entity in question when such a claim is made. We provide further commentary on this in section 6.8 below.

If a pool structure is continued, there are areas in which further clarification and/or extension of the boundaries of the pool will be helpful. We provide further commentary on these issues in section 6.9 below.

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⁸¹ Currently insurers who do not reinsure through ARPC do not benefit from the overall cap on claims.

⁸² A total of approximately \$5bn of terrorism insurance is available in Australia, of which some \$3bn is purchased by ARPC, approximately \$1.3bn is purchased by NSW SI Corp and the balance by other organisations.

⁸³ ARPC "Terrorism Risk in Australia" presentation 29th August 2014, slide 41

Finally, irrespective of the structure utilised, careful consideration will need to be given at an early stage to potential regulatory capital implications of any change to the current structure and basis on which ARPC operates, as explored further in section 6.5.

6.4 Alternative modes of ownership which preserve a pool structure

In this section, we explore in qualitative terms logical end states for ownership of the ARPC by different types of organisation. In this context, there are five categories of stakeholder who could logically operate the ARPC pool (or own the company that administers the pool). These are:

- Underlying insured parties this represents a traditional mutual ownership structure, whereby underlying beneficiaries of the scheme are also its owners;
- Front line insurers this represents an insurance industry solution to the need for terrorism insurance to be available. This is the structure utilised by Pool Re in the UK, which requires co-operation between major insurance companies in the country in question;
- Reinsurers in theory reinsurers could co-operate to manage a national pool of terrorism risk in any particular country. In practice changes in the amounts of capital available from individual reinsurers over time, the global nature of major reinsurance businesses, and variations in risk appetites make this challenging to implement in practice. In addition, such a structure would result in significant potential conflicts of interest/transfer pricing issues, with reinsurers acting both as retrocession providers and purchasers of retrocessions (as operator of the pool);
- Third party investors, whether as a specialist operator of solely the ARPC scheme, or in the form of a specialist insurance pool administration company. This structure would be broadly similar to the way in which other "managed schemes" operate, such as workers compensation pools; and
- The Government, as is currently the case.

We provide further commentary on each of these potential owners and the most logical ownership structures below. We also include commentary on the practical viability of each option, taking into account industry feedback received during the recent consultation exercise. As assessment of the mechanisms by which these could be achieved (trade sale, IPO or other structure) is set out in section 6.5.

Ownership by underlying insured parties: A conventional mutual structure

To create a structure owned by the underlying insured parties, the ARPC would transition into ownership by a mutual representing the underlying beneficiaries of terrorism risk insurance, ie the underlying insured parties. These are purchasers of property and/or business continuity insurance with a terrorism risk element. Under such a structure, the ARPC would likely continue to purchase risk retrocessions in the open market in order to reduce the impact on reserves of any individual claim, and would seek to retain profits until such a point as it had built up sufficient reserves.

To be effective, the organisation would need to be able to draw down a standby liquidity facility in the event of a major claim that exceeded its reinsurance coverage and internal claims paying capacity. It is highly <u>unlikely</u> that such a facility could be sourced from the private sector without a government guarantee being provided of that facility given the challenges for mutuals in raising new equity capital.

Alternatively, the organisation could (if permitted) purchase further retrocession cover from the government, in order to cover any shortfall between the maximum claim possible under



the scheme and the level of claims paying capacity at the time (ie reserves plus retrocessions). Thus such a structure will continue to require some form of government support. In our view independent ownership of the entity will increase the importance of pricing for any guarantee providing by government being set at arms' length terms.

The transition of the ARPC to this structure would involve a privatisation by way of mutualisation. There are very few if any true precedents for such structures⁸⁴. One practical challenge with such a structure is that there is no ready mechanism by which the proposed new owners could pay for the existing retained capital within ARPC. As the ARPC has provided terrorism insurance under government ownership (ie premiums were paid by insured parties in return for insurance coverage), this capital logically belongs to the Australian Government.

However we believe that the current level of the reserve for claims appears to be broadly reasonable given the nature and size of potential future claims which may be made upon it. As a result, it has low inherent value, for the reasons outlined below.

Logically, the value of the retention pool that is maintained should increase over time, for example with inflation. Meanwhile the assets that are held against these reserves will typically be invested in very low risk (ie short term) fixed income investments, earning a yield that is modestly higher than inflation. In this context, we note that:

- If there are no claims on the reserves, and the pool did not generate any profits or losses year on year⁸⁵, then the Reserve for Claims would generate a surplus each year of the difference between the inflation rate and short term government bond rates;
- Currently, short term government bond rates are very similar to inflation rates, implying that the Reserve for Claims has minimal inherent value. Alternatively, using the long term target inflation rate of 2.5%⁸⁶ and the current yield on 15 year government bonds of around 3.2%, the intrinsic value of the Reserve for Claims would be around \$36m at a 10% discount rate, or some 10% of its headline value. At a 7% discount rate, these figures increase to \$53m and 15% of headline value;
- These figures, however, assume that no claim is ever made on the fund. It is challenging to assess the likelihood of a claim on these reserves, ie the frequency with which claim events on the fund of up to \$360m are likely to occur. If the average such claim was \$200m (in current value terms, ie was indexed for inflation) and claims occurred every fifty years, then the average cost of a claim in net present value terms would be some \$57m (at a 10% nominal discount rate). If the frequency of claims increases to once every 30 years, the average cost of a claim in net present value terms would increase to some \$86m. At a 7% nominal discount rate, these figures increase to \$84m and \$115m respectively.

These figures illustrate that, with an average claim on the fund of \$200m, the expected cost of claims on the reserve fund are higher than the net present value of surplus income expected to be earned by the fund. In other words, in order to maintain the level of reserves in real terms and in the face of claims on the reserves, contributions would need to be made to the fund from time to time. We emphasise that the above figures are illustrative only – if the average claim on the fund is \$360m (the maximum possible), then the net present value of such claims ranges between some \$100m and \$155m assuming a frequency of between 1

Western Australia explored the potential privatisation of GESB via a proposed mutualisation, a proposed transaction on which Pottinger advised. The privatisation was aborted following a change of government.

⁸⁵ le the premium income was sufficient to purchase retrocessions and to cover administrative costs, but no surpluses were earned.

⁸⁶ Ie the mid-point of the official target range of 2% to 3%.

in 30 and 1 in 50 years. If the average claim on the fund is lower, then the net present value of such claims will also be lower.

In all cases, these figures also assume that no claim is made in relation to the risk assumed through participation in the retrocession programme, under which ARPC currently has a liability of some \$314.5m. Taken together, these figures suggest that, assuming that the ARPC continues to operate, the intrinsic value of the Reserve for Claims is likely to be low.

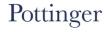
As a result, if the current pricing regime is maintained, then the inherent value in the ARPC is low and hence it could logically be transferred into mutual ownership for little or no consideration. In other words, the retention value of the ARPC to government under the current arrangements is low, because the premiums charged to participants in the scheme is insufficient to cover the costs (including reinsurance costs) of running the scheme.

As an alternative to selling the existing capital, the capital could be returned to consolidated funds by way of a pre-disposal dividend. The new mutual would thus come into existence with minimal capital. It would, however, need to increase pricing significantly in order to be able to afford to pay for retrocessions from the government and to be able to accumulate a baseline level of retained capital in the early years after its formation. Alternatively, it could operate at existing pricing levels, reduce the level of reinsurance purchased from the market, and place much greater reliance on a government-guaranteed standby liquidity facility in the event of a claim⁸⁷. We examine this further in the following section.

One benefit of an industry mutual structure (however implemented) is that it places ownership and decisions related to the overall operation of the scheme in the hands of the underlying beneficiaries. As noted above, however, the scheme would still require government support via some form of guarantee. As a result, a number of issues would require careful consideration prior to implementation.

- Pricing: The underlying insured parties may decide that it is preferable to reduce the price paid for insurance as far as possible, whilst ensuring sufficient income is available to pay for relevant financial support. This would include payment for the provision of a standby liquidity facility (by government), as well as any risk retrocessions which the entity chooses to purchase. If pricing is set too low, however, this will effectively transfer the cost of the insurance protection away from current insured parties and towards those that purchase property insurance after a major claim. At the extreme, a fully insured party that owned a major property which was subject to a claim might elect not to rebuild the property, and instead return funds to shareholders, thus avoiding any future premiums;
- Risk pools: Depending on the structure of the Board and the extent of control exerted over management of the entity, there may be pressure to change the risk sharing arrangements between different types of property, in order to advantage a particular category of investor;
- Retention levels: Logically retention levels could be set by the scheme operator (as the collective representative of scheme participants). The scheme would, however, depend on ongoing government support in some form. As industry retentions represent the first risk layer to be impacted by any claim, modest changes in industry retention levels will have a disproportionate impact on the overall cost of retrocessions. Government is

⁸⁷ A standby liquidity facility would need to be provided by – or at least be guaranteed by – government as such a facility would not be available from the private sector. The costs for provision of such a facility (where the principal advanced would eventually be repaid to government) should be materially lower than the cost of reinsurance (where any payments made were never repaid).



therefore likely to take a keen interest in retention levels and may wish to retain a level of control over this;

- Building a claims reserve: Related to pricing issues, is the ability of the scheme operator to adopt a dividend or capital return policy. This would impede the ability of the fund to generate a surplus of funds (similar to that of Pool Re) in order to reduce the government's exposure to risk. At the two extremes of dividend and pricing policy, the pool could either build its own surplus of capital in excess of the maximum probable loss over a period of time this would alleviate the need for a government guarantee or the pool would be remain entirely dependent on government guarantees and retrocessions. As a result, government may wish to determine capital retention rules to which the entity must adhere;
- Charges for government guarantees: If the pool is administered by a non-government party, this will increase the importance of any guarantees provided to the pool being priced at arms' length terms. This may be achieved through arms' length pricing up front, or through explicit arrangements for repayment of (eg) any loan being made to the pool by Government. This might be achieved by way of increases in charges following such an event;
- **Declaring a terrorist incident:** Past events such as the 9/11 attacks resulted in prolonged litigation as to the nature and number of terrorist incidents which have been involved. The ARPC scheme currently allows the Minister to make a contemporaneous declaration as to whether and if so the number of events that have occurred based on the Attorney General's interpretation of how an event compares to the Criminal Code. This declaration involves government discretion triggering the scheme's liability to pay claims. Any owner or operator of the scheme will be exposed to this discretionary risk (as well as delays in the declaration process), and hence the processes for declaring a terrorist incident may need to be clarified. In this context, we note the Martin Place incident in Sydney which occurred on 15th December 2014 was declared a terrorist incident on the 15th January 2015.

During the market soundings exercise, a stakeholder in the property sector commented that it believed that ARPC should be recognised to have some form of mutual status, ie where the accumulated reserve for claims is recognised to be owned by underlying insured parties.

"[It] is our strong view that the current and past contributors to the scheme, particularly to the pool of reserved funds, should be recognised as the owners of the scheme; like a mutual insurance company. We therefore believe contributors should be entitled to receive income generated from the pool of reserved funds (and retained earnings), or a return of excess funds..." 88.

Meanwhile a large Australian bank suggested that surplus revenue be returned to the contributors: "The biggest issue for the [us] is that there has been no review of the actual rates, especially for long term contributors like [us] who have been making pool contributions from the beginning... No one knows what the charge should be and the ARPC seems to be a fund that [we] contribute[] to that ends up in Government coffers ... [We] query[] whether there is a moral obligation on the Government to pay or provide compensation to uninsured people like in the case of bushfire or flood... If this is the case then will money in the scheme be used for that?"

Notably these parties were the only respondents who suggested that the ARPC should not be government owned.

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⁸⁸ Stakeholder in the property sector, response to market soundings.

The commentary provided in the above submission appears to reflect a view that the ARPC scheme was in effect designed to mutualise risk amongst underlying insured parties from the outset, and hence that profits earned to date are essentially "owned" by insured parties. This is not our understanding of the current arrangements and we do not agree with the perspective put forward by the above respondents. In particular, we believe that the reserve for claims rightly belongs to the entity providing the associated insurance coverage, ie the ARPC (and thus to the Australian Government).

Nevertheless these views serve to illustrate problems arising from aspects of the current scheme that are not entirely clearly from the current documentation. We comment further on this and related issues of transparency and clarity in section 6 below.

In addition, if the ownership of the ARPC was transferred into some form of mutual ownership by the underlying insured parties, and the reserve for claims was transferred as part of these arrangements, then the reserve for claims would transfer back into the ownership of those parties (along with the liability for paying any such claim).

Ownership by front line insurers: An insurance industry solution

As an alternative to traditional mutualisation, the operation of the ARPC scheme could be taken over by front line insurers (and potentially reinsurers). This would result in a transition to a structure similar to that which has been in operation in the UK since the early 1990s (Pool Re). Under this structure, front line insurers (and potentially reinsurers) would work together to administer a terrorism risk insurance pool on behalf of underlying insured parties.

The new operators of the scheme will need to make decisions regarding the extent to which risk is retained in the entity itself, or transferred to other parties through risk retentions by underlying insured parties, retrocessions with reinsurers (limited by market capacity), and retrocessions with the government (should the latter be available). The operators of the scheme will also need to set out how claims will be paid should insufficient internal capital or external risk reinsurance be available to cover the maximum possible claim. This could be achieved through use of a government backstop liquidity facility or government guarantee of such a facility provided by a third party.

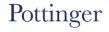
In relation to ownership and voting, one approach would be for ownership and votes to be proportional to the amount of risk reinsured through ARPC, measured by premiums ceded.

Again, the issue of payment for the retained capital lying within ARPC will arise. Whilst major insurers should generally have sufficient capital accessible to be able to finance such an acquisition, investment in terrorism risk of this nature may not be attractive and/or may not align with their strategic interests. In such circumstances, it would be logical for the scheme to operate on the basis that all or substantially all risks are either ceded to reinsurers and the government (via retrocessions) or remain with the underlying insured parties (via retentions from any claims that are made).

The immediate short term interests of insurers as owners of ARPC would be to ensure that it achieved an adequate or better than adequate return on invested capital.

As an effective monopoly⁸⁹, careful consideration would need to be given as to whether and

⁸⁹ Pottinger notes that insurers may reinsure or self insure terrorism risks as they choose. However if they reinsure with the ARPC, and only the ARPC, insurers benefit from a statutory \$10 billion cap on claims. This protection, along with benefits from risk pooling, is sufficiently valued by the market as to make the ARPC an effective monopoly.



how the government should seek to regulate both the prices charged to underlying policyholders as well as the risk tiers that are applied.

Implementation of such a structure would require explicit support from Australia's major insurance companies, and in particular Suncorp, IAG and QBE, who together account for a significant proportion of overall commercial lines risks. We note that the structure of the Australian market is very different from the UK, in that the Australian market is substantially more consolidated. As a result, it is possible that the largest insurers would exert significant influence over the scheme.

Unlike the UK's Lloyd's market, Australia does not have a history of managing pooled risk structures of this type, which may add to the challenges of implementing a structure of this nature. On particular risk is that such parties may favour implementing much higher industry retentions, as these will be challenging for any but the largest insurers to absorb. This would create a structural advantage in favour in the industry leaders, to the disadvantage of smaller competitors.

During industry consultations, we note that no stakeholders have come forward suggesting that this structure should be adopted in Australia. Moreover, we note that both Suncorp and QBE have not shown any interest in such a structure and have indicated their preference for the current arrangements to be continued.

Reinsurer operation of the pool

A further alternative would be for the operation of the pool to become the responsibility of a group of reinsurers. Very similar issues would arise on implementing such a structure as for an industry-managed pool, and so we have not repeated them here.

In addition, there would be potential for significant conflicts of interest, as reinsurers would be acting both as owners of the pool, and as providers of reinsurance capacity to the pool, without the balancing effect of participation by front line insurers. This would increase the importance of appropriate external regulatory scrutiny of the entity regarding both pricing and the structure of underlying risk pools.

We note that, during market soundings, no stakeholders have suggested this structure. This is notable as global reinsurers are arguably the entities with the most relevant experience to manage an insurance pool of this nature, given their direct involvement with a number of other major schemes around the world.

Third party ownership of the pool

The further alternative would be for a third party to acquire ARPC. In theory, the most likely such owner would be a specialist insurance pool management company. Given the monopoly nature of the ARPC's activities, strong external regulatory scrutiny over such an entity would be important, in relation to pricing, the structure of underlying risk pools, and the effectiveness of risk transfer to third parties (including via Government-provided retrocessions).

We believe that the most likely approach for such a purchaser would be to operate the business purely as a managed scheme. This would mean that the owner would need to be assured that no risk was retained by the organisation, through the use of government and/or reinsurer retrocessions and industry retentions.

Given the lack of adequate market capacity to provide complete coverage for a \$10bn claim, it would have substantial ongoing dependence on government risk retrocessions. Alternatively, it would require access to a substantial liquidity facility in order to be able to

meet any claims that arise which are in excess of its claims-paying capability. Typically specialist insurance administration companies do not have access to such liquidity. It remains likely, therefore, that such a facility would need to be provided by the government, or at least backed by a government guarantee. In addition, the pool operator would require a high degree of certainty regarding how pricing would be determined after a major claim event, in order to be certain that any drawings on a liquidity facility could be repaid over a reasonable time frame.

We would expect that any parties interested in an arrangement such as this would monitor opportunities of this nature closely and that they would have come forward pro-actively or at the latest shortly after the Australian Government announced the scope of the current review. We note that, during the course of our review, no such parties have come forward to Pottinger expressing interest in acquiring the ARPC.

Continued government operation of the pool

The remaining alternative is for the ARPC to continue in substantively its current form, operating as a government-owned administrator of the pool. This is the preferred option of most of the stakeholders that have responded to our request for market feedback.

In response to the questions: "Should the ARPC continue to operate as a 100% Government owned entity? Alternatively if you believe an alternative mode of ownership may be appropriate, what organisations should own that entity?" included:

- Australian Insurer #1: "It is our view that the ARPC should remain a 100 percent government entity at this time to ensure: availability of uniform terrorism cover; and continued access to the Federal Government guarantee provided by the pool"
- Infrastructure owner: "Yes (no change). An alternative option could be a Mutual arrangement so any surplus funds are returned to policy-holders".
- Insurer: "It seems to work well".

In addition to written responses the following verbal responses were provided by respondents:

- Global Reinsurer #1: "The ARPC is one of the most efficient reinsurers in the world ... We can't see a better way to manage terrorism reinsurance than the current arrangement."
- Global Reinsurer #2: "The reinsurance market can get behind the ARPC ... [as] it is a better platform to support. ... Other markets offer spot pricing on an ad-hoc basis. Those facilities have questionable post event stability [and are] likely as not as stable as the ARPC". "In theory the UK is a model to consider ... we [would still] have to access the government guarantee. Then it comes down to a cost of funding."
- Australian Insurer #2: "We support the act to continue:". The ARPC is an efficient mechanism for managing risk.
- Insurance broker: "If the ARPC was privately owned then it will require capital. We don't know how much this should be, but if it is not enough then the insurers will go bankrupt and the government will end up paying anyway."
- Regulator: "The market has assumed stability due to the presence of the ARPC... Everyone assumes the ARPC will carry on because that is the responsible thing to do... Given the ARPC's system importance its capital requirements would be unlike other insurers... [We] would prefer it if [the ARPC] was not privately owned."



Overall conclusions

There are a number of potentially viable purchasers for the ARPC, as outlined above. Although only two stakeholders have come forward suggesting that an alternative mode of ownership should be considered, this does *not* mean that a privatisation of the ARPC is impossible. In practice, there are a number of pathways which could be utilised to privatise the ARPC in its role as administrator of the scheme, as outlined in the following section.

As with the other structures outlined above, ongoing ownership of ARPC by the Australian Government also does not mean that the Government must continue to accept all underlying insurance risks that cannot be transferred to the private sector through reinsurance.

We note that, if a decision is taken to maintain a pool structure, there are a number of issues which we believe it will be particularly helpful to address. These include matters related to the boundaries around the current scheme, potential for closer co-operation with other analogous terrorism risk pools, current pricing arrangements (and post-claim pricing arrangements), clarity on the nature of government support. We provide further commentary in section 6.8 below.

6.5 Models for privatisation of the ARPC's role as scheme administrator

In relation to the ARPC's role as administrator of the scheme, three main options for transfer of the scheme to the private sector are potentially viable. The options include:

- A sale of the ARPC to a private sector third party, such as an insurer, reinsurer or specialist insurance scheme administration company;
- An IPO of the ARPC, thereby creating a listed specialist insurance scheme administration company; and
- Transfer of the ARPC into a mutual structure, where it became owned either by insurers (and reinsurers) as is the case with Pool Re, or by underlying insured parties (as is the case with classic insurance mutuals).

To implement the first two of these structures, the ARPC may need to cease retaining any terrorism insurance risk itself, in order to concentrate solely on the function of acting as administrator of the pool. In particular, the elimination of this risk may make the ARPC more attractive to third party investors.

The level of capital required to act purely as administrator would be very modest, thus allowing the large majority of capital retained in the ARPC (potentially including claims reserves) to be returned to the shareholder (ie the Australian Government) prior to a sale. The cost of obtaining reinsurance of the first \$535m (ie the amount of the current reserve for claims) of any potential claim would, however, be materially higher than the cost of obtaining more remote layers of reinsurance protection if this approach was adopted. This would likely mean that prices would have to be increased materially to meet these costs. The associated increase in prices may meet strong resistance from scheme participants.

Alternatively, the ARPC's existing capital comprised of its reserve for claims might be retained within the pool. This would mean that the reinsurance pool itself could absorb the first \$535m of any loss, as is currently the case. Thus this reserve would be managed by the administrator on behalf of scheme participants, and could not be realised by the administrator itself. There would not, however, need to be an immediate increase in pricing, as the scheme would have the assets required to meet the first \$535m of any claim.

In this context, the ARPC's latest accounts show that the organisation has some \$573m of equity. As noted above, in practice \$535m of this is a claims reserve. If ARPC were sold in its existing structure, a purchaser (or investor in an IPO) would be likely to regard this as a technical provision for the potential cost of claims. Given the difficulty in assessing the risk of a claim, the purchaser would likely ascribe a very low value to the associated assets, on the basis that it was possible that they could required to meet a claim in the near future. Thus it is possible that very little value would be realised for these assets.

Transition to a pure administrator

In this scenario the Australian Government could potentially realise a significant dividend from the ARPC on implementation, but this would come at the price of a material increase in premiums for insured parties. Meanwhile the value of the residual entity to be sold would depend on the level of profit which the operator was able to extract from the fulfilment of its role as administrator of the pool.

To address this, the structure of the premiums charged would need to be amended, in order to identify separately the revenue stream that would be attributable to the ARPC in its role as scheme administrator from revenues intended to contribute to the funds within the pool and purchase of reinsurance.

As the administrative costs of the ARPC are largely independent from the cost of obtaining reinsurance, the optimal way to do this is likely to be to allocate a dollar amount of annual premiums to cover administrative costs, and for this figure to be increased in line with a measure of inflation. All costs associated with the administration of ARPC would be met by the new owner out of this revenue stream. The assets associated with the claims handling reserve would be owned by the administrator, and returns on those reserves would accrue for its benefit.

Meanwhile all remaining revenues would be allocated to the pool and would be utilised to purchase reinsurance retrocessions or to be retained within the pool. The surplus arising (in years when no claims were received) would be retained within the pool. Meanwhile the assets associated with any reserve for claims that was built up would be owned within the pool itself and investment returns would also be retained within the pool.

Sale of the ARPC in its existing form

The ability of the Australian Government to realise value from the existing net assets of the ARPC under these options will depend critically on the way in which the \$535m reserve for claims is viewed by the purchaser. If these reserves were simply returned to government, it is probable that some stakeholders would argue that these reserves represented provisions for future policy-holder claims and that distribution was not warranted in the circumstances. Thus an alternative approach would be to sell ARPC in its current form, utilising one of the three structures identified above.

In these circumstances, the \$535m reserve for claims would transfer with the business. It would likely be regarded by purchasers as a provision, rather than equity in the business, and hence would not contribute to net asset value. It is important to note that the profitability of an entity of this nature would be critically dependent on the ongoing availability of retrocession cover from private reinsurers and the government on the current terms. Even a modest increase in the cost of such cover would wipe out profits completely. In this context, we note that the cost of retrocessions from reinsurers has fallen significantly over the last five years and any reversal of this trend would lead to significant losses, unless premiums were increased.



Pro forma illustration of financial effects

An illustration of the implied statement of comprehensive income for the administrator and for the reinsurance pool is set out below. In this example, we have allocated \$15m of overall premium revenue (approximately 12%) to the role of pool administrator, and have assumed that the pool continues to benefit from the existing reserve for claims (and hence the investment income associated with this pool of assets).

Figure 29: Pro forma statement of comprehensive income

	Administrator	Pool	Combined
Premium revenue	15.0	114.7	130
Outwards retrocession premium expense	0.0	(74.1)	(82)
Cost of Government retrocessions	0.0	(55.0)	(55)
	15.0	(14.4)	1
Net claims incurred	0.0	0.0	0
Gross profit/Underwriting result	15.0	(14.4)	1
Operating expenses	(10.7)	0.0	(11)
	4.3	(14.4)	(10)
Investment income ¹	2.0	24.5	27
Pre tax profit	6.3	10.1 ²	16
Pro forma tax charge at 30%	(1.9)	(3.0)	(5)
Pro forma post tax profit	4.4	7.1	11.5
Net assets ³	38	535	573
Return on equity	11.6%	1.3%	2.0%

^{1:} Split pro forma to net assets, 2: Before provisions for future claims,

These figures illustrate that the administrator would generate profits of approximately \$4.4m a year post tax, equating to a return on equity of some 11.6%. Overall, we believe that returns at this level should be sufficient to justify an acquisition price by an acquirer of the administrator function for a price at or above the implied net asset value of \$38m (ie the value of the claims handling reserve that would be allocated to the administrator).

Meanwhile, the figures show that the pool is only barely profitable, and that the ability to purchase the required retrocession cover to address risks not covered by private sector insurance is significantly dependent on the generation of investment income. Thus if the pool did not benefit from the retained reserve for claims:

- There would be insufficient income to purchaser the required retrocession cover (as investment income would no longer be earned on the reserve for claims); and
- The cost of existing cover would increase materially as reinsurers would face the first \$360m of losses directly, rather than this being covered by the pool, and would not benefit from the 10% participation that ARPC has in the amounts that are reinsured.

We are able to estimate the potential cost of purchasing retrocessions to cover the first \$360m of any claim from the open market with reference to quotes received for reinsurance set out in section 4.6. In particular, some of these quotations show the cost of reinsurance for claims that attach at a low level of claim. For example, selected quotes show that:

■ The lowest level of excess quoted on was \$350 million and resulted in quoted Rates on Line of between 7.49% to 5.76%.

^{3:} Reserve for claims treated as a provision, and hence removed from net assets

- Quotes for retrocession with around a \$425 million to \$450 million excess have attracted rates on line of between 3.96% to 5.4% over the last 3 years.
- Quotes for retrocession with an excess of \$500 million have had rates on line of less than 3.6%.

Straight line interpolation of the cost of reinsurance for cover between \$360m and \$500m implies that the cost of such cover will increase materially as lower levels of excess are sought. Rates for 2014 and 2013 suggest that, if the excess were set at nil, the cost of reinsurance would be the equivalent of a rate on line of approximately 8.4%. Rates for 2010 and 2012, however, suggest a rate on line for such cover of around 20%, illustrating the significant reductions in the cost of reinsurance for lower levels of excess that has occurred over recent years.

Based on these figures, the approximate cost of reinsurance for claims between nil and \$360 million would be approximately \$30m per year. We emphasise that this figure is an estimate only and reflects the current relatively soft market for terrorism risk reinsurance. Using the rates implied by the cost of reinsurance in 2010 and 2012, the cost would be some \$70m.

We further note that these figures are illustrative in nature, and also that a revenue model of this nature would provide no incentive to the operator to manage the scheme in a manner that was in the best interests of insured parties or the government. This illustrates the importance of creating rules or guidelines for the scheme, including in relation to the amount or structure of retrocession cover purchased from third parties, as well as in relation to the pricing of risk retrocessions or standby liquidity facilities from government.

We further note that this would represent only a modest acquisition for many potential acquirers, including major insurance companies. This would serve to increase the universe of potential acquirers for whom such a transaction would be viable. It would, however, imply that an IPO of the company may be challenging, given the small prospective value of the company and its specialist nature.

Under the third structure, where the ownership of the ARPC transitioned to an industry-owned mutual, we believe it is unlikely that the new owners would be prepared to contribute any material equity in order to take ownership of the company. If the reserve for claims is treated as a technical reserve, the business and operations of ARPC could be transferred to the new owners for zero consideration, with the remaining \$38m claims handling reserve returned to government. Thus this mechanism would prospectively realise a similar value to a trade sale or IPO of the administrator with the claims handling reserve transferred with the sale.

One of the merits of mutual ownership of the pool administrator would be that there would be alignment between the interests of insurers (or insured parties, depending on which became owners) and the administrators of the scheme. In particular, it would mean that decisions related to the extent and structure of retrocessions purchased from the private market were made by a management team that was directly accountable to the underlying beneficiaries of the scheme.

Meanwhile implementation of any of these approaches would require changes to clarify the precise structure of the scheme, the ongoing role of government, and in relation to pricing. These changes are summarised briefly below:

Absolute clarity would be required as to overall structure of the scheme. One option would be for the scheme to provide terrorism insurance coverage (with Government acting as the backstop provider of terrorism reinsurance coverage, to ensure that the risks in the scheme could be fully reinsured). The other option would be for the scheme



to *pool terrorism risk* amongst all members, with the costs of claims shared between members through the mechanism of premiums charged before and after an event. In the latter case, the Government would provide a standby liquidity facility in order to ensure claims could be paid should an event occur, and the resultant loan would be repaid out of future premiums;

- Absolute clarity would also be required regarding the basis on which Government set a price for the provision of risk retrocessions to the pool and/or the provision of standby liquidity facilities to the pool. It would be critical that these were set dynamically over time in a manner that ensured they remained in line with market pricing for similar facilities. Similarly, clarity will be required regarding the interest rate payable on any loan from government, as well as the term over which any such loan would require to be repaid;
- Under all of these structures chosen, the new administrator of the ARPC scheme would not be subject to any insurance risk. All residual risk would be retained within a risk pool itself (ie risk that was not reinsured with the private sector, or with the government, or which remained with insured parties through risk retentions);
- Absolute clarity would also be required regarding the basis on which premiums should be set, including the basis on which prices would be changed in the wake of a major claim event. This will be important to ensure that the pool can remain solvent following a major claim, ie that it can afford to make the requisite repayments of any loan drawn from government;
- Careful consideration will need to be given as to when and how the revenues allowed for the scheme administrator may need to be varied (for example if the scope of the scheme expands materially); and
- In order to ensure that adequate premiums continue to be generated after a major claim to ensure the pool can remain solvent, it may be appropriate to introduce legislation to make participation compulsory. Whilst this would not be of immediate concern to the administrator, who does not bear such risks in these models, they will wish to see that the pool will remain viable over the medium to long term in order to ensure continuity of their own business.

6.6 Alternative approaches for transferring insurance risks to the private sector

At its formation, the large majority of the risk was born by the Australia Government, through the mechanism of the government guarantee. At this time a small amount of risk was imposed on insured parties and/or their insurers, through the industry retentions. These operate as follows:

- Each individual insurer has a retention equalling is 4% of the fire and industrial special risk insurance premiums they collect. This is subject to a minimum of \$100,000 and a maximum of \$10 million for each insurer; and
- If claims by multiple insurers produce retentions greater than \$100 million in aggregate, then each insurer's retention is reduced pro rata so that the maximum retention across the industry is \$100 million ⁹⁰.

Through the early years of its existence, ARPC built up a level of retained capital, such that it now has capacity to absorb the first \$535m of any claim above the industry retention of up to \$100m. In addition, since FY09, it has developed a retrocession programme, providing approximately \$3bn of coverage (as outlined in more detail in section 4 of this document).

76

⁹⁰ ARPC Annual Report 2014 p32.

As a result, although the size of the Australian Government guarantee has not been reduced, it now represents a top layer of cover⁹¹, as it will only be completely exposed if an initial overall claim exceeds \$3.6 billion⁹².

As at June 2014, the ARPC's retrocession program used an excess of \$360 million. That is the ARPC would pay the first \$360 million of claims. This amount can be funded from its claims reserve of \$535 million. Beyond claims of this size, the ARPC can access its retrocession program to reduce the exposure of the Commonwealth guarantee. Claims of \$1.5 billion are covered using \$136.3 million of co-insurance. This amount can be funded from the ARPC's claims reserve after paying the \$360 million excess- with no need to access the Commonwealth guarantee. Beyond claims of this size, the ARPC is protected by a further \$1.9 billion of retrocession (providing the ARPC with protection against a total claim of \$3.6 billion) but it would need to provide an additional \$185 million of co-reinsurance. Of this \$185 million, the ARPC had a \$39 million available in its claims reserve (after paying the initial excess and previous layers of co-reinsurance). That is, for claims up to \$3.6 billion, the Commonwealth's total exposure would be \$146 million. Beyond claims of \$3.6 billion the remaining \$9.854 billion of the Commonwealth guarantee would be used to pay a total claim of up to \$13.454 billion.

We emphasise that the sharing of risk is not directly proportional to the headline amount of risk accepted by each party, as risk reinsurance layers higher up the reinsurance stack relate to events that are less likely to occur, and where the risk of a payment being called is more remote. The risk of a claim is implicit within the cost of retrocessions for each layer of cover. This risk can be expressed as the frequency with which claim events are expected to occur. These are summarised in the table below.

Figure 30: Overview of 2014 Retrocession program

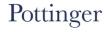
L	.ayer	Retrocession	Excess	Co reinsurance %	Rate on line Implied probal	bility
C)	\$0m	\$0m	100%	N/A	N/A
1	L	\$15m	\$360m	20%	5.500% 1 in 18 y	/ears
2	2	\$75m	\$375m	20%	5.310% 1 in 18 y	/ears
3	3	\$50m	\$450m	15%	4.300% 1 in 23 y	/ears
4	ı	\$1,000m	\$500m	11%	3.195% 1 in 31 y	/ears
5	5	\$1,500m	\$1,500m	7%	2.007% 1 in 50 y	/ears
6	5	\$400m	\$3,200m	15%	1.850% 1 in 54 y	/ears

Source: ARPC internal data

As set out above, most alternative modes of ownership for ARPC (as administrator of the scheme) will continue to depend on government support. This highlights the importance of giving consideration as to how such risks can be transferred to the private sector progressively over time. There are a number of mechanisms by which this could be achieved. They include:

■ Increasing the level of risk retained by underlying insured parties progressively over time. One mechanism to do this would be to index the level of industry retentions, without indexing the cap on coverage under the scheme. Current industry retentions are set at absolute dollar amounts which are independent of the amount of risk being insured by the insurer in question and in addition have not been indexed over time. Since the formation of the scheme in July 2003, consumer prices in Australia has

⁹² Industry retentions of \$100 million, plus ARPC claims reserve of \$545 million plus retrocessions of \$2.918 billion.



⁹¹ Subject to payment of co-reinsurance as discussed below.

increased by 35%⁹³ and capital city property prices have increased by 71%. We believe that there is a case for increasing industry retentions. This will, at the margin, reduce the likelihood of a claim being made on consolidated funds, as well as the prospective size of that claim. Nevertheless, to preserve the effectiveness of the ARPC scheme, any changes of this nature should only be modest, to ensure that underlying risks borne by insured parties are within their financial capacity.

- Purchasing additional retrocession cover from the market, to the extent that this is available. In practice, this will be limited by the extent of capacity available from the market, and by the amount of premium income collected by ARPC that is available to purchase retrocessions. Whilst this would not reduce the headline risk to the Australian Government (which would remain subject to the \$10bn limit), it would reduce the likelihood of such a claim being made;
- Adjusting the basis on which the cap on the scheme operates, so that increases in the level of retrocessions purchased serve to reduce the residual risk to Government. For example, if the maximum payout by the scheme were capped (rather than the Government's liability being capped), increases in industry retentions and risk retrocessions would serve to reduce the maximum exposure of the Government in the event that a claim was made. Currently, such changes do not reduce the maximum claim size, which remains set at \$10bn, although they do reduce the likelihood of a claim;
- Adjusting the conceptual basis of the scheme so that it operates to pool risk amongst insured parties, rather than relying on Government-provided reinsurance of the underlying risks. In such circumstances, the Government would still need to provide standby liquidity facilities to the scheme (or to act as guarantor of such facilities). In the event of a claim that required drawdown of the facility, the government would receive both interest payments as well as a return of the resulting loan. To be successful, this approach would need a careful review of pricing, to ensure that there would be adequate premium income to meet interest payments and debt repayments following a claim. To the extent current pricing was inadequate in such circumstances, pricing would either need to be increased in the near term, or would need to be increased immediately following a claim event.

The above mechanisms can be used progressively to transfer risk from the government back to the private sector. In particular, if the scheme became a pure pooling arrangement amongst insured parties, this would result in all risks being borne by such parties, albeit with Government funding support provided in the event of a major claim.

For such mechanisms to be effective in transferring risk back to the private sector, arms' length prices would need to be charged for support provided by government (whether through risk retrocessions or the provision of liquidity facilities). In the case of government provided retrocessions, this may result in an increase in charges to ARPC. In such circumstances, it will be critical that the relationship between the government and ARPC is more clearly documented and that insured parties are made aware of these arrangements.

In addition, if Government support was limited to a liquidity facility, consideration would need to be given to the level of pricing that would be required in the aftermath of a major claim which led to a call on a government-provided liquidity facility. Charges would need to be increased in order to meet both interest payments required on any loan made to ARPC, and in addition to cover principal repayments. Consider a scenario in which a \$7bn claim arose, of which \$100m was met by industry retentions, \$400m was met by ARPC, and \$3bn was

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⁹³ CPI increase from June 2003 to September 2014. ABS CAT No. 6401.0

met by retrocessions. This would leave a shortfall of \$3.5bn to be funded. The table below shows the annual cost of interest and principal repayments, for a range of interest rates and assumed repayment periods for the loan.

Figure 31: Illustrative cost of interest and principal repayments following a claim

Repayment period	Assumed interest rate					
	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%
10 years	\$421m	\$432m	\$442m	\$453m	\$464m	\$476m
15 years	\$304m	\$315m	\$326m	\$337m	\$349m	\$360m
20 years	\$246m	\$258m	\$269m	\$281m	\$293m	\$305m
25 years	\$212m	\$224m	\$236m	\$248m	\$261m	\$274m
30 years	\$190m	\$202m	\$215m	\$228m	\$241m	\$254m

As illustrated above, even with the interest rate set at around the current historically low long term government interest rate, and with a repayment period of 30 years, a substantial increase in current premiums would be required to meet the required payments.

6.7 Alternative approaches which do not utilise a pool structure

In addition to the options outlined above, there are other approaches which could be utilised which do not require maintenance of a pool structure and/or which do not involve community pricing. We note that virtually all respondents to our market engagement process have indicated preference for a nation pool structure to remain, and so include these structures for completeness.

At the outset, it is important to note that the current arrangements do not legislate participation in the pool by all underlying insured parties or by their insurers. The economics of the scheme, however, mean that where a party takes out commercial property or business interruption insurance that falls within the ambit of the scheme, there is a strong incentive to participate. This arises because insurers who participate in the scheme are protected by the maximum event limit of \$10bn (ie if there is scaling back of payouts by ARPC, the insurer is not exposed to any further liability). If they do not participate in the scheme, they do not benefit from this cap and cannot impose such a cap of their own.

There are a number of options for consideration which differ from the current arrangements, as outlined briefly below.

- Individual pricing: In place of utilising three risk bands, all properties and businesses taking out insurance could be offered individual pricing. In theory this would lead to more precise pricing of individual risks (compared to the current arrangement which assumes that they are correlated with the risks of fire). In such circumstances, ARPC would need a considerably larger team in order to be able to undertake the requisite pricing activities. This would come, however, at the cost of removing the benefits of community rated pricing outlined elsewhere in this document. We note that the German scheme Extremus operates on this basis;
- **Direct sourcing**: Front line insurers could continue to be required to include terrorism insurance for commercial property and business interruption as part of their cover. If ARPC were disbanded, they would then be forced to source reinsurance for their portfolios directly from the market, or to bear those risks directly. The Australian Government could offer some form of backstop guarantee, whether in the form of standby liquidity or risk retrocessions for claims of over a certain size. Such a claim threshold would need to be scaled relative to the risks born by the insurer in question, in order to avoid material disadvantage for mid-sized and smaller insurers. We note



that this approach is already possible under the current scheme, as front line insurers may choose to source their own reinsurance coverage directly from the market, and not participate in the ARPC scheme (subject to the caveats on risk caps above). We understand that a major Australian insurer may have explored such an approach during 2014, but without success. Meanwhile we note that there would prospectively be a significant impact on the capital that APRA would expect insurers to hold if such risks remained. We also note that several major reinsurers have indicated their strong preference to provide risk retrocessions to a single pool, rather than to multiple individual insurers, as this improves risk diversification for the reinsurers and simplifies their approach to pricing; and

■ Phased reduction in reinsurance: A further alternative would be to legislate a phased reduction in the level of risk reinsurance provided by ARPC, whilst retaining the cap and continuing to require front line insurers to provide terrorism risk insurance coverage. This would represent a transition from current arrangements to one where insurers were forced to deal directly with private sector providers of risk retrocessions.

In exploring such options, we note that a number of participants in our market soundings exercise have made the point that major risks of this nature will remain with the Australian Government irrespective of whether or not a scheme is operating, and whether or not such a scheme is owned and operated by the private sector or by Government. In particular, in the event of a terrorist act which creates major uninsured losses, it is likely that both the business community and the general electorate will look to the Australian Government to provide financial support to assist with economic and community rebuilding.

As a result, such respondents argue that it is better for government to identify and manage such risks explicitly – and to seek to gather premium income in advance of any such claim – than it is to respond retroactively should such an event occur. In addition, if government relies solely on post event levies or taxes to recoup such support payments, this will increase the economic burden on individuals and/or companies at a time of potentially material economic and/or social stress. This may be economically and/or politically unappealing.

6.8 The nature of government support to terrorism risk pools

It is important to note that, in many such schemes around the world, the precise role of the Government in question remains unclear. In particular, for a number of schemes around the world, there is a lack of certainty as to whether the Government's role is to provide, a standby liquidity facility or to provide risk reinsurance. Whilst these two are not mutually exclusive, the two approaches result in fundamentally different outcomes following any claim event:

Where the Government provides **standby liquidity** to the fund, the Government will be repaid this money, together with interest, out of future premiums earned by the fund. Depending of the pricing of the scheme in question, this may require changes to the premiums charged to insured parties in the future, in order to ensure that adequate returns are generated to be able to make the requisite repayments. The greater the increase in premiums that is required in such circumstances, the more it is that future insured parties meet the cost of a historic claim. Where pricing is fully arms' length, then in theory at least future premiums should be adequate to finance repayment of funds advanced by the Government without any need for a change in pricing ⁹⁴. Thus

⁹⁴ In practice, it is impossible to know in advance whether the level of premiums collected will be sufficient over the long term, as the long run risk of claims cannot be assessed using statistical measures based on short term historical information.

these arrangements essentially support mutualisation of risk amongst the underlying insured parties, with Government funding support addressing the challenges of the "low frequency, high severity" nature of potential claims;

where the Government provides **true risk reinsurance**, the cost of meeting any claim arising under such arrangements will be met by Government at the time (subject to the structure and limits of such reinsurance). The associated costs will not be met directly by underlying policy holders. Given the legislated nature of the scheme, however, the Government maintains the ability to increase premiums after an event. This could logically occur if the frequency and/or severity of claims experienced in practice was higher than implied by the pricing of the scheme. Assessing underlying long run frequency and severity will remain challenging, however, even in the wake of a major claim, as terrorist events are intrinsically different in nature from most other types of insurance risk.

Both of the above approaches address market failure. In the first instance, a very large standby liquidity facility of the nature required would not be readily accessible (unless that facility were itself supported by a government guarantee), due to the high potential risk that the entity may not be able to repay such a facility, or may only be able to repay such a facility very slowly over a very long time period. In the second instance, the government role is to make up for the shortfall in reinsurance coverage available from private capital markets.

The appropriate level of fee to be paid to the Government in return for providing such a guarantee will be very different in each of these two cases. In particular, the fee for provision of standby liquidity facilities (where funds advanced are eventually repaid with interest) will be materially lower than the appropriate fee for provision of full reinsurance coverage (where funds are not repaid).

We note that the nature of guarantee to be provided by the Australian Government is not clear in the original enabling legislation for ARPC. Specifically, it is not explicit whether the guarantee is of the nature of provision of backup liquidity facilities and/or risk reinsurance.

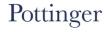
In the advice provide by the Government Actuary⁹⁵, the calculation of fees to be paid to Government is, however, clearly made on the basis that the Government is providing risk reinsurance. This reinsurance covers claims that exceed the capacity of the existing private sector retrocession programme and the ARPC's own reserve for claims, up to a maximum claim of \$10bn. The fees being levied equate to a marginal rate on line of some 0.55%, which is materially lower than the marginal rate on line for the upper layers of the retrocession program of around 2.0%⁹⁶. If the government priced its guarantee fee at 2.0%, then the appropriate fee for a \$10 billion guarantee would be around \$200 million.

We note that the calculations by the Government Actuary were based on the assumption that the risk of a total claim of over \$10bn was nil, and that it would thus not charge for this element of the guarantee (ie for the top \$4bn of cover).

6.9 Other matters to be addressed should a pool structure be continued

If the pool structure is continued, we believe there will be merit in addressing a number of areas of where the scope of the current arrangements are unclear or where, in practice, the

⁹⁶ ARPC Annual Report FY14 provides aggregate retrocession fees of \$81.728 million minus \$7.606 million in rebated brokerage divided by retrocession cover of \$2.918 billion equaling 2.54%. This is the aggregate cost of retrocession.



⁹⁵ Memorandum from the Australian Government Actuary to Treasury 13 October 2011 Re: Dividend payment from the terrorism pool.

government may be put in a position where it needs to meet claims irrespective of whether they are formally covered by the scheme. If changes to the ownership of ARPC are contemplated, it is likely that future owners of the scheme will require these issues to be addressed prior to implementation of the new structure.

These areas include:

- Mixed use buildings: Should a terrorist attack cause material damage to a mixed used building that is not covered by the scheme, the Government is likely to come under significant pressure to provide financial support to parties that are affected. As a result, we believe that such buildings are better included within the scheme, in order that the government (through ARPC) has the benefit of collecting insurance premiums in advance of any such event, and has a ready mechanism for providing support following an event that is consistent with other buildings that may have been effected;
- Biological and chemical hazards: We understand that the legal position in relation to the exclusion of biological and chemical hazards associated with terrorism attacks is not entirely clear under the scheme. During market soundings, some reinsurers have indicated that they would expect such claims to be met regardless of any insurers' exclusion clauses (and covered via their reinsurance) and others have expressed an opposite view. Were such an event to occur, uncertainty regarding the extent of cover provided by ARPC would potentially create both economic and political risks. Meanwhile in any event parties that are affected may well seek government support. As a result, we believe it is important that the government provides absolute clarity regarding any restrictions that apply to the scheme.
- Recognition of a permanent role for ARPC: After more than a decade since its original formation, and with global reinsurance pricing at a relatively low point in the cycle, there is still only private sector capital available to provide for about 30% of the \$10bn guaranteed by the Australian Government. In this context, we note that the \$10bn limit on the government's liability has never been increased, although the purchase of retrocessions has increased the capacity of the scheme to around \$13bn. Meanwhile, most respondents to the market soundings exercise have expressed a clear preference for a pool structure to continue. As we have outlined above, such a structure would be required to support many of the alternative modes of ownership that we have identified in our report. Accordingly, we believe it would be appropriate to amend the legislation to give ARPC a permanent existence.

In addition, we note that there are other very similar risk pools related to State assets being managed separately, including via NSW SICorp in NSW, VMIA in Victoria and QGIF in Queensland. Meanwhile the State-based Workers' Compensation Schemes each have their separate terrorism risk exposures. There may be benefits in closer co-operation with these pools.

6.10 Timing considerations

The alternative modes of ownership set out above each represent a logical *end state* for ownership of the organisation. Accordingly there may be various intermediate ownership structures that involve partial ownership by the Federal Government and/or a staged approach to transferring risk to the private sector. In addition, the Government may identify a preferred end state, but elect not to implement a transition to that end state until some point in the future.

In assessing the relative merits and disadvantages of each of these options, it will also be important to give consideration as to *when* any particular preferred option might best be implemented. This may be set out in absolute terms (ie implementation by a particular

date) or with reference to a particular benchmark (ie when a predetermined criterion or a set of criteria are met). This will have the benefit of giving the ARPC clarity regarding its medium to long term future, which is likely to help ensure the efficiency of the organisation from an operational perspective, as well as in terms of the structuring of its reinsurance arrangements.

Should Government decide to implement an alternative mode of ownership for the ARPC, we believe that it would be attractive to implement this in the near term for a number of reasons. These include:

- From an operational perspective, the ARPC is well established and has a stable, highly experienced management team;
- Commercial lines property insurance costs have fallen in recent years. As a result, any
 changes to the scheme which require increases in the cost of terrorism insurance would
 be implemented at a time when overall insurance costs have been falling;
- ARPC has yet to experience a claim event, meaning that any potential issues related to the division of costs between parties who have and have not previously made claims do not arise;
- ARPC has accumulated a basic level of reserves for claims. Combined with reinsurance arrangements, this is currently sufficient to meet the cost of at least one moderately large event (although we recognise the potential challenges of obtaining value for this reserve on transfer to a new owner).

We are aware of a small number of precedents related to the privatisation of insurance entities and similar organisations that will be relevant for Treasury to consider in assessing the potential viability of alternative modes of ownership for ARPC. These include:

- The privatisation by way mutualisation that was proposed for GESB, the Western Australian State superannuation administrator and investment manager;
- The privatisation of IRB-Brasil Resseguros, Brazil's largest reinsurer, in 2013; and
- The privatisation by mutualisation of "MyCSP", the UK Civil Service Pension administrator in 2012; and
- The formation of the private mutual Circle Partnership in 2004, which in 2011 acquired the management rights UK National Health Service hospital Hinchingbrook Hospital.

6.11 Summary of major items to be addressed before any privatisation

Should the Australian Government elect to pursue a change to the current ownership model, there are a number of key items which we believe will need to be addressed at the outset. These are discussed in more detail elsewhere in this report and are summarised here for ease of reference. They include:

- Giving the scheme a permanent existence;
- Setting out post event protocols for changes to the scheme that would be made in the event that a major claim on the scheme materially reduced or eliminated its reserves. This will need to address both the approach adopted to pricing of the scheme as well as whether or not participation in the scheme would need to become compulsory at that point in time;
- Defining the **boundaries** around the scheme more clearly, including in relation to biological and chemical hazards;
- Removing where possible areas of potential inconsistency, such as in relation to the current lack of coverage of certain types of mixed-use building;

Pottinger

- Considering the regulatory capital implications of a change in structure or ownership, both for the scheme itself, as well as for financial institutions that derive protection from the scheme;
- Establishing pricing principals to be utilised to set pricing over time, given the nature of the scheme as a statutory quasi-monopoly;
- Formalising the basis on which the **cost of government support** is calculated, including for risk reinsurance and/or for the provision of standby liquidity facilities.

6.12 Regulatory capital considerations and related matters

In common with a number of other global schemes, the ARPC currently operates as a Government owned entity, and benefits from a Commonwealth Government guarantee that allows claims to be paid well in excess of currently available retrocession coverage. This guarantee means that all counterparties can place a high reliance on ARPC's claims-paying ability, as it is underwritten by the Australian Government's AAA credit rating.

Under Government ownership, ARPC benefits from an explicit guarantee by the Australian Government of all claims-related liabilities, subject to the legislated \$10bn cap on claims in respect of any one event. The ARPC is currently exempt from regulation as a financial institution, and accordingly is not supervised by APRA and is not required to hold regulatory capital. Meanwhile organisations that reinsure risks through ARPC benefit from such cover being backed by an explicit guarantee. As a result, reliance on such reinsurance does not create a need for such organisations to hold additional regulatory capital.

If the ownership of ARPC was transferred to the private sector, it may still operate as exempt from regulation by APRA. If, however, the ARPC did not benefit from the existing Government guarantee, financial institutions that benefited from reinsurance provided by ARPC would need to hold additional capital to reflect risk inherent in that reinsurance coverage (ie risk related to the claims paying capability of ARPC).

As ARPC would be a specialist reinsurance company, there would be potential merit in making it subject to regulatory oversight, as is the case for other reinsurers operating in Australia (whether via APRA or their home country regulator). In such circumstances, ARPC would be required to hold capital reflecting:

- The nature of risks that it was underwriting;
- The level of retrocessions that it had secured;
- The claims-paying capabilities of reinsurers from which it had obtained retrocessions;
- Any residual Federal Government support; and

84

Other factors relevant to the assessment of regulatory capital requirements.

Careful consideration will be required to assess the appropriate level of capital for such an organisation to hold, to ensure that it is adequately capitalised. This will be an important area for discussion with APRA in order to assess the viability of any proposed alternative mode of ownership.

The AGA analysis indicating that the ARPC should pay a fee of around \$50 million to access the government guarantee did not appear to take into consideration the cost of the capital that the Commonwealth needed to reserve against claims. The AGA arrives at a guarantee fee by pricing the risk of a claim event only. Given that the maximum possible loss is \$10 billion and there is around \$4 billion of retrocession available the AGA priced a loss greater than \$10 billion at zero (given it has a zero percent chance of occurring) and a \$4 billion loss at the current retrocession rate on line of around 2%.

However, regardless of the probability of an event, any capital set aside for that event must generate an adequate return on equity. The market's pricing of retrocession, seems to indicate that the required return for this capital is equivalent to a marginal rate on line of around 1.8% to 2.0%. This would indicate that the full pre-event funded guarantee fee payable to the government is \$180 million to \$200 million. We do not conclude that the Commonwealth should increase its fee to this level. Instead given the positive social benefit of operating the scheme, the Commonwealth should charge a fee that reflects its cost of providing the guarantee.

We note that these considerations will also apply to any private sector organisation that took on the role of ARPC (ie by underwriting terrorism reinsurance directly in Australia, whether as a national monopoly provider or via the open market). Such organisations will need to hold incremental capital to cover the risks that they take on, but will also benefit from capital efficiencies arising from global risk-pooling effects. Such benefits are already reflected in the price of obtaining retrocessions from such organisations.

In addition, should financial institutions invest directly in ARPC or a successor entity to ARPC, it is likely that APRA will deduct such investment from its assessment of the regulatory capital of the organisation in question.

These issues will require careful assessment prior to any decision to implement an alternative structure for the ARPC or to pursue an alternative mode of ownership for ARPC as they will have a material bearing on the practical viability of any particular approach.

6.13 Rating agency, economic and other financial considerations

In addition to regulatory capital considerations, any future owner of ARPC will have a view on the amount of equity, debt and insurance capital that the organisation should hold in order to achieve the optimum balance of expected risk and anticipated return. This will be influenced by a number of factors, including:

- Rating agency considerations ie the potential impact on credit ratings and claimspaying ratings of alternative capital structures;
- Economic capital considerations ie the assessment of the relative benefits of enhanced levels of return on equity from having a lower of equity against the increased risks of failure in the event of a major claim;
- Tax considerations ie optimising post tax returns to shareholders; and
- Optical effects arising from the headline returns on capital calculated directly from the company's profit and loss account and balance sheet.

Although there will be some overlap between each of the above considerations, we emphasise that they are all impacted by somewhat different drivers, and that any private sector shareholder will seek to optimise its results taking into account all relevant considerations.

As with regulatory capital requirements, these other financial considerations will be critical in determining the level of profit which a standalone entity would need to earn in order to meet the realistic expectations of its owners. Even in a mutual structure, where the ARPC was owned by underlying insured parties, it will need to generate adequate returns on capital to ensure it remains sustainably financed over the medium to long term.



7. List of figures

List of figu	res	
Figure 1:	Cost of terrorism insurance by risk tier (data for year to June 2013)	9
Figure 2:	Transition to arm's length pricing – simplified statement of comprehensive income	14
Figure 3:	Questions addressed in market soundings	24
Figure 4:	List of stakeholders	24
Figure 5:	Global terrorist attacks 2001 to 2012	
Figure 6:	Top 20 property insurance damage claims	27
Figure 7:	Terrorist Attacks in Australia	28
Figure 8:	Terrorism risk developments	
Figure 9:	Modelling difficulties for terrorism insurance	
Figure 10:	ARPC retrocession programme – key statistics – calendar year	30
Figure 11:	Changes to the US terrorism risk scheme	35
Figure 12:	Definition of eligible insurance contracts	37
Figure 13:	Insurance premiums	38
Figure 14:	Insurance premiums by risk type covered	39
Figure 15:	Cost of terrorism insurance by risk tier	39
Figure 16:	Definition a of terrorist act (s100.1 Criminal Code)	40
Figure 17:	Summary of the changes to the ARPC funding pool over time	43
Figure 18:	Retrocession insurance quotes	44
Figure 19:	Retrocession insurance quotes – detail on mid-range figures	44
Figure 20:	Summary of scope of terrorism insurance schemes in major Western economies	47
Figure 21:	Formation of major schemes	48
Figure 22:	Pool Re premium zones & rates	50
Figure 23:	Gross Written Premiums vs Claims	51
Figure 24:	Pool Re claim history	51
Figure 25:	TRIPRA claim structure	
Figure 26:	Extremus Versicherungs – summary financial information	55
Figure 27:	IMTRIP premiums and claims, in Rupees crores	56
Figure 28:	Transition to arm's length pricing – simplified statement of comprehensive income	61
Figure 29:	Pro forma statement of comprehensive income	74
Figure 30:	Overview of 2014 Retrocession program	77
Figure 31:	Illustrative cost of interest and principal repayments following a claim	79

ANNEX B: FINITY REPORT



15 May 2015



The Department of the Treasury
The Treasury Building
Financial System and Services Division
Langton Crescent
Parkes ACT 2600

Dear Sir/Madam,

Terrorism Insurance Cover for Mixed Use and High-Rise Buildings

We are pleased to enclose our report on terrorism cover availability for mixed use and high-rise residential buildings, and the financial implications if these buildings were included in the Australian Reinsurance Pool Corporation scheme.

We look forward to discussing the report with you and your colleagues.

Yours sincerely

Aaron Cutter

Fellows of the Institute of Actuaries of Australia

Stephen Lee

Terrorism Insurance Cover for Mixed Use and High-Rise Buildings

Part	: I	Executive Summary	4
Part	: II	Detailed Findings	9
1	Int	roduction	9
	1.1	Scope and purpose	9
	1.2		
	1.3	Approach and information used	9
	1.4	Structure of this report	9
2	Ga	p in terrorism insurance coverage	10
	2.1	"Gaps" remain for mixed use and high-rise residential buildings	10
	2.2	Positive signs but no fundamental shift from the commercial insurance markets	11
	2.3	Other considerations	12
	2.4	Potential area for further investigation	12
3	Pre	evious Report found no material change to risk by adding mixed use buildings	13
4	Mix	ked use and high-rise building exposure	14
	4.1	Important note on data	14
	4.2	Profile of mixed use and high-rise building	15
	4.3	Aggregation of risks (Sydney and Melbourne CBDs)	19
	4.4	Buildings under construction and bracket creep	21
5	Fin	ancial impact of including mixed use and high-rise residential buildings into ARPC	23
	5.1	Premiums	23
	5.2	Retrocession	24
	5.3	Australian Government Exposure	24
	5.4	Implications for ARPC in the event of a DTI	26
6	Re	liances and limitations	27
	6.1	Distribution and use	27
	6.2	Data and other information	27
	6.3	Nature of the review	27
Part	: III	Appendices	28
Α	Ou	r approach for this report	28
	A.1	General approach	28
	A.2	Identifying buildings and estimating the sum insured	28
R	Inf	ormation and data used	30



С	Com	panies contacted for this review	31
D	Sydı	ney CBD maps	32
	D.1	Sydney All Residential and Mixed Use Buildings (Buildings Sum Insured)	32
	D.2	Sydney Residential Only Buildings (Buildings Sum Insured)	33
	D.3	Sydney 0%-20% Mixed Use Buildings (Buildings Sum Insured)	34
	D.4	Sydney 20%-50% Mixed Use Buildings (Buildings Sum Insured)	35
E	Deta	iled breakdown for Sydney	36
	E.1	Number of risks	36
	E.2	Estimated sum insured	36
F	Key	risk areas for Sydney	37
G	Melb	ourne CBD maps	38
	G.1	Melbourne All Residential and Mixed Use Buildings (Buildings Sum Insured)	38
	G.2	Melbourne Residential Only Buildings (Buildings Sum Insured)	39
	G.3	Melbourne 0%-20% Mixed Use Buildings (Buildings Sum Insured)	40
	G.4	Melbourne 20%-50% Mixed Use Buildings (Buildings Sum Insured)	41
Н	Deta	iled breakdown for Melbourne	42
	H.1	Number of risks	42
	H.2	Estimated sum insured	42
	Kev	risk areas for Melhourne	43

Part I Executive Summary

1 Introduction and scope

The Department of the Treasury ("The Treasury") has engaged Finity Consulting Pty Limited ("Finity") to ascertain whether a gap in terrorism insurance coverage for mixed use and high-rise residential buildings continues to exist. If such a gap persists we have been asked to estimate the effect of including these buildings into terrorism reinsurance provided by Australian Reinsurance Pool Corporation (ARPC).

The Treasury require this report to consider the need, initial feasibility and the financial and risk impact of extending the cover offered by ARPC to include mixed use buildings and high-rise residential buildings. In broad terms, our report explores:

- (i) Current insurance products and practices of commercial insurance markets, and whether a gap in terrorism cover persists.
- (ii) The effect on ARPC if the scheme was extended to fill the gap (in terms of extra premium collected, additional exposure, change to loss scenarios). Our review focuses on Sydney and Melbourne CBD areas.

We understand that our report may be referred to in Treasury's '2015 Review of the Terrorism Insurance Act 2003' (the '2015 Triennial Review'), which is expected to be provided to the Minister.

Previous Report

Finity was involved in a previous review of mixed use buildings for ARPC in 2010 ('Previous Report'), and a subsequent update letter in 2012 ("Previous Update").

2 The terrorism insurance gap

Figure 1 below shows the current availability of terrorism cover by building type and asset value. There has been no change in the gaps which existed at the time of writing our Previous Report.



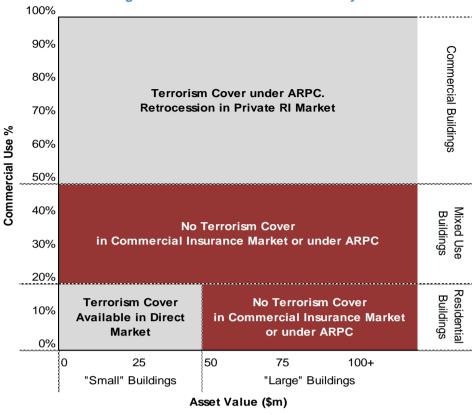


Figure 1 - Terrorism Cover Availability

All buildings with greater than 50% commercial usage, regardless of value, are covered for terrorism risk by ARPC.

Terrorism risk does not completely cover the market for buildings with less than 50% commercial usage. This arises because of the following:

- Coverage excluded by ARPC, as these buildings are "wholly or predominantly used for personal, domestic or household purpose"¹.
- Coverage is also not available from the commercial insurance markets, as private sector insurers generally exclude terrorism risk on these policies. This is in turn because insurers follow reinsurance terms, which exclude coverage for terrorism risk.

The exception is for residential buildings with sums insured under \$50 million. Coverage for these buildings is provided by reinsurers and insurers. Terrorism risk coverage is unavailable for residential buildings with sum insured greater than \$50 million (i.e. what we call "high-rise residential" buildings in this report).

3 Mixed use and high-rise residential buildings exposure

Current exposure

Table 1 shows the estimated number of mixed use and high-rise residential buildings within Sydney and Melbourne Tier A postcodes.

¹ Terrorism Insurance Regulations 2003 (SLI No. 193, 2013), Schedule 1, Paragraph 2(d)(i)



Table 1 – Number of Mixed Use and High-Rise Residential Buildings in Sydney and Melbourne Tier A postcodes

Classification	Estimated Buildings
Mixed Use Buildings ¹ High-Rise Residential ²	51 68
Total in CBD areas	119
Other Tier A postcodes ³	28
Total Tier A	147

Source: CoreLogic and Finity Consulting

The estimated number of buildings covered by ARPC within Sydney and Melbourne Tier A postcodes amounts to around 3,700.

If ARPC covered mixed use buildings we estimated an increase in the number of buildings covered by around 1.5% for Sydney and Melbourne Tier A postcodes. Including high-rise residential buildings as well would increase total insured buildings by a further 2.5%.

Table 2 shows the estimated sum insured associated with mixed use and high-rise residential buildings within Sydney and Melbourne Tier A postcodes.

Table 2 – Sum Insured of Mixed Use and High-Rise Residential Buildings in Sydney and Melbourne Tier A postcodes (by Sum Insured Band)

	Aggregate Sum Insured (\$m)			
Sum Insured Band (\$ millions)	Mixed Use	High-Rise Residential	Combined	
			_	
0 - 10	99		99	
10 - 20	211		211	
20 - 30	75		75	
30 - 50	160		160	
50 - 100	82	3,687	3,769	
100 - 500	1,115	7,100	8,215	
500+	0	3,526	3,526	
Total	1,742	14,314	16,056	
Commercial exposure	146,872	146,872	146,872	
Increased exposure	148,614	161,186	162,928	
Increased exposure (%)	1.2%	9.7%	10.9%	

Source: CoreLogic and Finity Consulting

The total sum insured associated with buildings covered by ARPC within Sydney and Melbourne Tier A postcodes amounts to \$147 billion.



¹ 20% to 50% commercial floor space.

² Less than 20% commercial and sum insured over \$50 million

³ Pyrmont, North Sydney, Southbank and Docklands. Mixed use and high-rise residential buildings combined. Assumed 15% commercial usage.

Including mixed use buildings would increase ARPC's total sum insured by around 1.2%². Adding high-rise residential buildings into the ARPC cover would increase the total sum insured substantially more, at around 9.7%. There are a number of large residential buildings within Tier A postcodes.

Expected growth

Table 3 below shows the projected increase in the number of risks from buildings under construction and the effect of bracket creep (based on 5 years of inflationary increases for building costs) for Sydney (postcode 2000) and Melbourne (postcode 3000).

Table 3 – Construction Activity and Bracket Creep (Sydney and Melbourne CBD only)

Classification	As at 2014	Buildings Under Construction	Impact of Bracket Creep ¹	Projected
Mixed Use Buildings High-Rise Residential	51 68	8 10	n/a 6	59 84
Total CBD area	119	18	6	143

Source: CoreLogic and Finity Consulting

In the CBD areas for Sydney and Melbourne, we estimate there are currently 51 mixed use buildings and 68 high-rise residential buildings which fall within the terrorism insurance gap, or around 119 buildings in total. This is expected to increase by 15% based on buildings that are currently under construction. A further 5% increase is expected between 2014 and 2019 due to sum insured inflation affecting high-rise residential buildings (bracket creep – assumes commercial insurance markets maintain the terrorism exclusion at \$50 million).

4 Financial implications

Inwards premium

We have estimated the inwards premium for ARPC if mixed use and high-rise residential buildings were included in the scheme based on the current exposure. To do this, we assume that mixed use and high-rise residential buildings within Tier A postcodes would attract the same 12% loading as for commercial properties within the same area. The 12% loading is applied to our estimate of the insurance premium for these buildings, which insurers have reported to be around \$0.03 to \$0.06 per \$100 sum insured.

If ARPC includes mixed use and high-rise residential buildings into the scheme, the effect on **total premium collected** from Tier A postcodes Australia-wide³ is estimated to be:

- \$100,000 to \$200,000 per annum for mixed use buildings
- \$700,000 to \$1.4 million per annum for high-rise residential buildings

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Page 7 of 43

¹ Estimated number of buildings which will beach the \$50 million sum insured threshold in the next 5 years due to building cost inflation. We have assumed inflation of 3% per annum.

² In the Previous Report, we estimated the increase in sum insured of including mixed use buildings was 2%. The change is because we have reclassified World Square (Sydney) as a predominantly commercial building at this review, whereas previously it was treated as a mixed use building.

³ Tier A postcodes are 2000, 2009, 2060, 3000, 3005, 3006, 3008, 4000, 5000, 6000, and 6003.

We have not estimated the additional premium from mixed use and high-rise residential buildings outside of the Tier A postcodes. Based on our discussions with the insurance industry, mixed use and high-rise residential buildings are increasingly prevalent in population centres outside of the Tier A postcodes.

Outward retrocessionaire premiums

There may be an increased cost for **ARPC's retrocession program** if mixed use and high-rise residential buildings were included in the scheme. The extent of any increase should be limited as mixed use and high-rise residential buildings do not materially alter maximum loss scenarios and the current soft insurance markets.

Australian Government exposure

ARPC's current retrocession program results in exposure for the Australian Government to some scenarios from including mixed use and high-rise residential buildings. Our Previous Report found that the **Australian Government's exposure** was not materially altered by the inclusion of mixed use buildings (high-rise residential buildings were not considered).

Our view is that including mixed used buildings into the ARPC scheme does not currently change the exposure significantly in the event of a DTI. However, inclusion of high-rise residential buildings will generally increase the Australian Government's exposure and for some key risk locations increase the exposure significantly.

5 Reliances and limitations

This report is subject to reliances and limitations as set out in Section 6.



Part II Detailed Findings

1 Introduction

The Department of the Treasury ("The Treasury") has engaged Finity Consulting Pty Limited ("Finity") to ascertain whether a gap in terrorism insurance coverage for mixed use and high-rise residential buildings continues to exist. If such a gap persists we have been asked to estimate the effect of including these buildings into terrorism reinsurance provided by Australian Reinsurance Pool Corporation (ARPC).

1.1 Scope and purpose

The Treasury require this report to consider the need, initial feasibility and the financial and risk impact of extending the cover offered by ARPC to include mixed use buildings and high-rise residential buildings. In broad terms, our report explores:

- (i) Current insurance products and practices of commercial insurance markets, and whether a gap in terrorism cover persists.
- (ii) The effect on ARPC if the scheme was extended to fill the gap (in terms of extra premium collected, additional exposure, change to loss scenarios). Our review focuses on Sydney and Melbourne CBD areas.

We understand that our report may be referred to in Treasury's '2015 Review of the Terrorism Insurance Act 2003' (the '2015 Triennial Review'), which is expected to be provided to the Minister.

1.2 Previous Report

Finity was involved in a previous review of mixed use buildings for ARPC in 2010 ('Previous Report'), and a subsequent update letter in 2012. A summary of the key findings from the Previous Report and the update letter can be found in Section 3 of this report.

1.3 Approach and information used

The approach we've followed and the information which we've relied on for this report is described in Appendix A and Appendix B respectively.

1.4 Structure of this report

The rest of this report is structured as follows:

Section 2: Description of the gap in Terrorism Insurance coverage

Section 3: Summary of findings from our Previous Report

Section 4: Mixed use and high-rise residential buildings exposures in Sydney and Melbourne CBDs

Section 5: Financial implications if the gaps are absorbed by the ARPC scheme

Section 6: Reliances and limitations to this report

The appendices to this report provide additional detail for the reader.



2 Gap in terrorism insurance coverage

Highlights from this section

- The gap identified in our Previous Report (2010) still exists.
- The gap in terrorism insurance cover generally exists for buildings with less than 50% commercial usage. The exception to this is residential buildings with sum insured less than \$50 million, where insurance cover is available in the private insurance sector.
- There are some areas of the insurance market which offers terrorism risk coverage for buildings that fall within the gap. However, at this stage this is generally on a risk by risk basis. Further investigation on the cost and the extent of availability for this coverage is need.

2.1 "Gaps" remain for mixed use and high-rise residential buildings

Figure 2.1 below shows the current availability of terrorism cover by building type and asset value. The gaps which existed when writing our Previous Report have largely persisted.

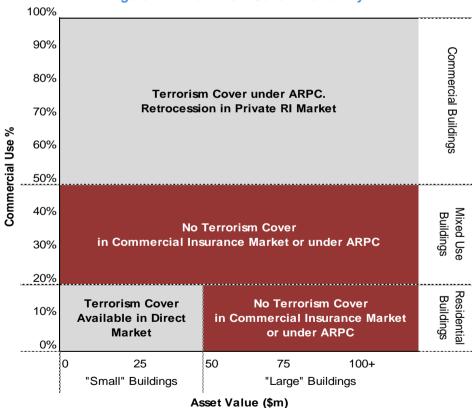


Figure 2.1 - Terrorism Cover Availability

All buildings with greater than 50% commercial usage, regardless of value, are covered for terrorism risk by ARPC.



Terrorism risk is not covered for buildings with less than 50% commercial usage. This arises because of the following:

- Coverage excluded by ARPC, as these buildings are "wholly or predominantly used for personal, domestic or household purpose"⁴.
- Coverage is also not available from the commercial insurance markets, as private sector insurers generally exclude terrorism risk on these policies. This is in turn because insurers follow reinsurance terms, which exclude coverage for terrorism risk.

The exception is for residential buildings with sums insured under \$50 million. Coverage for these buildings is provided by reinsurers and insurers. Terrorism risk coverage is unavailable for residential buildings with sum insured greater than \$50 million (i.e. what we call "high-rise residential" buildings in this report).

We have selected a cut off of 20% commercial as the boundary between mixed use and residential, broadly consistent with market practice of where commercial insurance policies are issued.

In this report, we have also documented results for high-rise residential buildings.

2.2 Positive signs but no fundamental shift from the commercial insurance markets

Finity conducted a number of phone interviews and meetings with insurers concerning the gap in terrorism coverage. Our discussions confirmed that the gap in terrorism coverage is largely unchanged, with the following exceptions:

- Strata Community Insure, a newly established underwriting agency backed by Allianz, offers
 terrorism coverage for certain classes of strata up to \$100 million sum insured. However, Allianz
 manages its exposure in certain geographical areas and may lead to reductions in the availability
 of cover.
- Some insurers have global reinsurance programs, which mean it's possible that terrorism risk
 coverage could be provided for properties sitting in the gap. However, this reinsurance coverage
 does not necessarily flow through to the policy level.
- Some insurers, such as AIG and XL Insurance, offer specific terrorism products which can be purchased on a risk by risk basis.
- Facultative reinsurance for terrorism risks is available on a risk by risk basis.

The current soft insurance markets would support comments that the market for terrorism risk has improved from 2010, and that there is more capacity and at lower premiums.

We have not tested the extent of this underwriting capacity or the affordability of it. At this stage, comments suggest that terrorism cover on risk by risk remains expensive, even after taking into account recent premium reductions. Coverage remains uneconomical in most instances and results in purchasers forgoing coverage for terrorism risk. Furthermore, we would envisage that the availability of coverage would be limited and the price would increase following a terrorist event.

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⁴ Terrorism Insurance Regulations 2003 (SLI No. 193, 2013), Schedule 1, Paragraph 2(d)(i)

A list of insurers contacted can be found in Appendix C.

2.3 Other considerations

Our discussions with industry also identified the following points which may affect The Treasury's considerations regarding mixed use and high-rise residential buildings:

- Bracket creep: The \$50 million sum insured threshold for high-rise residential coverage has remained unchanged for a number of years. This has led to some properties, which were previously insured, to become uninsured for terrorism risk because of inflationary increases in building sum insured. Alternatively, it has led some buildings sum insureds being kept below the \$50 million threshold, potentially meaning that some buildings are underinsured.
- Equity issues: The gap in terrorism cover means that it is possible a mixed-use building will
 receive no insurance protection following a terrorist incident while a nearby commercial building
 would be fully compensated.
- Definition of commercial usage: The definition of "predominantly used for personal, domestic or household purpose" is not clear. Floor space is generally used for the predominance test, though other measures are possible.
- Commercial interests in residential buildings: A not insignificant proportion of residential
 properties in mixed use and high-rise residential buildings are made up by investment properties,
 and therefore there are commercial interests tied up in residential buildings.
- Increasing prevalence of mixed use buildings: New apartment complexes generally include some form of commercial tenancy. The increase in apartments in metropolitan centres will mean that mixed use buildings will become more common.

2.4 Potential area for further investigation

It is beyond the scope of this report to quantify the amount of available capacity for terrorism risk and the price of that coverage which is available on a risk by risk basis. We suggest that The Treasury may wish to investigate the total available capacity for terrorism risk and survey the actual prices quoted for specific buildings.



3 Previous Report found no material change to risk by adding mixed use buildings

For the reader's convenience, we have summarised the key observations from our Previous Report. However, the reader should refer to the complete Previous Report for the complete context of our comments.

Note that our previous report focused primarily on mixed use buildings, and observations below did not include high-rise residential buildings (i.e. buildings with less than 20% commercial usage and with sum insured greater than \$50 million).

Our assessment of the additional exposure represented by inclusion of mixed use buildings (Tier A postcodes only) in the terrorism scheme was:

- The inclusion of mixed use buildings would increase the number of Tier A risks covered by ARPC by around 1.5%.
- Tier A sums insured would increase by around 2% with the inclusion of mixed use buildings.
- The maximum loss scenarios due to geographic risk aggregation are unlikely to increase materially with the inclusion of mixed use buildings.

As a result of the additional exposure if mixed use buildings were included in ARPC, the financial effects on ARPC were estimated as follows:

- The small increase in exposure in Tier A postcodes may result in an increase to ARPC's
 reinsurance premium revenue in the order of \$300,000 to \$400,000 per annum. It is difficult to
 determine the impact by including Tiers B and C postcodes. However, it would be very unlikely
 that the additional premium would approach 2% of the total annual premium pool.
- Retrocession premium may be impacted, although the probable maximum loss is not materially different. We would expect this to be a consideration limiting any increase in premium.
- For similar reasons, we do not expect the inclusion of mixed use buildings in the scheme to materially change the Australian Government's exposure.



4 Mixed use and high-rise building exposure

Highlights from this section

- Including mixed use buildings into the ARPC would increase the number of buildings covered by around 1.5% for Sydney and Melbourne Tier A postcodes. The increase in the total sum insured to ARPC would be around 1.2%. This is lower than our Previous Report because we have reclassified a major building (World Square in Sydney) as predominantly commercial usage, whereas it was previously considered mixed use.
- The number of mixed use buildings in the Sydney and Melbourne CBD areas is expected to increase by 16% based on buildings currently under construction.
 There are currently a number of significant developments underway or planned which include mixed use buildings, most notably in the Sydney development precinct of Darling Square.
- Including high-rise residential buildings into the ARPC would increase the number of buildings by a further 2.5% for Sydney and Melbourne Tier A postcodes, though the increase in the total sum insured is estimated to be substantially more at 9.4%.
- The number of high-rise residential buildings which fall into the terrorism insurance gap is expected to increase by 24% in the Sydney and Melbourne CBD regions. 15% of this growth is due to new construction, while 9% is due to **bracket creep**.
- Inclusion of mixed use buildings does not change ARPC's maximum loss scenarios in Sydney and Melbourne in a material manner. However, the inclusion of high-rise residential buildings will generally increase the exposure for each key risk location and create new risk aggregation areas.

This section summarises the mixed use and high-rise residential buildings exposure in the Sydney and Melbourne CBD areas, including surrounding Tier A postcodes⁵.

Our results have also been documented in the form of risk profile maps of mixed use buildings by sum insured bands and by commercial floor area percentage, which can be found in Appendices D and G.

4.1 Important note on data

4.1.1 Sum insured information

May 2015

Finity estimates the sum insured for each land parcel in the Sydney and Melbourne Tier A areas. This is calibrated to match the total sum insured by postcode provided by ARPC. ARPC receive a compulsory update of sum insured by postcode from insurers each year. This is taken as the "source of truth" for ARPC's aggregate exposure.

⁵ Based on ARPC's definition of Tier A postcodes for the purposes of determining the applicable premium. Tier A postcodes are assumed to be the greatest risk areas, and therefore attract a higher premium rate.





We have received this information in 2006, 2008, and 2014. We observed that total sum insured for the Sydney CBD region has been reducing. This is a result of insurers improving the accuracy of their reported sum insured, and not a genuine reduction in sum insured values.

The total sum insured for this review has been calibrated to the information provided as at 2014. For this reason, comparisons of the sum insured by property to our Previous Report (based on the 2008 aggregate information) are not particularly useful. Instead, we have constructed hindsight estimates of the historical sum insured for each building for comparison purposes. We have used the change in building values to estimate 2010 sum insured.

4.1.2 Reclassification of World Square and Freshwater Place

In this report we have made the following notable reclassifications of land parcel usage:

- World Square (Sydney) has been reclassified from a mixed use building to a commercial building at this review to reflect the CityScope floor space usage for the development as a single building.
- The Freshwater Place (Melbourne) land parcel has been reclassified from a residential building to two separate buildings – one residential and the other commercial.

Further, the World Square development occupies 10 land parcels, which were previously considered as 10 mixed use buildings. Because of the reclassification, our starting estimated number of mixed use buildings as at 2010 has reduced from 23 to 13 (see Section 4.2.1). Our review of the other land parcels suggests this issue is isolated and that land parcels remain a good proxy for building numbers.

4.2 Profile of mixed use and high-rise building

In this section we show the sum insured profile of mixed use and high-rise residential buildings that fall within the insurance gap within Sydney and Melbourne Tier A areas.

4.2.1 Sydney Tier A gap stands at \$11 billion

Number of Buildings

Table 4.1 below shows the number of mixed use and high-rise residential buildings in the Sydney CBD and surrounding Tier A postcodes. We have also shown how this figure has changed since our previous review. Note that the sum insured changes noted in Section 4.1 has required us to restate our estimate of high-rise residential buildings at 2010.



Table 4.1 – Mixed Use and High-Rise Residential Buildings in Sydney (Tier A)

	Estimated Number of Buildings								
Classification	As at 2010	Constructed/	Bracket	As at 2014					
Classification	AS at 2010	Removed	Creep	A5 at 2014					
Mixed Use Buildings ¹	13	0	n/a	13					
High-Rise Residential ²	47	4	11/a 2	53					
Tilgit tiloo ttoolaonilai		•	_						
Total Sydney CBD	60	4	2	66					
Pyrmont ³	6	n/a⁴	1	7					
North Sydney ³	3	n/a⁴	1	4					
Total Sydney (Tier A)	69	4	4	77					

Source: CoreLogic and Finity Consulting

We estimate that there are around 66 buildings in the Sydney CBD area which fall within the terrorism insurance gap – 13 mixed use buildings and 53 high-rise residential buildings with sum insured estimated to exceed \$50 million. This has increased by six buildings from our estimate at 2010, four of which were newly constructed high-rise residential buildings and two buildings because the sum insured increase above \$50 million due to inflation.

A further 11 mixed use and high-rise residential buildings can be found in the Tier A suburbs of Pyrmont and North Sydney, bringing the total to around 77 properties. Note that we did not consider newly constructed buildings for Pyrmont and North Sydney.

Sum Insured Profile of Mixed Use and High-Rise Residential Buildings

Table 4.2 shows the number of mixed use land parcels, split by building usage and the sum insured of the land parcel for Tier A postcodes in Sydney.

Table 4.2 – Number of Mixed Use and High-Rise Residential Buildings by Sum Insured Bands (Sydney Tier A)

	Number	of Buildings	
Sum Insured Band (\$ millions)	Mixed Use	High-Rise Residential	Combined
0 - 10	3		3
10 - 20	1		1
20 - 30	2		2
30 - 50	2		2
50 - 100	0	29	29
100 - 500	5	32	37
500+	0	3	3
Total	13	64	77
Commercial exposure	1,908	1,908	1,908
Increased exposure	1,921	1,972	1,985
Increased exposure (%)	0.7%	3.4%	4.0%

Source: CoreLogic and Finity Consulting



^{1 20%} to 50% commercial floor space.

 $^{^{\}rm 2}$ Less than 20% commercial and sum insured over \$50 million.

³ Mixed use and high-rise residential buildings combined. Assumed 15% commercial usage.

⁴ Information not available for this review.

A version of this table containing further commercial use granularity can be found in Appendix E.

The estimated 13 mixed use buildings within Sydney Tier A postcodes compares with an estimated 1,908 commercial buildings which currently have terrorism insurance coverage through ARPC. This implies a 0.7% increase if mixed use buildings were included in the ARPC scheme. The size of mixed use buildings within Sydney Tier A areas is evenly spread between smaller buildings (sum insured less than \$10 million) to larger ones with sum insured over \$100 million.

We estimated 64 high-rise residential buildings, which would increase total buildings insured by the ARPC by 3.4% if they were included in the scheme.

Table 4.3 shows the total sum insured detail associated with the buildings on mixed use land parcels, split by building usage and sum insured band for Tier A postcodes in Sydney.

Table 4.3 – Total Sum Insured of Mixed Use and High-Rise Residential Buildings by Sum Insured Bands (Sydney Tier A)

by Julii insured Bands (Sydney Her A)									
	Sum In	sured (\$m)							
Sum Insured Band (\$ millions)	Mixed Use	High-Rise Residential	Combined						
0 - 10	8		8						
10 - 20	17		17						
20 - 30	51		51						
30 - 50	81		81						
50 - 100	0	2,117	2,117						
100 - 500	890	5,778	6,668						
500+	0	2,414	2,414						
Total	1,046	10,309	11,356						
Commercial exposure	81,902	81,902	81,902						
Increased exposure	82,948	92,211	93,258						
Increased exposure (%)	1.3%	12.6%	13.9%						

Source: CoreLogic and Finity Consulting

A more detailed version of this table is also in Appendix E.

Including mixed use buildings would increase the total building sum insured for the Sydney Tier A region by 1.3%, or by around \$1.0 billion. This would increase the total building sum insured from \$82 billion to around \$83 billion.

If high-rise residential buildings were also included, the additional increase in sum insured is estimated to be \$10.3billion, or around 12.6 %. This includes a significant contribution from buildings with less than 10% commercial usage (in some cases nil), which we estimate total building values of \$7.5 billion. This is due to a number of large sum insured residential buildings within the Sydney area.

4.2.2 Melbourne Tier A gap stands at \$5 billion

Number of Buildings

Table 4.4 below shows the number of mixed use and high-rise residential buildings in the Melbourne CBD and surrounding Tier A postcodes. We have also shown how this figure has changed since our previous review. Note that the sum insured changes noted in Section 4.1 has required us to restate our estimate of high-rise residential buildings at 2010.



Table 4.4 – Mixed Use and High-Rise Residential Buildings in Melbourne (Tier A)

	Estimated Number of Buildings							
Classification	As at 2010	Constructed/ Removed	Bracket Creep	As at 2014				
Mixed Use Buildings ¹	32	6	n/a	38				
High-Rise Residential ²	9	1	5	15				
Total Melbourne CBD	41	7	5	53				
Southbank ³	7	n/a⁴	3	10				
Docklands ³	7	n/a⁴	0	7				
Total Melbourne (Tier A)	51	7	8	70				

Source: CoreLogic and Finity Consulting

We estimate that the Melbourne CBD area has 53 buildings which fall into the terrorism insurance gap – 38 mixed use buildings and 15 high-rise residential buildings. This has increased by 12 buildings from our estimate at 2010, with 7 newly constructed buildings and 5 high-rise residential due to bracket creep.

A further 17 buildings which fall into the terrorism gap are estimated for the surrounding Tier A postcodes of Southbank and Docklands, an increase from 14 at 2010 due to bracket creep. Note that we did not consider newly constructed for Southbank and Docklands, so we expect there to be a few more buildings which fall into the terrorism insurance gap.

Sum Insured Profile of Mixed Use and High-Rise Residential Buildings

Table 4.5 shows the number of mixed use land parcels, split by building usage and the sum insured of the land parcel for Tier A postcodes in Melbourne.

Table 4.5 – Number of Mixed Use and High-Rise Residential Buildings by Sum Insured Bands (Melbourne Tier A)

	Number		
Sum Insured Band (\$ millions)	Mixed Use	High-Rise Residential	Combined
0 - 10	18		18
10 - 20	14		14
20 - 30	1		1
30 - 50	2		2
50 - 100	1	23	24
100 - 500	2	8	10
500+	0	1	1
Total	38	32	70
Commercial exposure	1,781	1,781	1,781
Increased exposure	1,819	1,813	1,851
Increased exposure (%)	2.1%	1.8%	3.9%

Source: CoreLogic and Finity Consulting



¹ 20% to 50% commercial floor space.

² Less than 20% commercial and sum insured over \$50 million.

³ Mixed use and high-rise residential buildings combined. Assumed 15% commercial usage.

⁴ Information not available for this review.

A version of this table containing further commercial use granularity can be found in Appendix H.

Including mixed use buildings into ARPC would increase the number of buildings covered in Melbourne Tier A areas by 2.1%. The sums insured for mixed use buildings are skewed towards smaller sized buildings. Including high-rise residential buildings would increase the number of buildings covered by ARPC by a further 1.8%.

Table 4.6 shows the total sum insured detail associated with the buildings on mixed use land parcels, split by building usage and sum insured band for Tier A postcodes in Melbourne.

Table 4.6 – Total Sum Insured of Mixed Use and High-Rise Residential Buildings by Sum Insured Bands (Melbourne Tier A)

•	Sum In	sured (\$m)	
Sum Insured Band (\$ millions)	Mixed Use	High-Rise Residential	Combined
(\$)		1100100111101	
0 - 10	91		91
10 - 20	194		194
20 - 30	24		24
30 - 50	79		79
50 - 100	82	1,570	1,652
100 - 500	226	1,322	1,548
500+	0	1,112	1,112
Total	696	4,004	4,700
Commercial exposure	64,970	64,970	64,970
Increased exposure	65,666	68,974	69,670
Increased exposure (%)	1.1%	6.2%	7.2%

Source: CoreLogic and Finity Consulting

A more detailed version of this table is also in Appendix H.

The total sum insured of mixed use and high-rise residential buildings for Melbourne Tier A regions is estimated to be \$4.7 billion. The estimated increase in sum insured of including mixed use and high-rise residential buildings into ARPC is as follows:

- Including mixed use buildings would increase building sum insured by 1.1% (compared with 1.3% for Sydney)
- Including high-rise residential buildings would increase building sum insured by 6.2% (compared with 12.6% for Sydney)

If mixed use and high-rise residential buildings were covered by ARPC, ARPC's exposure in Melbourne would increase from \$65 billion to \$70 billion. However, if the ARPC scheme only included mixed use buildings, then ARPC's exposure for Melbourne would be increase only from \$65 billion to \$66 billion.

4.3 Aggregation of risks (Sydney and Melbourne CBDs)

We have identified some key areas in Sydney and Melbourne where the inclusion of mixed use and highrise residential buildings may significantly increase the aggregate risk in geographically concentrated pockets with the respective Tier A postcodes.

Appendices F and I show the location of the key risk areas selected for Sydney and Melbourne.



4.3.1 Sydney

Table 4.7 shows the increase in sum insured within a 150 metre radius of key locations within Sydney. Note that the following table shows the total building sum insured within the radius, not the estimated losses from a blast attack.

Table 4.7 – Risk Aggregation within Sydney CBD

			Mixed I	Jse Buildin	gs¹	High-Ris	High-Rise Residential ²		
Cluster	Address	Predominantly Commercial	Building Sum Insured	Total	Increase	Building Sum Insured	Total	Increase	
		\$m	\$m	\$m	%	\$m	\$m	%	
1	Bent St / Phillip St	7,644	0	7,644	0%	100	7,744	1%	
2	York St / Jamison St	3,046	0	3,046	0%	211	3,257	7%	
3	George St / Bathurst St	1,888	0	1,888	0%	1,226	3,114	65%	
4	Goulburn St / Pitt St	3,117	48	3,165	2%	900	4,065	29%	
5	Pyrmont St / Jones Bay Rd	2,054	0	2,054	0%	163	2,217	8%	

^{1 20%} to 50% commercial floor space.

From previous work we have completed with ARPC, we identified the corner of Philip St and Bent St to be the area of largest risk aggregation. We have not identified any mixed use buildings within this area. There is one high-rise residential building which falls within this area, which we estimate at \$100 million.

We have estimated the largest increase in sum insured to relate to the buildings surrounding the corner of George St and Bathurst St, where the total building sum insured increases from \$1.9 billion to \$3.1 billion (65% increase), largely from the Regent Pl/Lumiere building. Even with mixed use and high-rise residential buildings included, the total sum insured for this location of \$3.1 billion is still significantly lower than the \$7.7 billion total building sum insured at the corner of Philip St and Bent St.

From a review of the additional risk, and as represented by results documented for selected locations, we have found the inclusion of mixed use buildings does not change ARPC's maximum loss scenarios for Sydney (as per our findings from the Previous Report). However, the inclusion of high-rise residential buildings will increase the exposure for each key risk area of Sydney and for some key risk locations the increase in exposure is significant.

4.3.2 Melbourne

Table 4.8 shows the increase in sum insured within a 150 metre radius of key locations within Melbourne. Note that the following table shows the total building sum insured within the radius, not the estimated losses from a blast attack.

Table 4.8 – Risk Aggregation within Melbourne CBD

			Mixed	Use Buildin	igs¹	High-Rise Residential ²			
Cluster	Address	Predominantly Commercial	Building Sum Insured	Total	Increase	Building Sum Insured	Total	Increase	
		\$m	\$m	\$m	%	\$m	\$m	%	
1	Russell St / Little Collins St	1,661	52	1,713	3%	81	1,794	5%	
2	Queen St / Bourke St	1,272	135	1,407	11%	50	1,456	4%	
3	Block enclosed by Kings Way / Queensbridge St / Whiteman St	3,516	0	3,516	0%	55	3,571	2%	
4	Southbank Bvd / Freshwater PI	732	0	732	0%	1,612	2,345	220%	

¹ 20% to 50% commercial floor space.



² Less than 20% commercial and sum insured over \$50 million.

² Less than 20% commercial and sum insured over \$50 million.

Key buildings in Melbourne are more evenly spaced across the CBD area, resulting in lower risk aggregation compared with Sydney. Even with the inclusion of mixed use buildings, the maximum loss scenarios for Melbourne do not change materially and are not expected to reach those in Sydney.

If high-rise residential buildings are included, the biggest increase we observe is at the corner of Southbank Boulevard and Freshwater Place, with the total building sum insured increasing from \$0.7 billion to \$2.3 billion as a result of two large residential developments.

From the locations we selected, we have not found that the inclusion of mixed use buildings changes ARPC's maximum loss scenarios across Melbourne in a material manner. However, the inclusion of high-rise residential buildings will generally increase the exposure for each key risk location and for some key risk locations the increase in exposure is significant (similar to Sydney).

4.4 Buildings under construction and bracket creep

Table 4.9 below shows the projected increase in the number of risks from buildings under construction and the effect of bracket creep (based on 5 years of inflationary increases for building costs). Note that we have only shown the CBD regions for each of Sydney (postcode 2000) and Melbourne (postcode 3000).

Table 4.9 - Construction Activity and Bracket Creep

Classification	As at 2014	Buildings Under	Impact of Bracket	Projected
		Construction	Creep ³	
Sydney CBD (Postcode 2000)				
Mixed Use Buildings ¹	13	4	n/a	17
High-Rise Residential ²	53	1	4	58
Total Sydney CBD	66	5	4	75
Melbourne CBD (Postcode 300	0)			
Mixed Use Buildings ¹	38	4	n/a	42
High-Rise Residential ²	15	9	2	26
Total Melbourne CBD	53	13	2	68
Total Sydney and Melbourne	119	18	6	143

Source: CoreLogic and Finity Consulting

In the CBD areas for Sydney and Melbourne, we estimate there are currently 51 mixed use buildings (13 in Sydney and 38 in Melbourne) and 68 high-rise residential buildings (53 in Sydney and 15 in Melbourne) which fall within the terrorism insurance gap, or around 119 buildings in total. This is expected to increase by 18 (to 137 buildings) based on buildings that are currently under construction. A further 6 high-rise residential buildings (to a total of 143 buildings) are expected to fall within the gap due to sum insured inflation (i.e. bracket creep).

Of particular note are a number of developments under construction or being planned, which potentially lead to new risk aggregation locations:



¹ 20% to 50% commercial floor space.

² Less than 20% commercial and sum insured over \$50 million.

³ Estimated number of buildings which will beach the \$50 million sum insured threshold in the next 5 years due to building cost inflation. We have assumed inflation of 3% per annum.

- Barangaroo precinct: The Barangaroo precinct (a \$6 billion project) will comprise a mixture of
 commercial development, residential development and parkland. The precinct is a major Sydney
 CBD development. We expect that this development will include mixed use and high-rise
 residential buildings which fall into the current terrorism insurance gap.
- Darling Square precinct: Seven towers to be built at the site of the current Sydney Entertainment
 Centre which will include 1,400 apartments, 24,000 sqm of commercial office space, and 7,000
 sqm of retail.
- Greenland Centre Sydney: This 240 metres, 60 storey mixed use development is expected to be
 the highest residential building in Sydney. The development is estimated to cost \$600 million and
 comprise 400 apartments and a hotel.

Further, strata unit underwriters we spoke to as part of this review have highlighted the increasing number of "lifestyle" apartments with attached commercial tenancies outside of the main CBD areas. These buildings are generally centralised around transport hubs. We have not quantified the number or size of these buildings, though the implication is that mixed use buildings are becoming more prevalent.



5 Financial impact of including mixed use and high-rise residential buildings into ARPC

Highlights from this section

- ARPC is estimated to collect \$100,000 to \$200,000 per annum more premium from Tier A postcodes Australia-wide if mixed use buildings were included in the scheme
- If high-rise residential buildings were included in the scheme, ARPC is estimated to collect \$700,000 to \$1.4 million per annum additional premium from Tier A postcodes Australia-wide.
- Total additional premium if both mixed use and high-rise residential buildings were included in ARPC would be between \$0.8 million to \$1.6 million per annum.
- There may be an impact on ARPC's retrocession program if mixed use and high-rise residential buildings were included in the scheme. The extent of any increase should be limited as mixed use and high-rise residential buildings do not materially alter maximum loss scenarios. We also note that current soft insurance markets will assist to keep retrocession costs down.
- Our Previous Report found that the Australian Government's exposure was not materially altered by the inclusion of mixed use buildings. Due to changes in ARPC's retrocession program at this review, including mixed use and high-rise residential buildings will mean that the Australian Government will be exposed to some scenarios which previously would be paid fully by ARPC and reinsurers.
- While there is a potential increase in the Australian Government's exposure, our view is that including mixed used buildings into the ARPC scheme does not currently change the exposure significantly in the event of a DTI as the location of these buildings are generally not in the vicinity of high loss areas. However, inclusion of high-rise residential will generally increase the Australian Government's exposure and for some key risk locations increase the exposure significantly.

5.1 Premiums

We have estimated the inwards premium for ARPC if mixed use and high-rise residential buildings were included in the scheme based on the current exposure. To do this, we assume that mixed use and high-rise residential buildings within Tier A postcodes would attract the same 12% loading as for commercial properties within the same area. The 12% loading is applied to our estimate of the insurance premium for these buildings, which insurers have reported to be typically between \$0.03 to \$0.06 per \$100 sum insured, though a wide range would exists on a building by building basis. This compares to assumed rates of \$0.05 to \$0.075 per \$100 sum insured in our Previous Report, which reflects the continued soft commercial insurance markets over this time.

Table 5.1 shows our estimate of the additional premium collected by ARPC by including mixed use and high-rise residential buildings into the scheme.



Table 5.1 - Estimated Premium Collected by ARPC

	Commercial	Mixed Use	Buildings	Estimated	Premium ¹	High-Rise I	Residential	Estimated	l Premium ¹
Tier A Area	BSI	Proportion	BSI	Low	High	Proportion	BSI	Low	High
	\$m		\$m	\$'000	\$'000		\$m	\$'000	\$'000
Sydney	81,902	1.28%	1,046	38	75	12.59%	10,309	371	742
Melbourne	64,970	1.07%	696	25	50	6.16%	4,004	144	288
Brisbane	27,831	1.20%	334	12	24	9.00%	2,505	90	180
Adelaide	15,409	1.20%	185	7	13	9.00%	1,387	50	100
Perth	21,289	1.20%	255	9	18	9.00%	1,916	69	138
Total	211,401	1.19%	2,516	91	181	9.52%	20,121	724	1,449

¹ Assuming 12% loading for Tier A postcodes apply to mixed use and high-rise residential buildings, and average premium rates of \$0.03 (low estimate) and \$0.06 (high estimate) per \$100 sum insured apply to these buildings.

Assuming that Tier A mixed use and high-rise residential buildings attract the same 12% loading as commercial Tier A Buildings, ARPC would expect to collect an additional \$100,000 to \$200,000 of premium per annum of premium if mixed use buildings were included in the scheme. Note that this estimate is lower than our Previous Report as insurers have reported reduced premium rates.

If high-rise residential buildings were also included, this would increase the premiums per annum by a further \$700,000 to \$1.4 million.

We have not reviewed the appropriateness of the 12% loading and its application to mixed use and highrise residential buildings. However, based on our understanding that insurers are already issuing commercial policies for mixed use buildings and that high-rise residential buildings are treated similar to comparably sized commercial buildings, then we expect that applying the same loading should be broadly equitable and appropriate.

We have not estimated the additional premium from mixed use and high-rise residential buildings outside of the Tier A postcodes.

5.2 Retrocession

For the 2014 calendar year ARPC had in place \$3.24 billion of cover in excess of \$360 million with retrocessionaires, at a cost of around \$70 million per annum. The inclusion of mixed use buildings only will increase total exposure slightly, which may in turn increase the cost of this cover. However, we expect that cost of cover increase would be more noticeable if high-rise residential buildings were included. High-rise residential buildings account for a greater increase in exposure and increases the maximum probable loss associated with sites around Sydney.

While the inclusion of mixed use and high-rise residential buildings creates a small number of new risk areas, it does not change the likely maximum loss scenarios. We would expect these considerations may mean ARPC's retrocession program may not need to change substantially to accommodate the additional exposure, which will also limit any increase in premium. Further, the current soft insurance markets may also factor to limit the increase to ARPC's total retrocession costs.

5.3 Australian Government Exposure

The Australian Government is currently exposed to Declared Terrorists Incident (DTIs) resulting in insured losses above around \$1.4 billion⁶, though will only pay a small portion of the cost above \$1.4 billion until the insured loss reaches \$3.6 billion (at which point the Australian Government assumes full

⁶ This is based on ARPC's net assets, and assumes that ARPC pays from its available funds prior to drawing from the Commonwealth Guarantee.



Page 24 of 43

payment through the Commonwealth Guarantee provided to ARPC)⁷. This is due to ARPC's retrocession program, which is shown in Figure 5.1.



Figure 5.1 - ARPC's 2014 Retrocession Program

Source: ARPC 2013/14 Annual Report

The Australian Government's exposure level has come down from \$2.9 billion in the Previous Report as ARPC does not retrocede all the risks (i.e. it retains around 10% of the losses between \$360 million and \$3.6 billion).

Our analysis of key risk locations within Sydney and Melbourne identified only two locations in Sydney and one in Melbourne where including mixed use buildings and high-rise residential buildings would increase the exposure materially. However, the impact on the Australian Government exposure is substantially smaller due to the retrocession program.

For example, the total sum insured within 150 metres around George Street and Bathurst Street would increase from \$1.9 billion to \$3.1 billion. The corresponding increase in the Australian Government's exposure will be \$0.1 billion. This is illustrated in Figure 5.2.

⁷ ARPC's retrocession program is not 100% placed. The Commonwealth Guarantee will required to pay around \$230 million of the loss between \$1.2 billion to \$3.6 billion. For losses above \$3.6 billion, the Commonwealth Guarantee will be required to pay the full amount.



Page 25 of 43

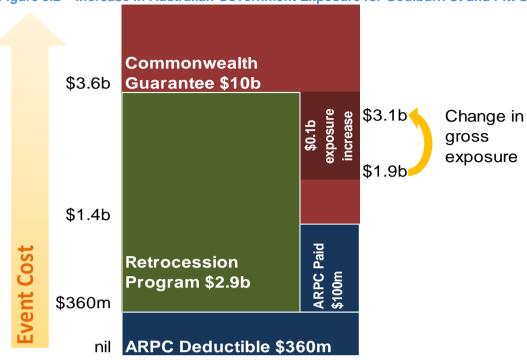


Figure 5.2 - Increase in Australian Government Exposure for Goulburn St and Pitt St

While there is a potential increase in the Australian Government's exposure, our view is that including mixed used buildings into the ARPC scheme does not currently change the exposure significantly in the event of a DTI as the location of mixed use buildings are generally not in the vicinity of high loss areas. However, inclusion of high-rise residential will generally increase the Australian Government's exposure and create some new risk aggregation areas. In particular, there are some notable examples such as the developments precinct of Darling Square in Sydney.

5.4 Implications for ARPC in the event of a DTI

The reinsurance recoveries required to be met by ARPC may increase in the event of a DTI, with the extent of the increase varying by the location of the DTI. For the key locations we have reviewed above, our estimate of the increase can be up to \$1.6 billion. While we may expect a large percentage increase in insured losses in cases where a DTI occurs in an area densely populated with mixed use and high-rise residential buildings, we would not expect a similarly large increase in dollar terms.

In our key location scenarios, the inclusion of mixed use and high-rise residential buildings does not increase ARPC's maximum loss scenario. While we have not tested this for all locations, we believe the key locations identified are a good representation of a "worst case" blast scenario in a Tier A location.

It is worth noting again that including high-rise residential buildings will lead to some new risk aggregation areas. Furthermore there are mixed use buildings currently planned or being constructed which might affected our conclusions in the future.



6 Reliances and limitations

6.1 Distribution and use

This report is being provided for the sole use of The Department of the Treasury ("The Treasury") for the purposes stated above in this report. It is not intended, nor necessarily suitable, for any other purpose. This report should only be relied on by The Treasury for the purpose for which it is intended.

We understand that Treasury may wish to:

- Provide a copy of our report to the Minister as an attachment to Treasury's 2015 Triennial Review.
- As a result of making the 2015 Triennial Review public, release our report into the public domain.

Permission will be granted for such distribution of our report on the condition that the entire report, rather than any excerpt, be distributed. No other distribution, use of or reference to our report (or any part thereof) will be permitted without our prior written consent.

Third parties, whether authorised or not to receive this report, should recognise that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein which would result in the creation of any duty or liability by Finity to the third party.

Any reference to Finity in reference to this analysis in any report, accounts or any other published document or any other verbal report is not authorised without our prior written consent.

Finity has performed the work assigned and has prepared this report in conformity with its intended utilisation by a person technically competent in the areas addressed and for the stated purposes only. Judgements about the conclusions drawn in this report should be made only after considering the report in its entirety, as the conclusions reached by a review of a section or sections on an isolated basis may be incorrect.

The report should be considered as a whole. Members of Finity staff are available to answer any queries, and the reader should seek that advice before drawing conclusions on any issue in doubt.

6.2 Data and other information

We have relied on the accuracy and completeness of all data and other information (qualitative, quantitative, written and verbal) provided to us for the purpose of this report. We have not independently verified or audited the data but we have reviewed it for reasonableness and consistency.

6.3 Nature of the review

The review provides a guide to the effects of extending the terrorism insurance scheme to mixed use and high-rise residential buildings currently assessed as not predominantly for commercial use (and therefore currently not covered). The primary effect will be to increase the sums insured covered by the scheme and to potentially change the extent and location of sights of significant aggregation of risk. There is uncertainty associated with the results of our review. In the context of estimating total insured losses, it is not possible to quantify the uncertainty associated with the additional total insurance losses resulting from inclusion of mixed use buildings. While our review may serve to increase the confidence in understanding the effects of introducing mixed use buildings, how the results of this report are used and communicated should be mindful of the uncertainty in our results.



Part III Appendices

A Our approach for this report

A.1 General approach

Our approach to this report can be summarised as follows:

- 1. Conduct interviews with commercial property insurers and underwriting agencies to ascertain the availability of terrorism insurance for mixed use buildings and high-rise buildings.
- 2. Map each building within the Sydney and Melbourne CBD regions by building usage, and building/contents/business interruption sum insured (i.e. the 'Exposure Information'). This is described further in Appendix A.2 below.
- 3. From the updated Exposure Information, we estimated the financial effects of including mixed use buildings and high-rise buildings in ARPC's reinsurance scheme.

A.2 Identifying buildings and estimating the sum insured

Building identification

Finity engaged RP Data Pty Ltd (trading as CoreLogic) to provide the location and relevant commercial/residential composition splits of buildings within Sydney and Melbourne CBD areas. The information attaching to each building included the number of residential or commercial occupants and in some cases the floor areas of each (Appendix B provides the detail of CoreLogic's information). We have used this information to identify the land parcels containing mixed use buildings and to estimate the proportional split of the building (by floor area) used for commercial and residential purposes.

Previous analysis undertaken for ARPC identified land parcels containing buildings with both commercial and residential occupancy. We have used this previous analysis as a secondary source of information where the CoreLogic information was not available.

Information from our previous analysis was supplemented with an exposure dataset from Geosciences Australia (completed around 2010). Buildings coded as mixed use and residential by Geosciences Australia were compared with our dataset. We reviewed the coding for each of these buildings and revised the data from our previous analysis for differences where material.

We allowed for buildings that have been constructed since the previous analysis was undertaken. Since 2008, around 60 new buildings were constructed in the Sydney and Melbourne CBD regions.

For the majority of these buildings where CoreLogic floor space usage was not available we have assumed 15% commercial usage (overall average), however, we have varied this on a case by case basis for key buildings.

Buildings sum insured

Finity has estimated the sum insured for each location based on building footprint and height. This estimate relies heavily on previous analysis undertaken by Finity for ARPC on commercial buildings sums insured. We refer the reader to previous reports for the detail on estimates of sum insured per volume of building.



The total sum insured by building was calibrated to the aggregate sum insureds by postcode reported by insurers to ARPC in 2014. Note that the aggregate sum insured reported to ARPC does not include mix used and high-rise residential buildings. The reported aggregate sum insured as seen as a "source of truth" as all insurers are required to submit this information to ARPC annually.

For an equivalent floor area, we have assumed that an average Buildings Sum Insured for the residential component is comparable to the average sum insured for commercial risks.



B Information and data used

We received a file from CoreLogic's CityScope database for Sydney and Melbourne containing new properties that had been constructed since 2009 and properties currently under construction. This file also contained:

- Address of the building
- Number of storeys
- Year built
- Number of commercial tenants
- Number of residential units
- Commercial lettable area
- Residential unit area
- Total building area
- Last sale price and date
- Latitude and Longitude of the building

For the properties currently under construction, we received a separate file with a detailed description of the building including area.

Other sources of information we received for this review were:

- Exposure information for Sydney and Melbourne CBD areas from the 3D Blast Model developed by Geosciences Australia.
- Aggregate sum insured information by Tier A postcode for 2014, as reported by insurers to ARPC
- Aggregate sum insured information by Tier A postcode for 2008, as reported by insurers to ARPC (provided previously)

In addition, we have relied on the following information from completed projects by Finity for ARPC:

 Land parcel maps for Tier A areas of Sydney and Melbourne with estimated sum insured and building usage



C Companies contacted for this review

We have contacted the following companies while undertaking this review:

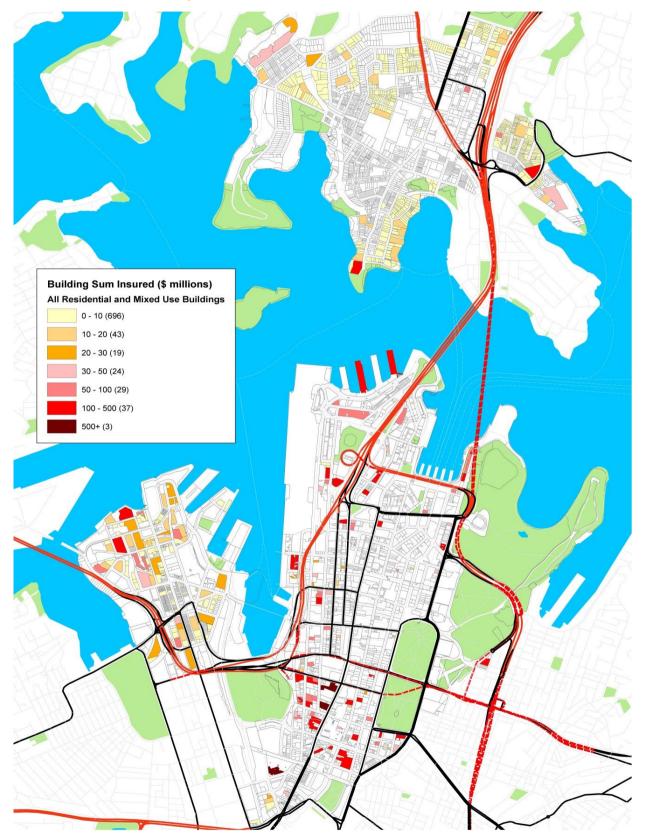
- QBE
- CGU
- Allianz
- XL Insurance
- Berkshire Hathaway
- Swiss Re
- Munich Re
- Guy Carpenter
- AON Benfield
- CHU
- Longitude
- Strata Community Insure

Other insurers were contacted but we were not able to seek comment due time constraints.



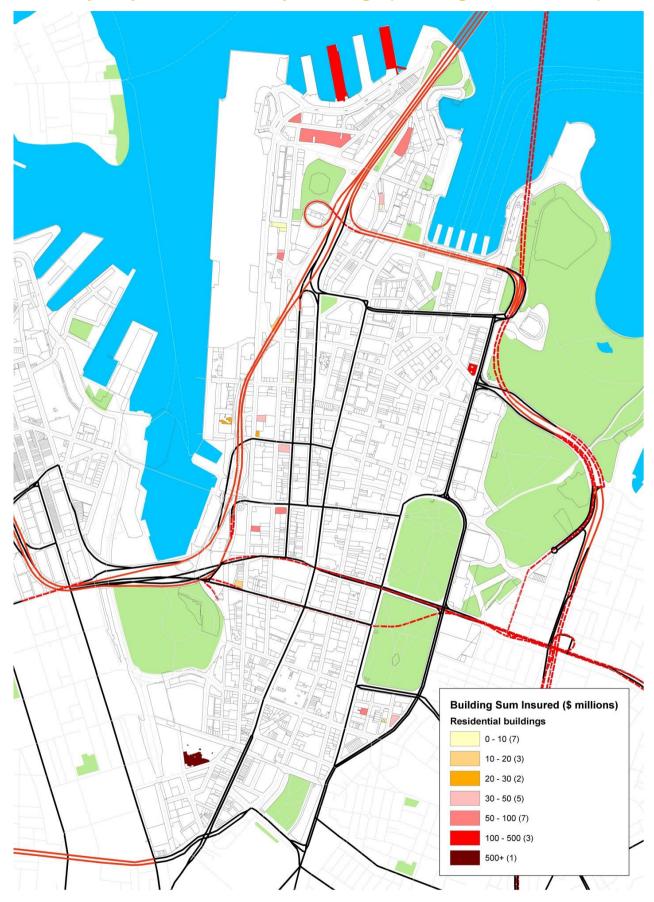
D Sydney CBD maps

D.1 Sydney All Residential and Mixed Use Buildings (Buildings Sum Insured)



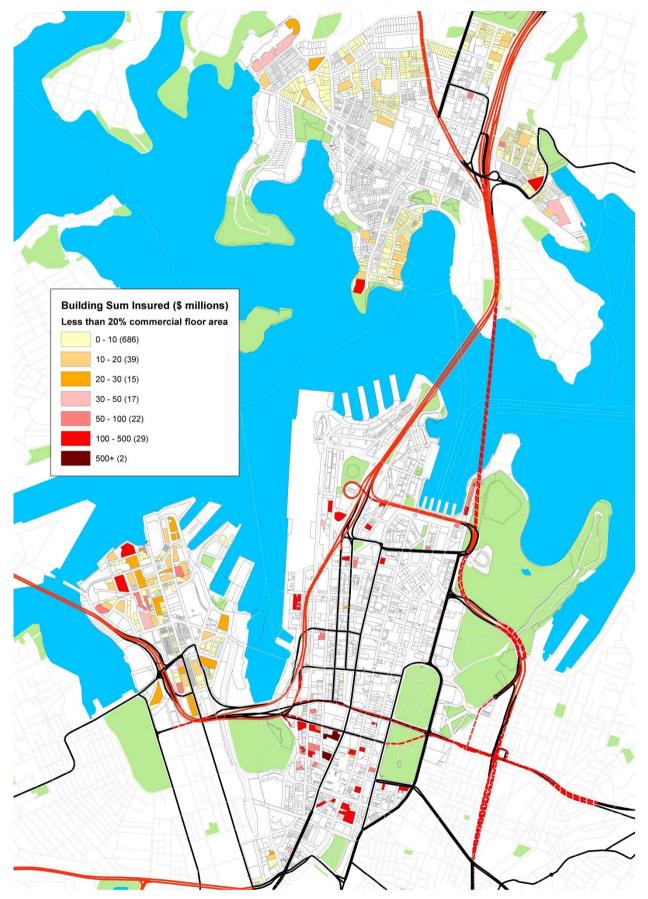


D.2 Sydney Residential Only Buildings (Buildings Sum Insured)





D.3 Sydney 0%-20% Mixed Use Buildings (Buildings Sum Insured)





D.4 Sydney 20%-50% Mixed Use Buildings (Buildings Sum Insured)





Detailed breakdown for Sydney

Number of risks

Sum Insured	Residential	0% - 5%	5% - 10%	10% - 15%	15% - 20%	20% - 30%	30% - 40%	40% - 50%	Other1 (assumed	All	%
(\$ millions)	buildings	Commercial	Commercial	Commercial	Commercial	Commercial	Commercial	Commercial	15%)	All	70
0 - 10		0	3	6	0	1	2	0	677	696	82%
10 - 20	300	3	0	1	2	0	1	0	33	43	5%
20 - 30	200	***	0	1	0	1	1	0	3300	19	2%
30 - 50	500000500	4	3	4	1	0	2	0	500	24	3%
50 - 100		700	6	2	1	0	0	0	(1)(1)(1)(1)(1)(6)(1)	29	3%
100 - 500	3///	44	7	5	2	2	3	0	(1) (1) (1) (1) (A) (1)	37	4%
500+		***	1000 (1000)	0	0	0	0	0	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	3	0%
Total Sydney	28/	27	20	19	6	4	9	0	738	851	100%
Total of interest (shaded)	33	19	34	7	3	4	9	0	10/	77	
Proportion represented	39%	70%	70%	37%	50%	100%	100%			9%	
Commercial exposure	•			•						1,908	
Total exposure (including mi	xed use buildin	as)								1.985	(104%)

Total exposure (including mixed use buildings)

¹ These are land parcels that did not appear in RPData.

Source: CoreLogic and Finity Consulting

E.2 Estimated sum insured

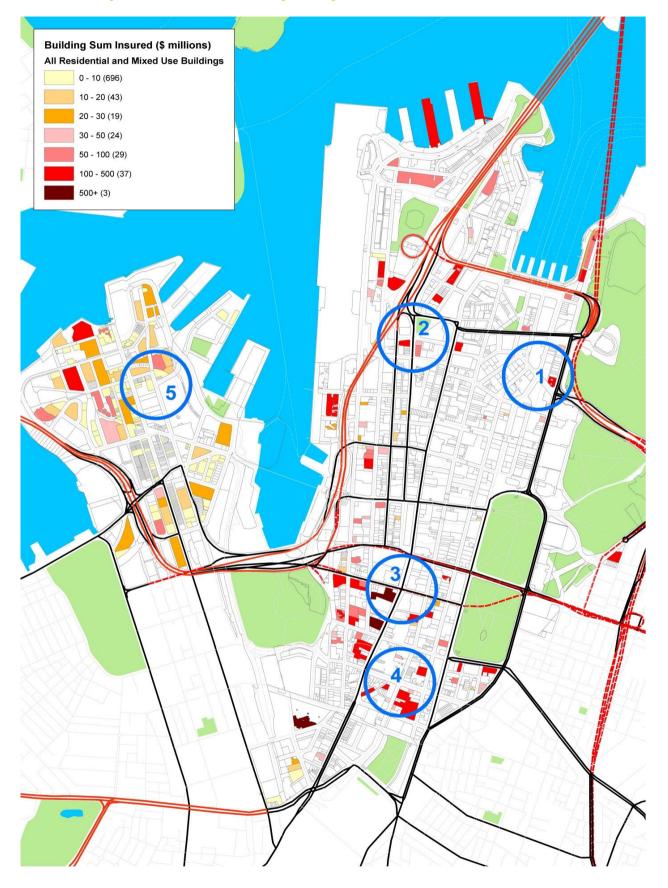
Sum Insured	Residential	0% - 5%	5% - 10%	10% - 15%	15% - 20%	20% - 30%	30% - 40%	40% - 50%	Other1 (assumed	All	%
(\$ millions)	buildings	Commercial	15%)	All	76						
0 - 10	26	0	25	19	0	3	5	0	1,432	1,503	10%
10 - 20	42	45	0	11	23	0	17	0	452	590	4%
20 - 30	47	26 155	0	24	0	23	27	0	316 187	464	3%
30 - 50	219	155	117	153	36	0	81	0	187	949	6%
50 - 100	562	518	417	124	87	0	0	0	409	2,117	14%
100 - 500	662	1,910	1,060	1,026	302	287	603	0	820	6,668	45%
500+	723	679	1,011	0	0	0	0	0	9	2,414	16%
Total Sydney	2,275	3,333	2,630	1,357	448	313	734	0	3,616	14,705	100%
Total of interest (shaded)	1,947	3,107	2,488	1,150	389	313	734	0	1,228	11,356	
Proportion represented	86%	93%	95%	85%	87%	100%	100%			77%	
Commercial exposure										81,902	
Total exposure (including mix	Total exposure (including mixed use buildings)										(114%)

<sup>These are land parcels that did not appear in RPData.

Source: CoreLogic and Finity Consulting</sup>



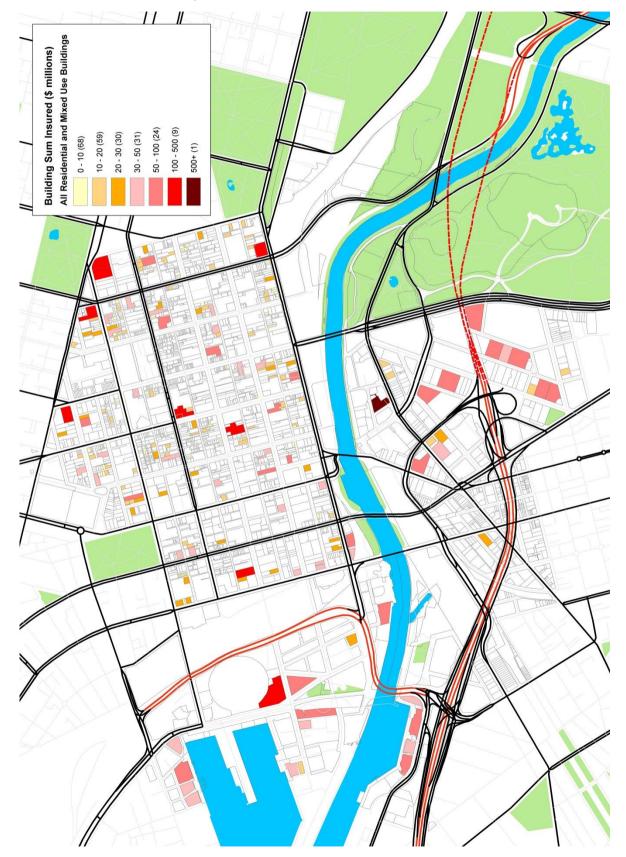
F Key risk areas for Sydney





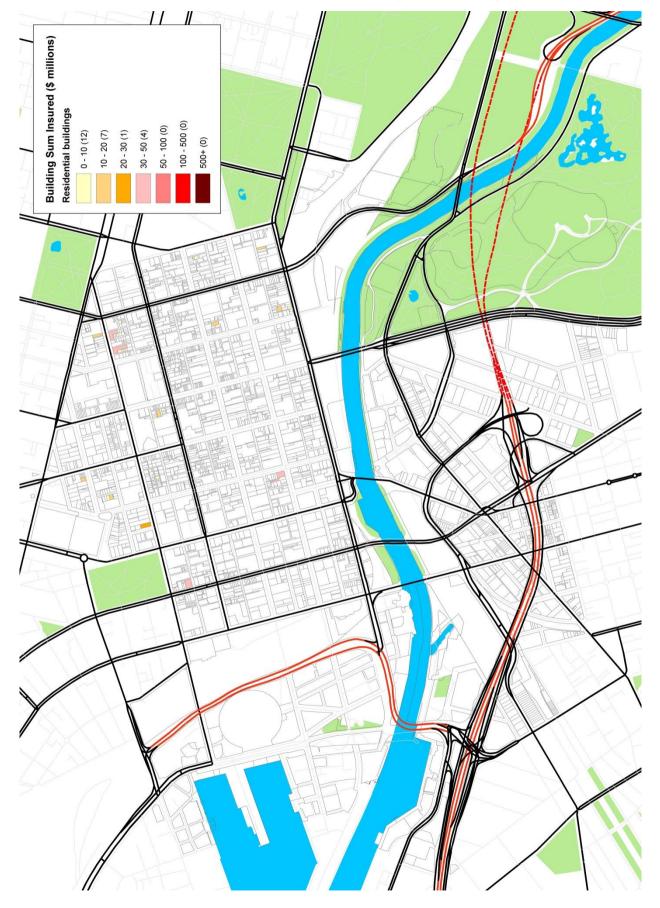
G Melbourne CBD maps

G.1 Melbourne All Residential and Mixed Use Buildings (Buildings Sum Insured)



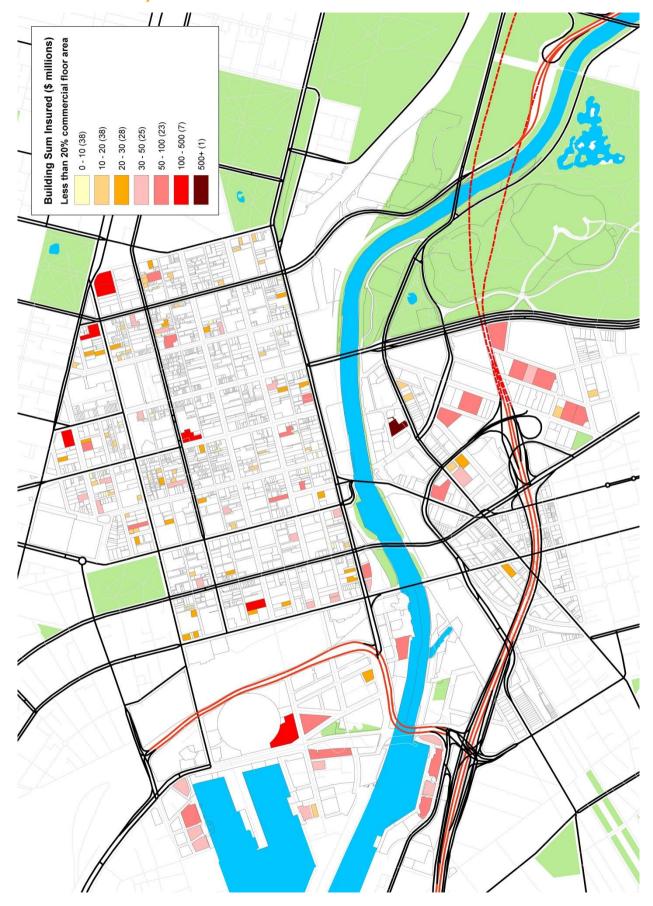


G.2 Melbourne Residential Only Buildings (Buildings Sum Insured)



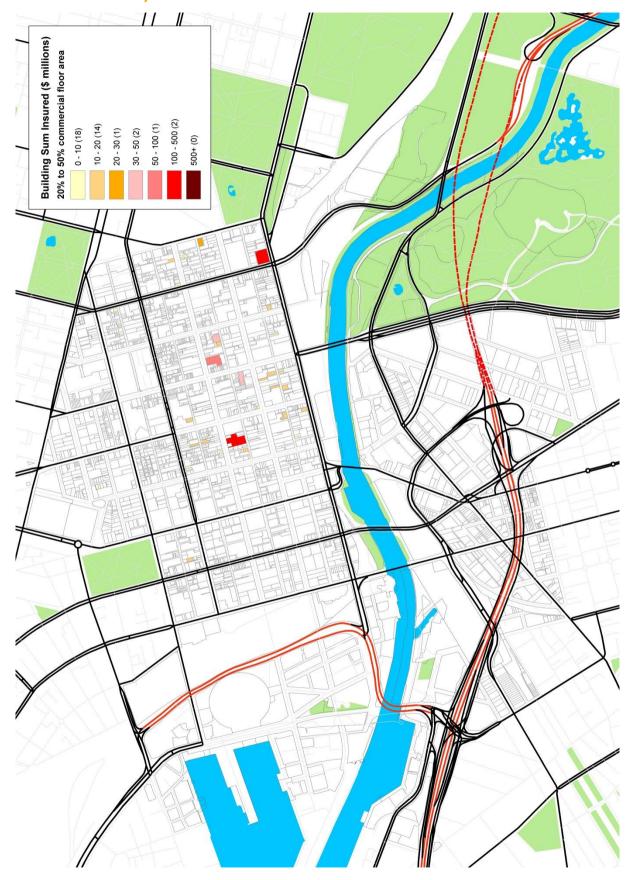


G.3 Melbourne 0%-20% Mixed Use Buildings (Buildings Sum Insured)





G.4 Melbourne 20%-50% Mixed Use Buildings (Buildings Sum Insured)





Detailed breakdown for Melbourne н

Number of risks H.1

Sum Insured	Residential	0% - 5%	5% - 10%	10% - 15%	15% - 20%	20% - 30%	30% - 40%	40% - 50%	Other1 (assumed	All	%
(\$ millions)	buildings	Commercial	Commercial	Commercial	Commercial	Commercial	Commercial	Commercial	15%)	All	76
0 - 10	32	3	4	5	2	6	7	5	24	68	30%
10 - 20	1000000000000000000000000000000000000	9	5	5	3	7	2	5	106	59	26%
20 - 30	**************************************	12	5	3	2	0	0	1	6	30	13%
30 - 50	A	6	3	3	3	1	0	1	10	31	14%
50 - 100	0	3//	3	3	0	0	0	1	900000000000000000000000000000000000000	24	11%
100 - 500	9	3	***********	1	0	0	0	2	300000000003000	10	4%
500+	0	0	6	0	0	0	0	0		1	0%
Total Melbourne	24	36	21	20	10	14	9	15	74	223	100%
Total of interest (shaded)	0	6	4	4	0	14	9	15	18	70	
Proportion represented	0%	17%	19%	20%	0%	100%	100%	100%	24%	31%	
Commercial exposure								1,781			
Total exposure (including mixed use buildings)									1,851	(104%)	

Total exposure (including mixed use buildings)
 These are land parcels that did not appear in RPData.
 Source: CoreLogic and Finity Consulting

Estimated sum insured H.2

Sum Insured	Residential	0% - 5%	5% - 10%	10% - 15%	15% - 20%	20% - 30%	30% - 40%	40% - 50%	Other1 (assumed	All	%
(\$ millions)	buildings	Commercial	15%)	All	70						
"											
0 - 10		24		34	17	44	26	21	80	340	5%
10 - 20	//////////////////////////////////////	112	79	69	42	100	30	64	228	825	11%
20 - 30	2000	290	127	77	42	0	0	24	149 417	736	10%
30 - 50	343	232	109	118	117	37	0	42	417	1,215	16%
50 - 100	0	174	174	209	0	0	0	82	1,013	1,652	22%
100 - 500	0	357	102	107	0	0	0	226	756	1,548	21%
500+	0	0	0	0	0	0	0	0	3,132	1,112	15%
Total Melbourne	332	1,189	624	614	219	181	57	458	3,755	7,428	100%
Total of interest (shaded)	0	531	276	316	0	181	57	458	2,881	4,700	
Proportion represented	9%	45%	44%	51%	0%	100%	100%	100%	77%	63%	
Commercial exposure				•						64,970	
Total exposure (including mixed use buildings)									69,670	(107%)	

These are land parcels that did not appear in RPData.
 Source: CoreLogic and Finity Consulting



I Key risk areas for Melbourne

