Economic Regulation Authority Western Australia

Analysis of home indemnity insurance scheme designs

March 2013

pwc

Bill Scanlan

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Dear Bill

Find attached our report detailing the findings of our technical review of the proposed home indemnity insurance schemes for Western Australia to assist the Economic Regulation Authority with its inquiry.

The report discusses the operation of the scheme design and those in other States.

We have made both a quantitative and qualitative assessment of the current and four proposed scheme designs.

Yours sincerely

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Fellow of the Institute of Actuaries of Australia

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Key findings

About this report

This report has been prepared to assist the Economic Regulation Authority (ERA) with their inquiry into the home indemnity insurance arrangements in Western Australia.

Western Australia currently adopts a privately underwritten mandatory last resort scheme with the State Government providing an incentive to insurers to participate. This report discusses the operation of this scheme design and ones similar to those in operation in other states.

Both a quantitative and qualitative opinion on the current and four proposed scheme designs are expressed. The quantitative assessment is an output of the projection model developed by us for the ERA.

Current Environment

The residential housing market in WA has the following characteristics

Key WA Feature	Impact
Market concentrated in big builders	Significantly greater exposure to major catastrophic builder failure National and international reinsurance market has little to no appetite to offer reinsurance cover WA State Government has to stand in as reinsurer
Builders failures and number of HII claims relatively stable over past ten years or more in spite of a major economic boom and crisis	Market adapts better than others to economic cycles WA market was affected to lesser extent by global financial crisis than other states HII claims experience has been more favourable and less volatile leading to reducing premiums
Private sector insurers have remained in WA while they pulled out of other jurisdictions	Mandatory HII policies are still available and smaller builders have an option of provider State is obliged to provide reinsurance capacity plus other incentives to ensure insurance is offered to larger builders and retain insurers in the market Underwriting practices of insurers may provide greater insight into financial ability of builders to expand / risk of failure
Ongoing regulatory change and sovereign risk	Delays in approval processes and potential increase in management costs Any event that will create cashflow disruption for builders (such as the delay in obtaining approval for new starts or tightening credit market) will increase the potential for builder failure New builder re-registration requirements to start in 2013 have potential to disrupt market

The uneven distribution of risks combined with the long exposure period makes home indemnity insurance in Western Australia an undesirable market to participate in.

The increased concentration of risks in Western Australia will reduce the efficiency of any HII scheme design implemented in the market relative to other states.

First resort versus last resort

Under a last resort scheme, the insured policyholder is only covered in the event that a builder dies, disappears or becomes insolvent during the completion or warranty period. The primary disadvantage of last resort cover is the burden on the policyholder to prove that the builder does not exist and the subsequent lack of protection if they do.

Last resort schemes apply in all jurisdictions of Australia except Queensland which is a first resort scheme. Prior to the collapse of HIH Insurance in 2001 most home indemnity schemes did operate as first resort schemes.

First resort schemes allow insured policyholders to lodge a claim against an active builder who has not fulfilled their contracted or legal obligation. Whilst a first resort scheme will increase the claim frequency, it reduces the burden on the policyholder and leads to faster and less costly resolution of claims.

First resort schemes provide a higher level of protection but will also have a greater claims cost and risk of nuisance claims. The gap in protection between first and last schemes can be reduced by adopting stronger dispute resolution processes between consumers and active builders.

Scheme outcomes

A summary of our analysis of scheme options is set out below.

	Scheme one	Scheme two	Scheme three	Scheme four	Scheme five
Description	Current scheme design. Government provides $80 million excess of $10 million reinsurance cover for 10% of premium pool	Separation of the non-completion (insurer) and warranty (Government) risks.	Establishment of a fidelity fund (separate from Government) to underwrite all risks	Government run LAST resort scheme, with the administrative aspects outsourced to an insurer(s)	Government run FIRST resort scheme, with the administrative aspects outsourced to an insurer(s)
Risk to Government	High Model suggests Government extremely under- compensated for risk exposure	Low Assumes no reinsurance in place Warranty exposure is small and easily manageable if underwritten by Government	Moderate Government may need to provide capital guarantee to fund or 'bail' out in the event of a large claims event. Simplistic modelling suggests a Government guarantee may be feasible.	Moderate High risk exposure but able to set premium to required level	Moderate Highest risk exposure but able to set premium to required level

	Scheme one	Scheme two	Scheme three	Scheme four	Scheme five
Consumer protection	High Insurers and Government financially secure Premium lowest of those modelled due to cheap reinsurance Still subject to last resort value issues	High Insurers and Government financially secure Due to insurer high cost of capital, premium highest of options Still subject to last resort value issues	Moderate Increased risk of failure of fidelity fund from a large claim event Subject to last resort value issues Will depend on body operating fidelity fund but may be more aligned to industry interests than consumer	High Government financially secure Subject to last resort value issues Strong dispute resolution practices may close gap to first resort	Highest Government financially secure Consumer is able to pursue claims against active builders without significant burden.
Risk of market failure	Moderate Scheme failure will occur if insurer(s) pull out of market. To secure new insurers more concessions may be required	Moderate Will be dependent on market appetite to insure non-completion risks	High Market skew does not lend to fidelity fund design. Level of risk will depend on ability to source and secure capital to back largest risk(s) underwritten.	Low We note the potential for operational risk issues in the certification of builders as per the Victorian scheme	Low if fund backed by Government guarantee
Efficiency	Mixed Efficiency of claims and policy administration is high High level of information asymmetry exists between insurers and Government re risk exposure Premium priced below risk exposure.	Low Policyholders will now have to purchase two policies In some instances it will be unclear as to where claim falls. Separation of risks suggests more accurate pricing	Moderate/low Initially likely to be more inefficient as fund develops pricing and claims management expertise. If organisation independent of Government, linkages to builder registration could be limited	High Insurers are likely to be more efficient than Government at administration. However will increase premium cost. Low information asymmetry. Government can use data to identify adverse claim trends and take action to correct	High Greatest level of information available to Government on risks Can use to identify potential builder failures through first resort schemes Operational efficiencies could be achieved through linkages between dispute resolution, consumer information, licensing and the insurance function.

	Scheme one	Scheme two	Scheme three	Scheme four	Scheme five
If proceed	Government needs to obtain a higher level of reinsurance premium and implement regular, pro-forma reporting requirements. Modelling suggests that if the Government was adequately compensated this could be a 45-60% increase on the premium estimated.	Government may still need to provide incentives for insurers to enter the market Change to legislation may be needed to define policy boundaries	Will need regular monitoring in place by an actuary and auditor. Consideration will need to be given to the source and availability of start up capital.	If established the Government fund should be clear on its pricing policy, target capital position and funding level from inception.	Need to be a clear separation of the budget and performance management of the licensing, building inspection, insurance and building work functions to avoid any potential or perceived conflicts of interest.

Contents

1 About this report

Key points of this section

- This report has been prepared to assist the Economic Regulation Authority (ERA) with their inquiry into the home indemnity insurance arrangements in Western Australia
- Both quantitative and qualitative assessments on the current and four proposed scheme designs are provided. The quantitative assessment is an output of the projection model developed by us for the ERA
- No one other than the ERA should rely on this report for any purpose.

1.1 Introduction

On 5 July 2012 the Economic Regulation Authority (ERA) of Western Australia, at the request of the State Treasurer, released a consultation paper to initiate an inquiry into the effectiveness of Western Australia's home indemnity insurance (HII) arrangements. The ERA then released a request for quote for a technical consultant to aid in the inquiry. PwC responded to this request and received a signed letter of engagement in November 2012 to assist in the provision of technical actuarial services for the inquiry.

The aim of this report is to provide both a quantitative and qualitative analysis of the four scheme designs proposed by the ERA as well as the current scheme design. This includes analysing the level of consumer protection and value provided by each design and the allocation of risk between insurers, the Government and the policyholder.

The five scheme designs discussed in this report are:

- Current scheme design. A last resort scheme underwritten by private insurers with some financial guarantees provided by the State Government
- Last resort, privately underwritten scheme where the failure to start / complete and warranty cover are offered as separate products
- A fidelity fund. The scheme would continue to be last resort and the body managing the fidelity fund will be an industry association separate from Government
- Government underwritten last resort scheme. This is similar to the model adopted in Victoria and New South Wales where the Government acts as underwriter but outsources policy and claims management functions to private insurers
- Government underwritten first resort scheme.

In each scenario we have assumed that home indemnity insurance cover will remain mandatory for building works over $20,000.

Accompanying this report is a projection model which enables the ERA to quantitatively test the proposed schemes under different scenarios and compare their outcomes. For a set of pre-defined scenarios the results from the model are also presented in this report to aid the qualitative discussion.

1.2 Limitations

1.2.1 Report and advice

This report has been prepared for the sole use and benefit of ERA. It should not be used or relied upon by any other person for any purpose.

PwC accepts no liability for loss or damage howsoever arising in the use of this document by ERA or third parties for other than the purpose stated above, or for any use of this document, without full understanding of

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This document should be read in its entirety and individual sections of this document could be misleading if considered in isolation from each other.

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You agree not to disclose the report and/or our advice to third parties by any means (including orally or in writing) without our prior written consent. We may, at our discretion, withhold or give our consent subject to conditions, including:

- The report is to be released in its entirety in response to a request, including all appendices and attachments;
- We accept no liability or responsibility to any other person or entity other than ERA in relation to this report; and
- No one other than ERA should rely on this report for any purpose.

It is the responsibility of ERA and third parties to ensure that recipients of copies of, or extracts from, this document understand the reliance on which any conclusions in this document are based.

1.3 Terminology

The following terminology is used in this report

Covered contracts

Covered contracts are home indemnity insurance contracts which were underwritten by a third party insurer but 100% underwritten by the State Government ie there is a full risk transfer to the State Government.

Covered contracts were used to incentivise new insurers to quickly enter the market following the exit by the sole HII insurance provider in June 2010. Under the arrangement the State Government retained 55% of the premium. The covered contract arrangement applied until the insurer completed a full risk assessment of the builder or for 18 months, whichever occurred first[1]. In most cases it extended for the full 18 month period allowable.

[1] We note that insurers were able to apply for an extension of the 18 month period for builders who would not be granted insurance otherwise. We are not aware of any applications for this extension being made.

In reality this would be similar to a broker arrangement with the Government acting as underwriter albeit with greater control on the under-writing and premium setting process.

Excess of loss

Excess of loss is a form of reinsurance where the reinsurer compensates the insurer for any losses incurred over a specific threshold up to a pre-determined limit. Under the Deed of Indemnity the State Government reinsures the insurer for any losses over $10 million up to $90 million.

Excess of loss can be on an event or individual claim basis. For example in workers compensation the reinsurance could relate to a specific claim, however in home insurance it would normally relate to losses incurred from a single event, ie a severe storm.

In home indemnity insurance, the excess of loss cover is event based as it treats each builder failure as a single event, but each builder failure will have multiple non-completion and warranty claims.

Estimated maximum loss (EML)

The estimated maximum loss is the total potential cost incurred from a specific event occurring at a particular time. For an individual builder this would be the cost of completing all current contracts and covering all outstanding warranty claims in the event of the builders collapse.

For the scheme, the total estimated maximum loss is the sum of the EML of all individual builders.

The EML is not adjusted for the probability of the event occurring and is a point in time value only.

Information asymmetry

Information asymmetry occurs where one party has more or better information than the other. This creates an imbalance of power in transactions which can sometimes cause the transactions to go awry. In the worst case, it can result in market failure.

Loss ratio

The loss ratio is the proportion of the premium that is paid (or expected to be paid) towards claims and related expenses.

The gross loss ratio is typically defined as the claims cost incurred (before claims handling expenses) divided by premium received.

The net loss ratio also incorporates the impact of reinsurance cover on the cost of claims incurred.

The combined loss ratio also incorporates the cost of claims handling, reinsurance, commission and policy administration into the numerator.

Risk cost

The risk cost is the expected present value of claims cost of a policy over its lifetime. The risk cost allows for the probability, frequency and severity of a claim(s) occurring.

When discussed here, the risk cost presented is the inflated / discounted value which allows for the time value of money.

Yield curve

A yield curve, in the context of this report, is the shape of the expected forward rates if plotted on a chart. The forward rate in year t is the expected return over the year if money were invested at the start of that year. Forward rates are derived by looking at the average geometric yield on securities of different maturity.

2 Current Environment

Key points of this section

- The residential housing market in Western Australia is highly concentrated among a handful of larger building groups
- New home starts have reduced in WA over the past two years. Forecasts from the Housing Industry Association of Australia sees this trend reversing in the next two years
- HII in WA is a mandatory, last resort scheme. Only two insurers are currently active in the market offering cover for builders and building groups
- Other states in Australia run a number of different types of scheme, including last resort schemes, first resort schemes, and fidelity funds.

2.1 Residential housing industry in Western Australia

The key features of the WA residential housing industry which impact mandatory HII and which create some differentiation with other jurisdictions are shown below:

Key WA Feature	Impact
Market concentrated in big builders	Significantly greater exposure to major catastrophic builder failure National and international reinsurance market has no appetite to offer catastrophe cover WA State Government has to stand in as reinsurer
Builders failures and number of HII claims relatively stable over past ten years or more in spite of a major economic boom and crisis	Market adapts better than others to economic cycles WA market was less affected by the global financial crisis than other states HII claims experience has been more favourable and less volatile leading to reducing premiums
Private sector insurers have remained in WA while they pulled out of other jurisdictions	Mandatory HII policies are still available and smaller builders have a choice of provider State is obliged to provide reinsurance capacity plus other incentives to ensure insurance is offered to larger builders and retain insurers in the market Underwriting practices of insurers may provide greater insight into financial ability of builders to expand / risk of failure
Ongoing regulatory change and sovereign risk	Creates delays in approval processes and potential increase in management costs Any event that will create cashflow disruption for builders (such as delay in obtaining approval for new starts or tightening credit market) will increase the potential for builder failure New builder re-registration requirements to start in 2013 have the potential to disrupt the market

Housing market structure

Distribution

Compared to other jurisdictions, the top five building groups in WA have a far greater market share than in other jurisdictions. The table below shows the proportion of total residential housing starts over 2011/12 from the HIA Top 100 publication[2].

State	Total housing starts	Top 5 builders	*% of total*	Top 20 builders	*% of total*
WA	17,548	8,138	*46.4%*	11,186	*63.7%*
NSW	29,155	3,860	*13.2%*	6,955	*23.9%*
Victoria	49,767	8,957	*18.0%*	16,672	*33.5%*
Queensland	26,311	2,739	*10.4%*	6,081	*23.1%*
SA	8,688	1,780	*20.5%*	2,932	*33.7%*

[2] Note that these numbers include multi-storey (above four storeys) and multi-unit residential dwellings that will not be covered by HII.

The WA residential housing market is heavily concentrated towards the top five building groups compared to other states. Over 2011/12 they had over 2.5 times more housing starts than the next 15 building groups combined.

In the other states, the market is less skewed towards the largest home builders and has a more uniform distribution of builders and therefore risks. The increased concentration of risks in Western Australia will reduce the efficiency of any HII scheme design implemented in the market relative to other states.

Insurance schemes are most efficient when there is a large pool of highly uniform risks which are largely independent of each other. Despite HII policies being issued on a per housing start basis, they are ultimately insuring against builder failure, which is highly concentrated towards a small number of large risks in Western Australia.

The market concentration reduces the appetite of the private sector and reinsurance sector to underwrite this risk.

Builder failures

From discussions with the MBA and HIA, the number of builder failures per year in Western Australia has been relatively stable over the past 12 years, despite the variable economic conditions over that time.

The relatively stable risk of builder failure in Western Australia suggests that the market adapts better than others to economic cycles and hence the home indemnity insurance risk of failure is less volatile and lower. The presence of private sector insurers may have also helped limit the rapid expansion of builders to match the strength of their financial resources resulting in a more stable market.

Another potential factor is that the Western Australian economy did not slow down to the same extent that other Australian state economies did during the global financial crisis.

The national increase in builder failures, particularly from 2008 onwards, was one of the primary reasons cited by Vero and IAG exiting the different home indemnity insurance markets across Australia in 2010.

Whilst in Western Australia HII remains underwritten by the private sector as two insurers entered the market, since mid 2010 Victoria and NSW shifted to a Government underwritten model[3]. Prior to 1 July 2010, NSW and Victoria had similar schemes to WA.

If there was a large builder collapse in WA, that may be the catalyst for the exit of private insurers from the market, even though most of the cost would be borne by the Government's $10 million cap indemnity.

[3] We note that Calliden still participates in the Victorian home indemnity insurance market

2.2 Home indemnity insurance arrangements in Western Australia

Currently in Western Australia home indemnity insurance is mandatory for all single-unit home building work that has a value of greater than $20,000[4]. This is legislated in the *Home Building Contracts Act 1991*.

It is the duty of the registered builder to take out this insurance cover prior to obtaining a building licence, although the cost of this cover is often included in the quoted price of the work to the consumer.

Under the insurance, the consumer having the building work done is covered for the completion of the work, or to rectify any structural defects for up to six years after completion, should the builder die, disappear or become insolvent.

While the contract is still in deposit phase, ie up to the point at which site works commence, a claimant may claim the amount of the deposit paid, generally around 6.5% of the contract value, up to a maximum of $20,000. During construction, and for a period of six years after practical completion, the consumer is covered for the extra costs to complete the work, or to fix any structural defects should the builder die, disappear or become insolvent, up to a maximum amount of $100,000.

The maximum amounts are not automatically indexed and will generally reduce as a percentage of the average contract value over time which increases with inflation. In our model the non-indexed caps lead to a reducing average premium per $100,000 insured over the projection period.

The current scheme has been in existence in Western Australia since 1997 in its mandatory form, and has functioned relatively smoothly, with the exception of two major events caused by exogenous factors to the scheme. From industry discussions there is the opinion that there has been a lower incidence of builder failure rates since making the scheme mandatory, although there remains a divided opinion in the building market as to whether the current arrangements offer the best value for money and protection to consumers.

The two aforementioned events were the collapse of HIH on 15 March 2001, and the unexpected withdrawal of Vero from offering insurance from 1 July 2010 due to significant increased claims experience in the eastern states.

Currently there are two insurers offering HII in WA. To ensure these two insurers remained in the market the WA State Government entered into reinsurance arrangements as defined in the heads of agreement (HOA) contracts. This was commenced in June 2010 and consists of two parts:

1 One hundred percent quota share coverage of all losses incurred under covered contracts. A covered contract is any policy written where the builder transfers its HII eligibility to the agreed party from another insurer, where

   a The transfer occurs after the Commencement Date of the relevant HOA; and

[4] Except if you are an owner builder or building a pergola, fence or swimming pool, to be covered by home indemnity insurance.

b A formal assessment of the builder was not undertaken by the receiving insurer in the process of the transfer.

2 An $80 million (in excess of $10 million) layer of reinsurance for the loss incurred from the death, disappearance or insolvency of a major builder.

Similar provisions to part two were also offered to Vero and IAG when they participated in the market.

The covered contracts arrangement expired on 31 December 2011, unless special approval was granted for specific builders. It is noted that the current agreement under the HOA is due to expire at the end June 2013.

2.3 Home indemnity insurance arrangements in other jurisdictions

The following table details home indemnity insurance arrangements in other states and territories in Australia:

State	Scheme arrangements and legislation	Comments
New South Wales	Since 1 July 2010, a Government run, last resort scheme. Administration and underwriting of policies is carried out by insurers, but the premium and risk are passed to the Government. *Home Building Act 1989 and Home Building Regulation 2004.*	While this is a last resort scheme, it has been highlighted recently that the level of understanding among consumers as to when they can claim is poor and they are of the opinion that they have a higher level of cover. A recent segment on *The 7.30 Report* highlighted this issue. Current reforms to address the adverse experience that resulted in private insurers exiting the market is limiting warranty coverage to structural defects only.
Victoria	Since 31 May 2010, Victoria has operated a Government run, last resort scheme. Administration, policy and claims handling is carried out by an insurer, but the premium and risk are passed to the Government. Premiums are determined based on builder risk and type of building work. Initially this was done by the insurer but we understand the State now sets premiums. A different insurer remains in the market as a private insurer. *Building Act 1993.*	Due to the similarities between this scheme and the New South Wales scheme the same comments apply. In the Victorian scheme, the builder must obtain eligibility for domestic building insurance (as known in Victoria) prior to obtaining builder registration. This highlights a potential duplication in the WA scheme where both the insurer and the Building Commission assess the financial position of the builder. It could be argued that the insurer has a greater vested financial interest in determining the financial viability of the builder relative to the licensing board. The Victorian Ombudsman recently identified several issues in the operation and management of the Building Authority. None of the Ombudsman's recommendations related to the insurance cover provided.
Queensland	A Government run, first resort scheme. The Government currently issues builder licences,	As a first resort scheme this is seen to offer the greatest level of protection for consumers. Of the

State	Scheme arrangements and legislation	Comments
	issues HII contracts based on gazetted rates, and assess and process the claims arising under the scheme. Insurance premiums are not risk rated and are based on dollar insured only. *Queensland Building Services Authority Act 1991.*	various jurisdictions it has the lowest minimum amount for which work must be insured ($3,300). However a recent report from a Government committee into the Building Services Authority found a number of issues arising in the scheme, the most notable of which was a perceived conflict of interest. The report suggested that the insurance, licensing and dispute resolutions functions of the Queensland Building Services Authority be separated and administratively firewalled from each other to eliminate the potential conflict of interest emerging. It also recommended that the Authority widen the range of insurance products available to consumers to cover a wider range of building works and cover levels.
Australian Capital Territory	A fidelity fund, which may be run by any approved fidelity fund scheme. Currently one is operated by the Master Builders Association (MBA). Builders can also arrange insurance through the Housing Industry Association who operates a national brokerage with an insurer as the underwriter. *Building Act 1972.*	As per Victoria eligibility for insurance is required for builder registration. The Housing Industry Association operates a separate long established and prominent brokerage for home indemnity insurance in ACT, Western Australia and other States which allow private sector underwriters.
Tasmania	This is a privately underwritten last resort scheme. Participation in the scheme became voluntary from 1 July 2008. *Housing Indemnity Act 1992.*	We understand that there is now extremely limited private market participation in the Tasmanian builders warranty insurance market.
South Australia	Privately underwritten, last resort scheme. *Building Work Contractors Act 1995*	As per WA, there are only two insurers operating in the South Australia market.
Northern Territory	From 1 January 2013 the NT will operate under a fidelity fund arrangement underwritten by the NT Masters Builders Association. The insurance coverage will be brought more in line with other states. *This is covered in the Building Amendment (Residential building consumer protection) bill 2011, which amends the Building Act.*	Builder registration requires builders to maintain $50,000 in net assets. Whilst this may be suitable for claims against small builders, the reserve amount may be inadequate for larger builders. The legislation to be enacted from 1 January 2013 includes dispute resolution powers to close the gap between first and last resort cover.

3 First and last resort

Key points of this section

- Discusses the differences between first and last resort schemes. How they differ in the level of consumer protection provided resulting in different advantages and disadvantages to consumers, private insurers and the Government
- Last resort schemes apply in all jurisdictions of Australia except Queensland which is first resort. The primary disadvantage of last resort cover is the burden on the policyholder to prove that the builder does not exist and the subsequent lack of protection if the builder still exists
- First resort schemes provide a higher level of protection but will also have a greater claims cost and risk of nuisance claims. The gap in protection between first and last schemes can be reduced using stronger dispute resolution processes between consumers and active builders.

3.1 Last resort

In every jurisdiction in Australia except Queensland home indemnity schemes provide last resort insurance cover. While in Queensland a first resort scheme is run.

Under these two schemes there are differences in the entitlements of the consumer, and therefore different advantages or disadvantages for the stakeholders ie the consumer, an active insurer or the Government. The primary difference between these two types of insurance cover is at what point the policyholder is entitled to trigger their insurance cover.

In a last resort scheme:

- The consumer can only claim if they can prove the death, disappearance or insolvency of the builder.

  As a result there is a reduced risk of a claim arising for the insurer or the Government due to the limited scope of events under which an individual can claim and the emphasis on the consumer proving the death, disappearance or insolvency of a builder.

- A reduced level of consumer protection exists in instances where a builder has not completed work or carried out faulty work and they refuse to complete the project or fix any defects to a satisfactory level.

  If the builder is still active, the policyholder cannot lodge a claim under the last resort scheme. As a result the policyholder can incur substantial legal costs and delays in obtaining damages from the builder if they decide to pursue the claim.

  In some instances, the legal costs can exceed the damages eventually awarded. If the builder becomes insolvent following the initial damages claim, the policyholder will be able to claim under their home indemnity insurance policy but will not be reimbursed for any legal costs awarded.

  Even if the builder becomes inactive, the policyholder may not be able to lodge a claim, if the builder can be found and never technically became insolvent. In these situations the policyholder's only option may be to commence legal action.

- A last resort scheme can reduce the incidence of nuisance claims, where the individual has not attempted to follow up the builder and/or is not satisfied with the builders work despite being to scope and/or structurally sound.

- As noted earlier, the scheme can be run under several different models.

Last resort schemes have been labelled 'junk' by several consumer bodies due to the limited ability of the policyholder to claim and the cost of pursuing a claim made against a builder who is still financially viable.

Stronger dispute resolution panels within the relevant builder licensing authority could reduce this burden, particularly if such panels had the legal power to directat fault builders to perform the required work or provide compensation to the home owner.

The concerns around the cost of proving insolvency do not apply in the case of a medium to large builder failure as the insolvency quickly becomes public knowledge eg Beechwood in NSW.

Prior to the collapse of HIH, the scheme design in most jurisdictions including Western Australia was first resort. To ensure continuance of the provision of the mandatory insurance in the marketplace, state Governments altered the applicable legislation to make the schemes last resort and in some jurisdictions offered a financial guarantee to insurers.

The reduced claim frequency may make the scheme more likely to retain insurers in the market than a first resort scheme.

3.2 First resort

Under a first resort scheme:

- A consumer can make a claim of incomplete or faulty work against a builder without having to prove their death, disappearance or insolvency.

  The wider scope will result in a greater number of claims being made. This may include nuisance claims where a consumer has not tried contacting the builder.

  It is likely that the average claim size will be smaller under this scheme, as claims can be notified and processed quicker (ie do not wait on the outcome of court proceedings) and there will be greater opportunity for the underwriter to recover costs from the builder in question.

- It provides a higher level of consumer protection as the incomplete or faulty work may be reported and claimed against an active builder.

  Unlike under a last resort scheme the consumer is not required to pursue independent legal action against active builders.

- The greater frequency of incident reporting will generate more data to identify less efficient and higher defect rate builders.

  In a privately underwritten scheme, the central builders registration board should develop pro-forma reporting requirements to ensure that a complete view of the scheme can be obtained.

  This is also applicable to last resort schemes.

- Whilst currently the only example of a first resort scheme in Australia is Government underwritten there is the potential for the scheme to be privately underwritten. Prior to the collapse of HIH, the first resort schemes in most states were privately underwritten.

  To ensure efficiency there will need to be links to the scheme with the builder registration board to ensure complaints (and resultant action) are centrally recorded and tracked. This will then reduce the ability of builders to insure with multiple insurers, re-register under a different trading name following complaints, and can be used to place licensing/trading restrictions on the builder.

- Due to the wider scope of claim events, it is likely that the average premium will be higher than that of a policy offered under a last resort scheme with a similar design.

However first resort cover does not necessarily place a significant additional burden on the policyholder. Cover provided by the Queensland Building Services Authority is equal to 1% of the cost of the proposed building works.

We note that this is significantly more than HII premiums in WA which in most cases is less than 0.5% of the total building cost.

We note that in Western Australia there are dispute resolution mechanisms in place that do provide some protection to consumers in situations where the builder is still trading and available. In combination with the last resort cover available this does equate to an informal facsimile of first resort cover.

4 Scheme one: Current Scheme Design

Key points of this section

- Explores the current scheme design which is a privately underwritten last resort scheme with the State Government acting as reinsurer for per builder claim event exposures over $10 million (up to $80 million per loss).
- Consumer protection is high as insurers are heavily regulated and Government indemnity reduces their exposure to catastrophic claim events. As reinsurance is not risk-rated, there is increased affordability with lowest national average premium.
- Will still have consumer protection issues against active builders who do not fulfil their legislated obligations.
- Primary risks to scheme are the exit from market of insurers, the low reinsurance premium collected by the Government and the information asymmetry that currently exists between insurers and the Government.
- Whilst retaining only 10% of the premium, the model estimates that the State Government holds 55% of the risk due to the market skew. There is a large downside risk potential to the State Government from a large claims event. The downside risk to insurers is limited.
- If the current scheme is to continue the Government should take steps to reduce the level of information asymmetry and increase the level of compensation it is receiving for the reinsurance cover provided.

4.1 Summary of scheme design

Aspect	Rating
Risk undertaken by State Government	Government is exposed to the Scheme in several different ways: - Excess of loss reinsurance arrangement, $80 million in excess of $10 million. The reinsurance arrangement means that there is a transfer of the largest risk to the State Government. Given a current lack of transparency in the system, it is also unclear whether the reinsurance provided (and as a result the insurance contracts) is properly priced - Covered contracts arrangements. The State Government is effectively exposed to 18 months of HII business for only 55% of the premium from July 2010 to December 2011 (though in hindsight this is equivalent to a State underwritten scheme with outsourced claims and premium functions but without control over pricing and at a much higher cost to Government). This exposure will continue until December 2017 plus construction completion time of the last covered contract - Indemnity provided to builders during the transition to new Building Act. We note that this is not directly related to the home indemnity insurance scheme Under the excess of loss reinsurance arrangement the State takes on the largest exposure. The $80 million cover is provided on a per builder basis, and does not represent a total exposure if multiple builders failed simultaneously. The premium received for this reinsurance is potentially significantly less than the commercial rate. The indemnity 'reinsurance' premium is set as a percentage of the total premium pool, rather than rates on the risk exposure.
Level of consumer protection	Protection against insurer failure is high as the insurance is classed and regulated as general insurance by APRA. As such it is very probable that the insurers will have and/or have access to sufficient capital to cover consumer claims to the point the Government's indemnity takes over. Last resort insurance protection offers lower benefit coverage and level of consumer protection than first resort. Consumers have limited protection against builders who are still active. Premium may rise if first resort used depending on offset from better intervention control.
Risk of scheme failure	Low/moderate. Scheme failure will only occur if another private insurer pulls out of the market. To secure new insurers, the Government will have to make additional concessions and take on more of the HII risk.
Premium levels	It is difficult to determine the suitability of the premium level as: - It is privately underwritten, so will contain a profit margin. However we are limited in the ability to determine what the target loss ratio is for this product. - If the cost of the reinsurance offered by the State Government is significantly different to the commercial rate this may distort the premium level.
Efficiency	The Scheme is unlikely to be efficient given the high level of information asymmetry regarding the level of actual risk between the insurer, consumer and government. The duopoly of insurers in the market and mandatory nature of the scheme also do not typically lend to efficient market pricing. Inefficiencies also arise from the burden placed on the policyholder to prove the builder is inactive, or if active the action required by the policyholder to get them to do the work. This inefficiency is reduced where the Builder Registration Board has powers to act on complaints against licensed builders. The scheme is efficient in that private insurers are well placed to do risk-rating, premium collection and claims management.

4.2 Discussion

Asymmetry of information

An asymmetry of information exists between the State Government and insurers regarding the actual risk of builder failure. It will also exist to some extent between the insurers and the builders, the insurers will have attempted to minimise it by requesting financial statements and cashflow projections from the builders they insure to risk rate them and set a maximum allowable annual turnover that they will insure.

However as this information has not been passed to the State Government this will impact any analysis conducted by the Government in determining if is being adequately compensated for the risk it reinsures.

The State Government is hampered in obtaining this data itself as the largest residential building groups in Western Australia are private entities and are not required to publish detailed financial statements.

A lack of transparency also exists regarding the profitability of the product for insurers and the claims experience for those builders who fall under the $10 million cap and are not on a covered contract. Regular data collection by the State Government regarding the premium levels and claim amounts would assist in estimating the gross loss ratio of the product.

To reduce the level of information asymmetry the State Government should ensure that detailed contract level data is received on a regular (ie quarterly) basis. The policy level data provided should be reconcilable with data provided in previous periods. For example across quarters the State Government should be able to identify:

- If the contract is still active
- If the exposure period has changed (ie in deposit, non-completion, warranty)
- Movement in the value of the underlying building contract
- Any claims lodged against the contract, payments made to date and estimate of payments outstanding.

A separate dataset outlining the current risk category and maximum allowable turnover for each individual builder should also be provided on a regular basis. Where a building company operates under several different trading names, the overarching building company should be the primary identifier for each contract.

The State Government should ensure that it is informed about:

- Changes to premium rates
- Latest catastrophic risk management plan
- Any builders who have been denied insurance cover
- Any claims made with respect to covered contracts (ie Government exposure) or excess of loss contracts so that the State Government can commence proper assessment of its risks and potential claim frequency.

Using this data the State Government should ensure the premium charged and any risk sharing agreements in place are reviewed on an annual basis so that they reflect changes in the residential housing industry in WA since their commencement.

Linkages to builder registration

Currently there are no explicit linkages between the insurance, builder registration / licensing and consumer protection mechanisms. This is improving and we are aware that the Building Commission has set up a disputes register which will assist with this linkage.

Insurers are now notified in the event that the builder is not found following a consumer complaint.

The disputes register will also assist consumers pursue action against active builders who completed work to an unsatisfactory level.

Limited competition

The limited competition in the market is unusual given the mandatory nature and stable builder failure rate. There are several reasons for this. The main ones are:

1. Small premium pool compared to other insurance classes
2. Large amount of capital required
3. Western Australian residential construction market concentrated in three large builders
4. Claims experience variable and uncertain
5. Long tail nature of the product.

Home indemnity insurance is a complex class to price, underwrite and manage. The HII premium pool in WA is around 1% of the workers compensation premium pool and less than 1% of the domestic home and motor car market in this State.

The capital required for HII, even with the State's $10 million indemnity, is projected to be around 125% of the annual premium or more. This is estimated as the first $10 million of exposure to a major event divided by the $8 million premium pool. APRA requires insurers to hold capital equal to their maximum event retention plus an allowance for insurance and investment risk, operational risk less a diversification allowance.

This 125% ratio compares to capital of around 80% of premium for workers compensation and other long tail[5] classes and around 35% for short tail classes like home and motor.

[5] Long tail insurance classes like workers compensation and compulsory third party, have a long time lag to reporting and payment of claims eg often one or more years. Short tail classes like home and car insurance, have claims which are reported and paid relatively quickly eg weeks or month. Home indemnity insurance is a long tail class, as while loss of deposit and non-completion claims may be of moderate length, warranty claims extend to six years after building completion.

Relative to other long tail classes, HII requires 56% (125/80-1) more capital per $1 of premium and return on it, and 257% (125/35-1) more capital and return on it, for short tail classes. The high capital requirement is due to the very high maximum event retention under HII from a major builder failure, relative to the other classes of insurance mentioned. This capital requirement for HII will be even more pronounced than it would be in other jurisdictions.

Without the State's indemnity or commercially affordable reinsurance cover, the insurance market's involvement in HII in WA is unlikely or if offered, the premiums would have to increase significantly.

The concentrated home construction market creates a catastrophe risk far greater than in other Australian jurisdictions and compared to other insurance classes.

The variability in the claims experience and uncertainty and complexity of claim outcomes, even once a HII claim event is known, increases the risk capital further and the cost, skill and experience required to manage a HII risk portfolio.

Hence, it is unlikely that additional insurers will have much appetite to participate in the current HII structure and arrangements, relative to other commercial and domestic classes of insurance.

Cost to Government

Administratively the current scheme design does not impose a high level of expenditure on Government. However when risk cost of the reinsurance provided is factored in, it is potentially the most expensive scheme design presented here.

To monitor its exposure, the State Government should impose stricter information reporting requirements on the participating insurers in the market to enable it to determine the size of the WA home indemnity insurance market and its risk exposure.

The State Government is exposed to an ongoing reputational risk arising from complaints about the limited coverage of the product and its mandatory nature.

4.3 Quantitative results from model

The model assumes:

- The capital held by the insurer (or the risk underwriter in general) is equal to the maximum claims event to which it is exposed to (ie the largest builder). An additional 10% of this amount (subject to a maximum of $1 million) is used as a proxy to cover additional underwriting costs
  In this event the insurer is exposed to a minimum capital requirement of $11 million, insurers are expected to pay an annual amount to cover the cost of holding this capital. This represents the required profit to be made on the insurance product

  Capital is not assumed to be replenished over the period in the event of bad claims experience
- That the insurer is responsible for all claims handling costs, the reinsurer covers the pure claims cost above $10 million only

- The Government currently does not hold a specified capital amount to cover its reinsurance risk exposure
- We have not allowed for brokerage or commission costs which are significant in the NSW and Victorian schemes. This is to reduce potential distortion in the average premium in this scheme relative to others.

Additional assumptions are shown in the table below:

Assumption	Insurer	Government
Role	Primary insurer	Reinsurer
Retention	Up to $10 million and excess over $90 million per builder failure	$80 million in excess of $10 million per builder failure
Reinsurance (% of premium pool)	10%	
Claims handling (% of claims cost)	10%	Insurer assumed to retain all claims handling costs
Policy administration (% of premium pool)	10%	
Investment return on fund balance	5% per annum	5% per annum
Capital required at end of year one	$11 million	Not currently held
Cost of capital	12.0% per annum	8.0% per annum

The model suggests that under the current scheme design, the Government retains 39% of the estimated maximum loss (increasing to 55%) for only 10% of the total premium pool. The table below shows the mean outcome from the model under 10,000 simulations.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	209	204	203	203	203	203	203	204	204	205
% of average contract size	*0.21%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*	*0.20%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Government	*212,534*	*338,617*	*384,001*	*404,582*	*424,444*	*443,993*	*463,482*	*483,242*	*501,607*	*520,465*
Insurer	*327,658*	*378,571*	*395,513*	*402,166*	*407,779*	*413,251*	*418,682*	*424,168*	*429,188*	*434,339*
Total premium pool	9,045	11,410	12,228	12,580	12,961	13,362	13,786	14,240	14,685	15,159
Government	*904*	*1,141*	*1,223*	*1,258*	*1,296*	*1,336*	*1,379*	*1,424*	*1,469*	*1,516*
Insurer	*8,140*	*10,269*	*11,005*	*11,322*	*11,665*	*12,025*	*12,407*	*12,816*	*13,217*	*13,643*
Claims cost (inc claims handling	3,795	7,564	8,779	9,391	9,992	9,794	9,862	10,377	10,785	10,988
Government	*878*	*2,654*	*3,299*	*3,648*	*4,042*	*3,860*	*3,973*	*4,263*	*4,497*	*4,625*
Insurer	*2,918*	*4,909*	*5,480*	*5,743*	*5,950*	*5,934*	*5,888*	*6,114*	*6,288*	*6,363*
Cumulative profit/loss	718	2,212	4,154	6,297	8,476	11,502	15,143	19,013	23,200	27,901
Government	*-342*	*-1,927*	*-3,963*	*-6,261*	*-8,899*	*-11,305*	*-13,779*	*-16,495*	*-19,407*	*-22,412*
Insurer	*1,059*	*4,139*	*8,117*	*12,558*	*17,375*	*22,807*	*28,922*	*35,508*	*42,607*	*50,313*

The apparent high profit level in this table is due to the combined influence of the large builder concentration, low risk of large claims events, the extra capital required for HII and the Government's reinsurance arrangements.

The premium per $100 thousand remains relatively constant for three reasons:

- Increasing yield curve over the period resulting in increased discounting effect when calculating future claims costs
- Static maximum claim limits (per contract) under the legislation. Over time this reduces the average claim size as a percentage of the total contract value which is assumed to increase in line with inflation
- Static reinsurance terms applied. As a result the insurer does not need to increase its capital requirements over the period reducing the cost of capital in real terms.
  If the reinsurance premium was measured as a percentage of the total risk cost or exposure we could expect to see an increasing premium per $100 thousand over the period.

The final point above, is highlighted by the increasing proportion of the risk held by the Government over the projection period (see table below).

As a result the Government, on average, experiences a significant loss over the projection period.

Percentage distribution	1	2	3	4	5	6	7	8	9	10
Estimated maximum loss	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*39%*	*47%*	*49%*	*50%*	*51%*	*52%*	*53%*	*53%*	*54%*	*55%*
Insurer	*61%*	*53%*	*51%*	*50%*	*49%*	*48%*	*47%*	*47%*	*46%*	*45%*
Total premium pool	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*
Insurer	*90%*	*90%*	*90%*	*90%*	*90%*	*90%*	*90%*	*90%*	*90%*	*90%*
Claims cost (inc claims handling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*23%*	*35%*	*38%*	*39%*	*40%*	*39%*	*40%*	*41%*	*42%*	*42%*
Insurer	*77%*	*65%*	*62%*	*61%*	*60%*	*61%*	*60%*	*59%*	*58%*	*58%*

The charts below highlight the cumulative claims cost to both parties and the percentile outcomes from the model. Due to the low probability of failure assumed (less than a one in 100 year chance for the largest builders) the frequency of large claim events is still quite low over a ten year projection period.

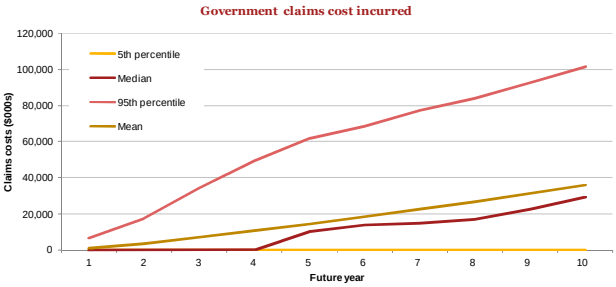
The model ran 10,000 simulations and the percentile lines shown in the charts below can be interpreted as:

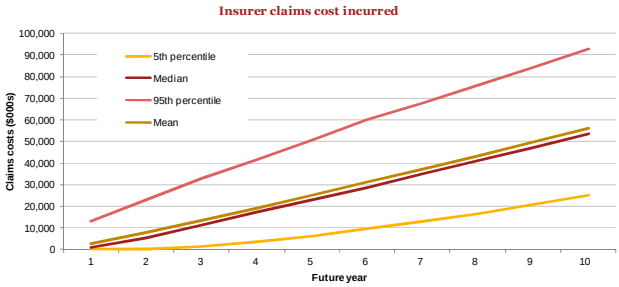
- 5^{th} percentile. If we ordered the outcomes of all 10,000 simulations from lowest to highest, the 5^{th} percentile would be equal to the 500th lowest outcome. The 95^{th} percentile would be equal to the 500^{th} highest outcome.
- Median. This is the outcome of the 5,000th simulation when ordered from lowest to highest. The median is generally referred to as unbiased as it does not get skewed by the relative size of each outcome like the mean does.
- Mean. This is the average outcome of the 10,000 simulations.

Each year represents the potential cumulative claims cost incurred up to that year.

The Government experiences a claims cost in only a very low proportion of simulations. However due to the skew of the residential market in Western Australia, when it experiences a claim, the cost is significant, leading to the mean claims cost being larger than the median cost.

This skew is also present in the insurer claims cost, however due to the presence of small builders, claims costs incurred are a significantly higher proportion of simulations leading to the linear increase in the cumulative claims cost.



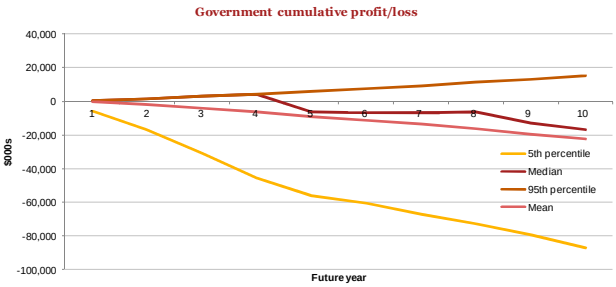


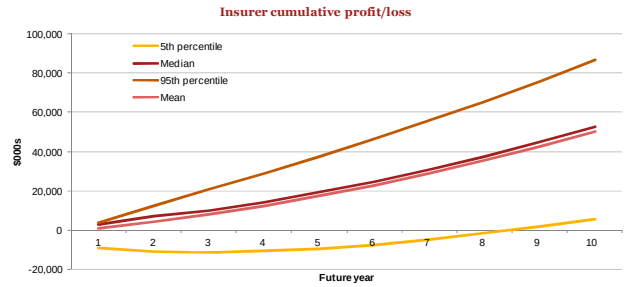
Whilst the probability of a claim occurring is extremely low for an individual year, over a ten year period there is a relatively high probability of a large claim event occurring that will result in the excess of loss reinsurance being used.

Due to the low reinsurance premium collected and its disconnect to the actual risk exposure faced, the Government is expected to make a cumulative loss by year ten over 75 percent of the time.

The insurer however is expected to make a positive cumulative profit over the ten year period over 95% of the time. As the insurer is able to:

- Adjust premium based on its risk exposure
- Allow for the cost of capital in pricing
- Cap its maximum exposure using the reinsurance cover provided by the Government, it can reduce the skew of the claims event distribution and
- It can reduce the likelihood of a capital loss over the ten year projection period.





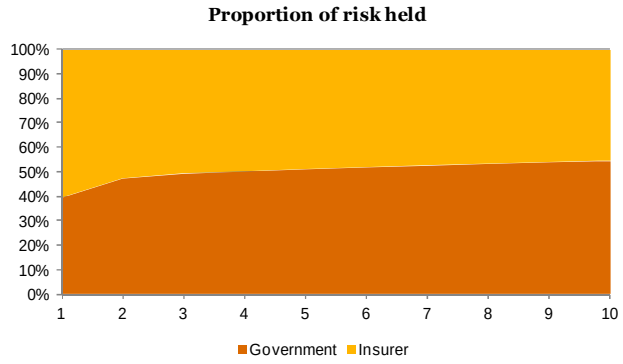
Despite the high level of profit projected, the market remains unattractive to insurers due to the reasons outlined in section 4.2 above which were the:

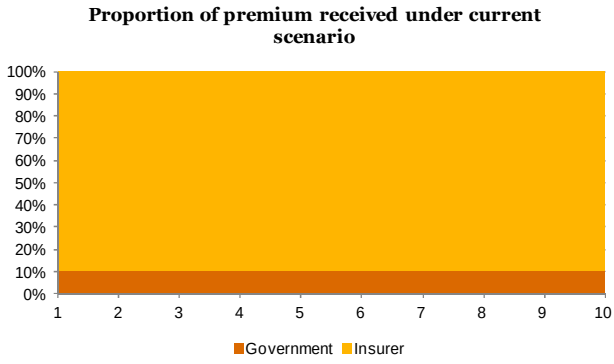
- Relatively high cost of capital and low premium pool compared to other forms of insurance
- Long tail nature of the product and uncertainties that brings in pricing and estimating maximum exposure to a single builder
- High market concentration of individual builders in Western Australia.

4.4 Comments on design if were to continue

If the scheme were to continue the distribution of premium should be altered to more accurately reflect the cost to the Government, its exposure and the capital required to be held to support the reinsurance exposure. This will result in an increase in premium but limit the downside risk (costs exceeding income collected) to the Government in the event of a major builder collapse.

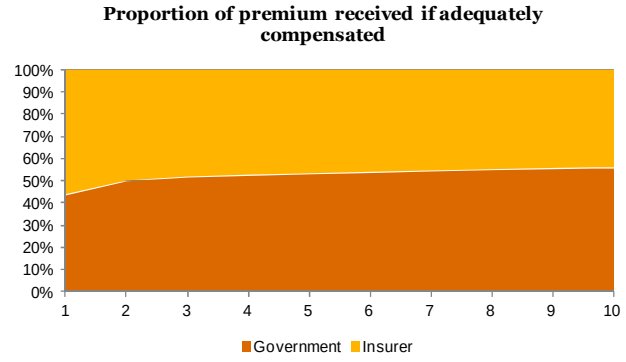
Currently the Government holds 39% of the total risk increasing to 54% of the total risk over the projection period but retains only 10% of the premium, as highlighted in the charts below.

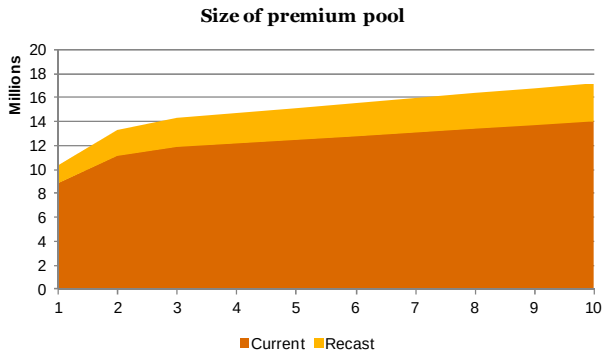




If the Government were to be adequately compensated for the risk coverage it provides[6], we would see a change in the premium distribution and also the size of the total premium pool (see charts below). The allocation of premium now closely resembles the risk distribution. The total premium pool has also increased by 20-25% relative to the initial scheme design.

Under the recast the insurer would receive a lower annual premium due to the way in which we have allocated the risk cost. If premium flow to the insurer did not change, and the Government was adequately compensated, the total premium pool would be an additional 45-60% above the base scenario.





In additional to altering reimbursement levels, adjustments should be made to the agreements governing the reinsurance treaty to inflate the insurer retention in line with changes in the size of the residential housing

6 As calculated by assuming the Government takes the proportion of the risk premium that it reinsures and that it is adequately compensated for the capital it puts up.

market. A potential proxy may be the change in housing starts multiplied by the change in average contract size.

The Government should also implement regular pro-forma reporting requirements with the participating insurers in the market. The reporting requirements should cover but not be limited to:

- Certificates issued in total and number of unique builders insured
- Claims made and their outcome
- Premium rate
- Estimated maximum loss by builder
- Premium collected
- Builder insolvency data.

The other issues in section 3.1 and 3.2 should also be considered such as strengthening the powers of the relevant Government authority to improve consumer protection in the event of disputes with active builders.

The modelling has also highlighted that the legislation claim limits should be indexed to increase in line with the average contract value.

5 Scheme two: Separation of insurance risks

Key points of this section

- Discusses the viability of offering the non-completion and warranty components as separate products. Main appeal of scheme design is separation of risks into relatively uniform components which will allow more accurate pricing.
- If the Government does not participate in the scheme (as either underwriter or reinsurance) then risk to Government is low. If acts as underwriter for warranty risks, total exposure is low compared to a combined scheme (3%) but the weighted exposure period will be longer.
- Consumer protection is high if insurers are found to participate in the market. Last resort issues still apply.
- Premiums are highest of the five schemes due to the high cost of capital required by insurers to support the non-completion risks.
- If the scheme were to proceed, the Government would need to provide incentives to insurers to enter the market if not providing reinsurance cover. Legislation would also need to be amended to define the date of completion.

5.1 Summary

Aspect	Rating
Risk undertaken by State Government	The scope for this scheme was that the Government would not offer reinsurance and therefore would not be at risk. As suggested by the ERA, we have modelled the scenario where the Government enters the market as the warranty insurance provider. If insurers are not able to get reinsurance from the market there is the risk that if the Government does not offer reinsurance, insurers are likely to withdraw from the market. There is a potential risk that insurers, when given the choice will select either the non-completion or the warranty component, not both. This will lead to the market being even shallower and inefficient.
Level of consumer protection	High against insurer failure as its classed and regulated as general insurance, then likely that there will be sufficient capital. Last resort insurance protection offers lower benefit coverage and levels than first resort.
Risk of scheme failure	Low if remains privately underwritten and adequate reinsurance is available. However there may be supply and/or price issues if insurers choose to only supply one form of insurance or withdraw entirely.
Premium levels	The model suggests that the combined cost would be higher than under the current arrangements due to the absence of the reinsurance arrangement. It is likely that insurers will still bundle the two forms of insurance, otherwise they will operate in separate areas of the market to reduce their total exposure (duration and cost) to a builder. By offering as separate products the uncertainty for each product has decreased as: - While deposit plus non-completion component has a large potential cost, especially if a large builder collapses, the risk period and premium are shorter eg one to two years - Warranty have a potentially higher frequency but lower average claim size and incurred cost over a longer time period (6 years). The separation of the two products and division of the uncertainty may result in a cost reduction. This seems unlikely as commission / administration expenses applied will override any cost savings for potential reduction in uncertainty. We have not allowed for any reduction in costs in our modelling. There will also need to be additional legislation in place regarding the separation of products and signalling of completion of initial work (ie where does non-completion stop and warranty begin) as insurers do not collect the actual construction completion date for current policies. If this scheme proceeds without any form of reinsurance offered by the State Government, there will be an increase in the price of the combined premium relative to the current scheme design.
Efficiency	On behalf of the policyholder the splitting of the insurer components are likely to be less efficient, as now required to source two policies for coverage. This may be required to be done through two different insurers. Administratively there will also be additional cost as insurers will have to draw two policies instead of one. There may be an increased burden of proof an event has occurred, particularly if it is unclear whether the event is pre- or post-completion.

5.2 Other issues

One of the major reasons noted by insurers for withdrawing from the NSW and Victorian markets was the uncertainty caused by the global financial crisis and the potential for builder collapse going forward.

Insurers were also being inundated with non-structural warranty claims in the sixth year following completion from multi-unit properties (which are exempt in WA legislation). However WA may want to consider amending legislation to cover structural damage only during some or all of the warranty period.

Building industry groups have suggested shortening the warranty period to make the product more attractive to insurers. This has some appeal in that it reduces the period of exposure, the possibility that a claim event will occur and the cumulative exposure to a single builder.

Whilst shortening of the warranty period will reduce the potential burden on insurers and builders it will also reduce the level of consumer protection.

The main appeal of the separation of the two products to insurers will be limiting the period of exposure to a particular builder for those insurers who insure the non-start and non-completion components.

This will limit the exposure period to the builder to about a year. It will also reduce the total number of contracts to a particular builder to which the insurer is exposed (if only provides the builder with one form of insurance). The short tail nature of the contracts will allow insurers to more accurately forecast the loss ratio and recognise faster any profits/losses arising from the portfolio.

For those insurers insuring the warranty component only it will be the reduced frequency[7] and potentially severity from insuring the warranty component.

Administratively there may be issues in defining a fault between non-completion and defect risk. Particularly if the claim arose because the house was not completed to initial specifications but the fault was not apparent until after completion.

Policyholders may also find it prohibitive to obtain warranty insurance if a claim occurred for the property in the non-completion stage.

5.3 Quantitative results from model

The model assumes:

- That the State Government underwrites the warranty component of the risk. This is in response to a request by the ERA
- There is no transfer of risk between the two non-completion and the warranty risk underwriters

[7] If a builder collapses, not all contracts will have a claim made against them in warranty period, unlike those properties which are still in the deposit or non-completion stage.

- As per Scheme one we have not allowed for brokerage or commission costs
- Both parties hold capital equivalent to the maximum event that they are exposed to plus an additional 10% loading to cover additional costs (to a maximum of $1 million)
- Additional assumptions are shown in the table below:

Assumption	Insurer	Government
Role	Insurer non-complete	Insurer warranty
Retention	All, no reinsurance arrangements assumed	All, no reinsurance arrangements assumed
Claims handling (% of claims cost)	10%	10%
Policy administration (% of premium pool)	10%	10%
Investment return on fund balance	5% per annum	5% per annum
Capital required at end of year one	$67 million	$1 million
Cost of capital	12.0% per annum	8.0% per annum

Under Scheme two, the average premium per $100 thousand is 38% more than that estimated under Scheme one. However if under Scheme one, the Government was adequately compensated for its risk, the premium under Scheme one would only be 5% lower than that projected under Scheme two.

The main driver of this is the removal of the reinsurance cover for the insurers, who hold the non-completion exposure which ultimately comprise 97% of the total estimated maximum loss. As a result the capital required to support the scheme increases significantly to $68 million in the first year. The significant increase in capital servicing costs results in the increased premium.

Over the projection period, the average premium first increases before it reduces, driven by reductions in the non-completion average premium value. Whilst offset partially by the development of the static maximum claim limits and increasing yield curve, the average premium per $100 thousand decreases slightly after year 6.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	274	275	277	277	277	277	276	276	275	274
Non-completion	273	271	269	268	267	267	266	265	264	263
Warranty	1	4	7	9	10	10	10	11	11	11
% of average contract size (total)	*0.27%*	*0.27%*	*0.28%*	*0.28%*	*0.28%*	*0.28%*	*0.28%*	*0.28%*	*0.28%*	*0.27%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Government	*662*	*6,581*	*12,348*	*16,754*	*19,780*	*21,756*	*22,941*	*23,738*	*24,464*	*25,198*
Insurer	*539,529*	*710,607*	*767,166*	*789,993*	*812,443*	*835,488*	*859,224*	*883,672*	*906,331*	*929,606*
Total premium pool	11,821	15,374	16,662	17,143	17,627	18,122	18,632	19,157	19,630	20,091
Government	*42*	*224*	*430*	*504*	*554*	*590*	*617*	*639*	*661*	*659*
Insurer	*11,778*	*15,150*	*16,232*	*16,639*	*17,072*	*17,532*	*18,015*	*18,518*	*18,969*	*19,432*
Claims cost (inc claims handling)	3,727	7,584	9,012	9,146	9,180	9,752	10,427	10,516	10,830	11,009
Government	*2*	*48*	*118*	*169*	*201*	*240*	*267*	*273*	*275*	*288*
Insurer	*3,725*	*7,536*	*8,894*	*8,977*	*8,979*	*9,512*	*10,160*	*10,243*	*10,555*	*10,721*
Cumulative profit/loss	1,163	1,771	2,065	2,586	3,265	3,572	3,400	3,331	3,116	2,816
Government	*28*	*13*	*82*	*165*	*261*	*349*	*429*	*503*	*564*	*562*
Insurer	*1,136*	*1,757*	*1,983*	*2,421*	*3,005*	*3,223*	*2,971*	*2,827*	*2,551*	*2,254*

Over the period the Government accumulates a slight positive retained profit. However, this is driven by an assumption in the model that an increased premium will be charged for servicing the capital required due to the increased exposure time. This is not relevant in non-completion or total scheme calculations as the significant majority of the exposure expires within one year.

Whilst this assumption might not be replicated in reality, it does give rise to the difficulty of projecting the cumulative exposure, required capital base and therefore required premium for a long-tail exposure such as home warranty.

Insurers achieve low cumulative profit/loss over the period relative to Scheme one. The limiting to non-completion risks allows pricing to be more accurate and reduces the period over which premium can generate investment income before it is earned.

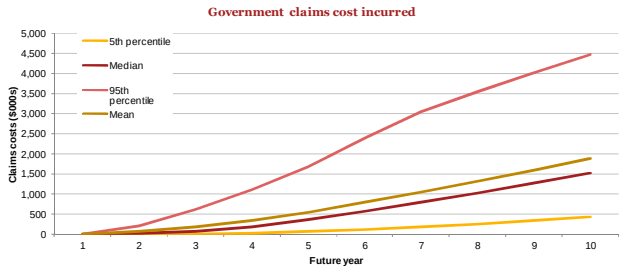
Note that the profit shown is net of the cost of capital and the unearned premium reserve at the end of the year.

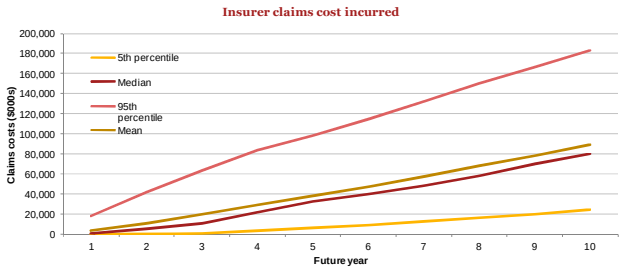
Percentage distribution	1	2	3	4	5	6	7	8	9	10
Estimated maximum loss	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*0%*	*1%*	*2%*	*2%*	*2%*	*3%*	*3%*	*3%*	*3%*	*3%*
Insurer	*100%*	*99%*	*98%*	*98%*	*98%*	*97%*	*97%*	*97%*	*97%*	*97%*
Total premium pool	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*0%*	*1%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*
Insurer	*100%*	*99%*	*97%*	*97%*	*97%*	*97%*	*97%*	*97%*	*97%*	*97%*
Claims cost (inc claims handling)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*0%*	*1%*	*1%*	*2%*	*2%*	*2%*	*3%*	*3%*	*3%*	*3%*
Insurer	*100%*	*99%*	*99%*	*98%*	*98%*	*98%*	*97%*	*97%*	*97%*	*97%*

Insurer claim data received too late for inclusion in the model and this report indicates that the warranty /Government component is a far greater portion of overall costs than shown in the results above, most likely 25% or more. For illustrative purposes only, this implies a potential increase in capital required after one year from $1 million to $8.3 million or more and consequent increases in premiums, claims cost and the estimated maximum loss.

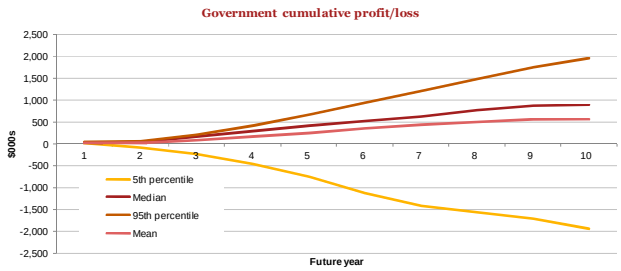
The ERA should bear this in mind when developing the preferred approach.

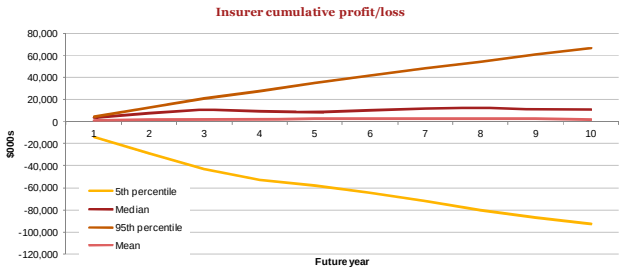
The cumulative claims cost incurred by both the Government and the insurer increase steady over the projection period. Due to the delay between scheme commencement and the beginning of the warranty period, the Government exposure increases less rapidly than the insurer exposure.





Cumulative profit is much more stable than previously, owing to the separation of the risks allowing greater flexibility and accuracy in pricing.





For both the Government and insurers, the downside risk is greater than the upside risk due to the low probability of catastrophic claim events occurring. However in relative terms of scale, the downside risk faced by the Government is significantly larger than that faced by the insurer. This is due to the long exposure period of warranty claims.

To offset this, the Government would need to increase the required cost of capital in setting the premium to ensure that it reflects the duration and increased risk of the exposure.

5.4 Comments on design if to proceed

If not providing reinsurance, particularly for non-completion insurance, the Government may need to offer additional incentives to ensure that this design will increase the appetite of insurers and reinsurers to provide home indemnity insurance. This comment is made in light of current arrangements within the WA home indemnity insurance scheme and the marginal reduction in an insurers potential estimated maximum loss if they offered non-completion only.

As the model suggests there is some appeal in divorcing the two risk components to allow more accurate assessment and pricing of the risk and reduce the cumulative exposure to an individual builder.

Realistically, unless there is a change in the structure of the housing industry, there will not be an increase in the markets appetite to reinsure the catastrophic non-completion risk exposures. Any reinsurance for non-completion risks would also be off a lower premium pool, once warranty premiums are removed.

If enacted the legislation would need to ensure that it clearly states what is covered by each of the two policies and how the date of completion is defined.

The Government may want to investigate steps for improving the ‘attractiveness’ of the warranty insurance component to entice insurers and/or other parties to be involved in it. This could include:

- Shortening the length of the warranty period. A shorter warranty period would reduce the uncertainty and incurred claims cost of the product. However, as mentioned earlier, the warranty period is a consumer protection issue, and any plans to shorten it should consider the timing after completion of when large structural defects are reported
- Restricting the coverage of the warranty period. The Government could alter legislation to clarify the exact incidences in which a policyholder can claim. This should include the type of builder and type of

defect. For example in NSW, there was a significant deterioration in claims costs during the warranty period as the legislation including coverage for non-structural defect claims.

6 Scheme three: Fidelity fund

Key points of this section

- Explores the potential for a fidelity fund to operate in Western Australia. Unlike other designs the fidelity fund would be the only participant in the market as no reinsurance or outsourcing of administration functions is assumed to occur.
- There exists an implicit risk to Government from the potential need to 'bail out' the fidelity fund in the event of a catastrophic claim, particularly in the early years when the risk of failure is far greater while the capital is being established.
- Level of consumer protection is lowest given the ability of a fidelity fund to generate and secure enough capital to withstand a catastrophic claims event. This design would be better applied in a more evenly distributed market environment.
- Initially a fidelity fund is unlikely to have the same level of technical expertise as an insurer which could add inefficiencies and risk to the scheme.
- The average premium is slightly below that expected under Scheme two due to the lower cost of capital required for the fidelity fund. Premiums would increase if the fidelity fund was not able to use the capital base to generate investment earnings. The fidelity fund would also have a more volatile profit outcome and be less likely to have a positive fund balance.
- If it were to proceed, the Government should require regular reviews by, or appointment of, an actuary and auditor. It may also have to provide some form of guarantee in the event of capital shortfall.
- Scenarios suggest that a Government guarantee arrangement may be feasible, however they make a series of assumptions that may not be realistic in the long-term.

6.1 Summary

Aspect	Rating
Risk undertaken by State Government	If the organisation responsible for running the Fund is separate to Government, then the financial risk to the Government is limited. However there may be an implicit risk for Government to cover any deficit if the fidelity fund fails or does not have sufficient funds to cover losses from builder failures.
Level of consumer protection	There is a risk that the organising body of the scheme will be more aligned with the industry than the policyholder. This could lead to lower than required pricing being adopted, undue influence from larger builders and vested interests when assessing claims. Also given the skew of industry, it will take the fidelity fund a long time to generate enough premium income and hence capital to be able to cover the cost of a single large builder failure.
Risk of scheme failure	Relatively high compared to other schemes. Though this is dependent on the level of capital within the scheme at commencement and also the frequency and size of builder collapses as the scheme builds up a premium base. Also a fidelity fund is less likely to have the technical expertise in pricing, underwriting and claims management than an insurer would.
Premium levels	It is likely that a fidelity fund will require a lower profit level than insurers would. However until there is a suitable premium pool, a higher level of premium than deterministically required may be collected to generate additional capital. This will cause generational issues – ie if risk levels change, new players may be charged less. Alternatively if experience is worse than expected, 'surviving' builders may be charged more despite their lower level of risk. Depending on the expense margins and required capital return the premium may ultimately be lower than other schemes but the initial capital raising requirement higher. This will be dependent on the fidelity fund's approach to the generation of capital. Premiums are not expected to be risk rated in a fidelity fund, instead they would be a flat percentage of average contract size. This will create cross-subsidisation between the builders with lower risk to those with higher risk. We note that this also applies to the Queensland home indemnity scheme.
Efficiency	Likely to be low. As the organisation is independent of Government the linkages to builder registration could be limited. The organisation is unlikely to have the expertise in claims administration and management that an insurer will have. This will also extend to pricing and risk rating of builders. This expertise will build over time as the fund becomes established. A fidelity fund is best in a situation where the markets and risks are evenly distributed and numerous. This does not exist in the WA residential housing market. Fidelity funds have performed well in the ACT and NT where the market is much smaller and the concentration risks are smaller. The addition of a fidelity fund to the WA HII market would diversify the market and add another option/competitor for consumers, even if the fund excluded the three large builders. In this instance it would play a similar role to the smaller of the current insurers.

6.2 Other issues

The fidelity fund will need a level of start up capital to cover any potential large claim events that could occur in the initial years. It will depend on the regulatory body monitoring the fidelity fund as to the level of the start up capital required.

If the fund is recognised as a general insurer, the Federal regulator APRA, would require it to hold enough capital for a 1 in 200 year event (concentration charge) in addition to charges for expected insurance liabilities and investment risk.

To cover the concentration charge alone would require the fidelity fund to hold the EML for the largest builder, which is around $50 million in the first year. It is unlikely that the fund will have access to sufficient capital to cover this, or be able to service the cost of this capital if it did[8].

If the capital cannot be sourced and the regulatory body does not allow post event funding for a large builder collapse the fidelity fund will require reinsurance or some form of Government guarantee. This has the same potential issues as Schemes one and two.

If post event funding is allowed, the additional premium and period over which it would be collected will need to be determined such that it does not cause additional builder collapses. Charging surviving builders a higher level of premium to recoup prior builder collapse losses, causes generational inequity and penalises the surviving builders for being better risks.

Alternatively if initial premiums are set too high, there will also be generational issues when premiums are reduced to the required level. The generational issue caused here is that the contribution of new builders will be less than that of existing builders.

In the event that there is more than one fidelity fund or insurance option operating in the Scheme, builders may change schemes following a large builder collapse, which would further reduce the ability of the fidelity fund to recoup capital losses.

This is the case in the ACT where there is competition in the market between a fidelity fund and the insurer operated by different industry associations. Many builders belong to both industry associations. If premiums are not risk rated, as we have assumed, and if there are two HII options, builders may switch between the options to reduce their premiums.

As with all insurance operations with multiple insurance providers, there is the risk of anti-selection. For example if one insurer does not properly risk-rate or underwrite for a particular factor it can attract poor risks who are not paying a premium that reflects their risk level. At the same time, good risks may transfer to the other insurer who is able to offer a better rate as they are not subsidising the bad risks within the overall pool.

It should be noted that this is a potential risk in all markets with multiple insurance providers.

[8] The fund may be required to use a bank guarantee, in which case it would have a cost of capital but may not be able to access the capital to generate a supplementary investment income.

Legislation may be able to mitigate this risk by preventing builders to change insurers post-event, collecting a levy to support the ailing insurer provider, intervening by providing required capital or prescribing maximum premium levels and underwriting factors. However all these would be at the expense of open market operation.

6.3 Quantitative results from model

The model assumes:

- Fidelity fund underwrites the entire risk as a single product
- Despite being run by a member organisation the fidelity fund still holds the same base capital requirement as an insurer would in a separate scheme, albeit its cost of capital is lower.
  We note that it may be unrealistic to assume that a fidelity fund has access to this level of capital, which is a noted disadvantage of this Scheme design

  Potentially a more realistic scenario is that the fidelity fund holds a bank guarantee for the required capital. As a result there is still a cost of capital involved, however the fidelity fund would not be able to earn any investment income on the capital base in this scenario

  At the request of the ERA we have modelled this and included the results in Appendix B
- We have not assumed that the fund is provided with any implicit or explicit 'bail-out' arrangements by Government in the event of a major claims event
- We have not assumed that there will be a reduction/increase in the rate of builder failure under this arrangement. We have built this functionality into the model. As such this scheme design will have similar incurred claims costs (pre claims handling) to other schemes
- Additional assumptions are shown in the table below:

Assumption	Fidelity fund
Role	Underwriter of non-complete and warranty risks
Retention	All, no reinsurance arrangements assumed
Claims handling (% of claims cost)	10%
Policy administration (% of premium pool)	10%
Investment return on fund balance	5% per annum
Capital required at end of year one	$67 million
Cost of capital	10.0% per annum

The average premium per $100 thousand under the fidelity scheme is 4% lower than that under Scheme two. This is due to the lower cost of capital required by the fidelity fund. Unlike Schemes one and two, the average premium increases over the period. This is due to:

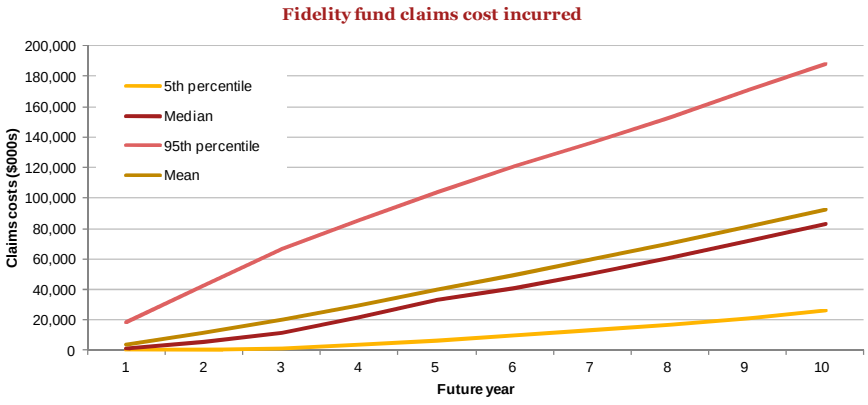
- Absence of reinsurance arrangements.
- Fixed cost of capital and development of warranty exposure. Under Scheme two the Government was assumed to have a lower cost of capital than the insurer resulting in a relatively lower warranty premium.
- Changes in yield curve and static claim limits as discussed earlier.

Overall as a percentage of the average contract size, the total premium remains stable at 0.26%.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	254	256	257	258	259	259	260	261	260	260
% of average contract size (total)	*0.25%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Total premium pool	10,973	14,304	15,491	16,014	16,541	17,083	17,631	18,200	18,729	19,276
Claims cost (inc claims handling	3,769	7,481	9,227	9,350	9,592	9,825	10,459	10,606	11,062	11,548
Cumulative profit/loss	-140	1,180	2,515	4,359	6,417	8,713	10,839	13,309	15,763	18,432

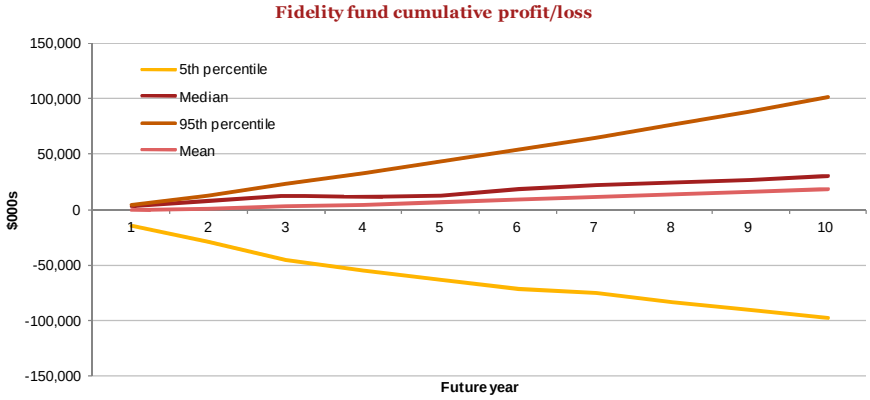
Unlike the other schemes discussed in this report, the design assumes that one party is responsible for the entire insurance function, from underwriting, policy administration and claims handling. It also assumes that the fidelity fund assumes the total risk of the scheme.

The cumulative claims cost incurred under the scheme follows a similar pattern to that experienced by the insurers in Scheme two albeit at a steeper angle.



Over the period the fidelity fund does generate a cumulative profit in over half of the simulations. The level of profit is significantly below that of what insurers are expected to earn in Scheme one.

Unlike in other schemes the upside and downside risk are approximately equal.



As discussed earlier if the fidelity fund is required to hold a bank guarantee to obtain security to cover its maximum exposure, the level of profit generated by the fidelity fund is likely to be more tenuous as they will not have a significant capital base on which to earn investment income.

To offset the higher risk, the fidelity fund will need to build in additional risk margins into the calculation of the premium per contract to generate a sufficient capital base to reduce the probability and severity of large cumulative losses.

6.4 Comments on design if to proceed

A fidelity fund scheme will potentially create moral hazard and generational equity issues but may reduce the cost of entry to smaller builders (depending on premium setting process). The moral hazard occurs because the builders are insuring their own financial status. Albeit paid for by the policyholder. There will need to be some monitoring of the Scheme in place to ensure that it is collecting an appropriate level of premium. The moral hazard and both the liabilities and financial status of operators should be monitored on a regular basis. For high risk operators the use of bank guarantees for some of the liability could be used to reduce the moral hazard.

Unlike insurers, fidelity funds are not subject to APRA regulation and therefore do not need to maintain the same minimum capital requirements, regular preparation of insurance liabilities valuation reports by an Appointed Actuary or financial condition reports on the viability of the fund over the next three years. The HIA voiced its opposition to an introduction of a fidelity fund for this reason in a submission to the NT Government.

If it were to proceed, the Government should require regular external reviews by an experienced actuary of the premium setting process and calculation of the fidelity fund's liabilities. Legislation in the ACT requires the appointment of both an actuary and auditor and specifies the roles and duties of each. The Government could use the APRA reporting framework for an insurer as a template in setting the responsibilities of the fidelity fund.

Consideration will need to be given to the source and availability of start up capital. If the start up capital is insufficient in the event of a large builder collapse then the legislation of the fund will need to consider how a large builder collapse is to be funded and what happens in the event of the collapse of the fidelity fund, as the risk is the Government may have to step in.

The scenarios presented in Appendix B which assume that the Government provides a guarantee to the fidelity fund suggests that it will be possible that a Government guarantee could be designed in such a way that there would be a net cash inflow to the Government in the majority of cases. This is because the Government receives a capital cost payment for the maximum event at risk, however in the majority of cases the guarantee paid to the fidelity fund is for a small proportion of that total exposure.

However the scenarios also make a lot of assumptions regarding the premium setting, renewal of the guarantee, and long-term commitment of the association backing the fidelity fund which may not be realistic given commercial and political concerns.

Overall the scenarios presented here highlight the potential volatility and additional uncertainty that a fidelity fund would introduce to the WA HII market, particularly in the early years when its instability far greater while the capital is being established.

In the event that the fidelity fund generates excess capital, a review should be performed of the process to distribute capital back to members to ensure that there will remain sufficient capital within the scheme going forward.

The design of the scheme should consider whether one or more fidelity funds will be allowed and the potential interaction between the fidelity funds if more than one exists.

7 Scheme four: Government underwritten last resort

Key points of this section

- Discusses a similar model to that adopted in NSW and Victoria where the Government is the underwriter of the risk and employs insurers to act as brokers and claims managers for the scheme.
- Government will be exposed to the highest level of risk, but under the scheme design it can ensure it is adequately compensated for taking that risk.
- Whilst still last resort and subject to the consumer protection therein, the scheme would provide a high level of protection to the consumer.
- Scheme failure is low as it is Government underwritten. Controls are required to limit operational risk (as experienced in Victoria) from inadequate or failed processes or systems and to ensure the responsible department can set premium and funding levels without undue political influence.
- The scheme will be efficient as it can leverage off the policy and claims management expertise of insurers and collect available data to allow it to fully assess risks and identify adverse claims trends early.
- By outsourcing claims handling expenses, total downside risk the Government is slightly reduced.

7.1 Summary

Aspect	Rating
Risk undertaken by State Government	Full transfer of risk to State Government. However this removes the information asymmetry previously experienced under a mixed private/state scheme and the Government already carries the largest risks under the current arrangements. We have assumed in our modelling that an insurer does the underwriting of the premiums for this scheme so there is no reduction in risk due to linkages of the scheme with builder registration and disputes board. If the Government does the underwriting for this scheme (as per the Government underwritten first resort scheme design in section 8 below) there is the potential for the total risk to be reduced if there are strong linkages between the scheme and the builder registration and disputes board. Whilst strong linkages should exist, the various functions (insurance, licensing, dispute resolution) should be legally separated to prevent the conflict of interest as highlighted in the recent Queensland scheme review. All risk will be concentrated with one entity within this scheme whereas under a privately underwritten scheme the risk will be partially diversified across multiple entities (assuming there is more than one participant).
Level of consumer protection	The cover provided is still last resort and subject to the disadvantages discussed earlier. The level of consumer protection could be relatively high if linked with the builder dispute process, as State Government can then take a mediation role on behalf of policyholder – or when linked with licensing can assist in locating the builder. Additional mechanisms can be put in place to reduce onus on the policyholder. A Government centric scheme could also be quicker to react to adverse trends in the industry and change legislation as required.
Risk of scheme failure	Low as Government underwritten. Without proper governance controls there is a risk of operational failure[9], as experienced within the Victorian building authority in the eighteen months following the commencement of Government underwriting.
Premium levels	Likely to be lower than private scheme as Government will have a lower required return on capital (and minimum capital requirement) than a private insurer who requires a profit margin to service the cost of capital provided to support the HII exposure underwritten. The premium levels will also depend on the cost of the outsourcing arrangement and costs by the insurer to manage policies and claims.
Efficiency	Potentially the most efficient, particularly if the claims and policy administration is outsourced to private insurers. By making the Scheme Government centric it will allow the Government to be fully across the risks it is exposed to and in control of data collection / management. The Government will need to decide whether they are setting the premiums or whether the insurers are. If the Government is setting the premiums they may need to hire external resources to develop the pricing and rating of insurance products as they may not have the capacity or expertise internally.

[9] Operational risk or failure is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems. See http://en.wikipedia.org/wiki/Operational_risk for more information.

Aspect	Rating
	The Government may also require external actuarial support to assist value its insurance liabilities. However in the interests of affordability (particularly for high-risk builders) this scheme may not be completely efficient, as the pricing differential for risks is unlikely to be as extreme as may be the case in a privately underwritten scheme.

7.2 Other issues

There are potential concerns on the current capacity of the Government to fully manage the scheme without the assistance of an insurer(s).

From our discussions with industry we understand that the Building Commission would have limited capacity at the moment to manage the scheme as there are other changes to the building industry including changes to re-registration which are stretching its' capacity.

If insurers were to provide the underwriting expertise to risk rate the builders there is a potential misaligning of risk as the insurers will not have any exposure to the risk that they are underwriting. The Government would at a minimum need to provide strong guidance on the premium rates and underwriting process to ensure that they adequately cover the risk. The same applies to claims management which would require an incentive/disincentive scheme to promote insurer efficiency and ensure a sufficient level of investigation/customer service is achieved.

The Insurance Commission of Western Australia may be able to perform the administrative functions as they did when HIH collapsed.

The relevant Government agency should also audit the premium approval process regularly to ensure that underwriting standards are met.

7.3 Quantitative results from model

The model assumes:

- The Government outsources all policy administration and claims handling responsibilities to an insurer
- As there is no significant transfer of claims risk, the insurer does not establish a capital base for the arrangement but does add a profit margin in its calculation of the premium
- The component of the premium that is paid to the insurers for the outsourcing agreement is removed at the time of premium collection
- Additional assumptions are shown in the table below:

Assumption	Government	Insurer
Role	Underwriter	Insurance broker and claims agent

Assumption	Government	Insurer
Retention	All, no reinsurance arrangements assumed	All, no reinsurance arrangements assumed
Claims handling (% of claims cost)	Covered by outsourcing agreement	10%
Policy administration (% of premium pool)	Covered by outsourcing agreement	10%
Investment return on fund balance	5% per annum	5% per annum
Capital required at end of year one	$67 million	
Cost of capital	8.0% per annum	Not assumed to hold
Profit Margin	Covered by cost of capital	20%

Whilst still above Scheme one, the average premium under the Government run scheme is the lowest of the remaining schemes modelled due to the lower cost of capital required by the Government.

As per the fidelity fund the premium does increase over the claims period, but not significantly.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	235	236	237	238	238	238	238	239	238	238
% of average contract size	*0.23%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*	*0.24%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Government	*540,192*	*717,188*	*779,514*	*806,748*	*832,223*	*857,244*	*882,165*	*907,410*	*930,795*	*954,804*
Insurer	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total premium pool	10,138	13,208	14,281	14,741	15,209	15,686	16,170	16,667	17,131	17,618
Government	*8,735*	*11,387*	*12,322*	*12,730*	*13,144*	*13,565*	*13,992*	*14,430*	*14,840*	*15,270*
Insurer	*1,403*	*1,821*	*1,959*	*2,011*	*2,065*	*2,121*	*2,178*	*2,237*	*2,292*	*2,348*
Claims cost (inc claims handling)	3,797	7,588	8,808	9,420	10,035	9,858	9,916	10,487	10,905	11,144
Government	*3,452*	*6,898*	*8,007*	*8,563*	*9,122*	*8,962*	*9,015*	*9,533*	*9,913*	*10,131*
Insurer	*345*	*690*	*801*	*856*	*912*	*896*	*901*	*953*	*991*	*1,013*
Cumulative profit/loss	142	1,731	3,892	6,122	8,230	11,009	14,231	17,437	20,690	24,430
Government	*-15*	*1,288*	*3,108*	*4,976*	*6,721*	*9,065*	*11,800*	*14,511*	*17,252*	*20,451*
Insurer	*157*	*442*	*784*	*1,146*	*1,509*	*1,945*	*2,431*	*2,926*	*3,438*	*3,979*

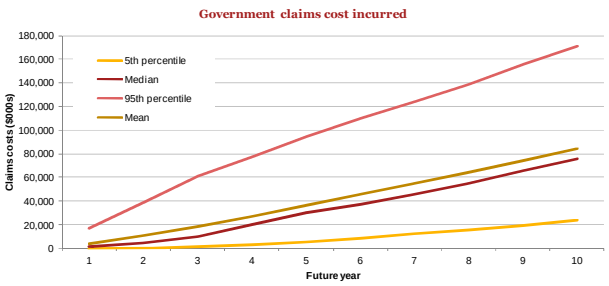
Approximately 14% of the premium pool goes to insurers for the outsourcing of premium and claims management (see table below). As discussed earlier we have kept claims handling and premium administration costs static across the schemes to ensure some similarity in the premium derivation between the schemes.

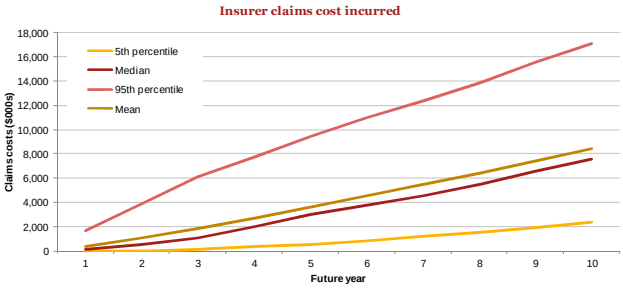
Insurers still retain claims administration risk as the exact claims handling cost in each year is uncertain. We have assumed that the insurer will require a 20% profit margin on their expected costs to compensate them for this risk.

Insurers receive 14% of the premium but retain 9% of the total claims cost, ie the claims handling component (see table below). The higher premium proportion kept is a result of the profit margin loading the insurer applies to its policy and claims handling fee. The proportion of premium insurers receive does decrease slightly over the term as the capital cost component of the premium increases.

Percentage distribution	1	2	3	4	5	6	7	8	9	10
Estimated maximum loss	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Insurer	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Total premium pool	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*	*87%*	*87%*	*87%*	*87%*
Insurer	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*13%*	*13%*	*13%*	*13%*
Claims cost (inc claims handling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*
Insurer	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*

Cumulative claims costs follow a similar pattern to Scheme three. As could be expected the distribution of the insurer claim costs incurred (does not include premium handling costs) is the same as the Government's, albeit a tenth of the size.

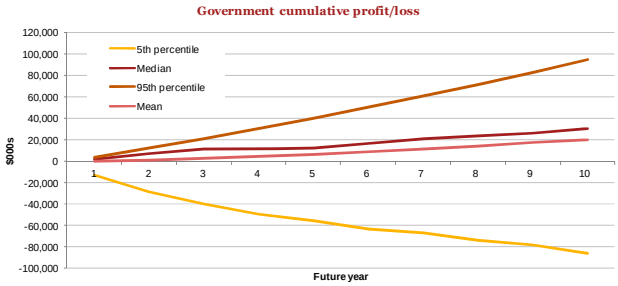


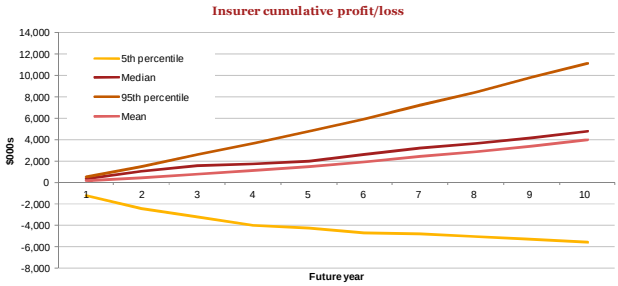


On average the insurer's cumulative profit, or total profit earned, over the period is 19% of the total premium received, whereas it's only 16% for the Government. While the cumulative profit distributions are similar, the downside risk[10] to the insurer is restrained by the profit margin earned in the outsourcing agreement. Using the same measure the downside risk to insurers is -27% of total premium collected and -66% for the Government.

There is also greater upswing for the Government, earning up to 73% of the premium pool in excess profit at the 95th percentile compared to 55% for insurers.

The average profit to the Government is higher than that received by the fidelity fund (as a percentage of premium pool). This appears due to the Government having less volatility in the claims experience due to the outsourcing of the claims management expenses.





[10] Negative movement from the average.

Whilst, at the 50th percentile, the Government is projected to make a profit over the ten year period, it is not suggested that this is a core aim of the Government scheme. While unable to be reflected in the model, the Government could take the following possible steps to return to a break even position:

- Provide builder and consumer education programs and training that would complement the provision of home indemnity insurance
- Adjust premium rates in a way to slowly draw down on excess capital
- Invest excess retained profits in riskier investment assets, and use the additional investment income to reduce premium requirements.

7.4 Comments on design if to proceed

It is unknown if this will actually increase the probability of a commercial reinsurer entering the market as it will not affect the market skew inherent within the industry. Whilst the Queensland Government has a long term reinsurance arrangement, the market distribution is more uniform than in Western Australia. NSW and Victoria currently do not have any reinsurance in place.

However it will create more options to structure cover layers within a reinsurance treaty and in this way obtain some level of commercial reinsurance.

A Government underwritten scheme reduces information asymmetry and potentially the moral hazard, as the insurer is also the entity that controls building legislation, licensing and consumer protection.

Political influences may result in the premium setting process being shifted away from the required level to compensate for the risk underwritten. In some instances this may be beneficial, as it will increase insurance affordability for high risk and/or small builders with a low capital base.

Alternatively it may result in premium freezes which cause funding level deterioration over time. If established the Government fund should be clear on its target capital position and funding level from inception.

8 Scheme five: Government underwritten first resort

Key points of this section

- Discusses the Government acting as underwriter in a first resort scheme. The modelling performed assumed that policy and claims administration functions will still be outsourced to an insurer(s)
- The first resort scheme offers the highest level of consumer protection as it removes the uncertainty associated with claims against active builders. However it can lead to nuisance/frivolous claims. We note that a stronger dispute resolution process with the legal ability to enforce settlement outcomes may bridge the gap between the first and last resort schemes
- A first resort scheme as modelled will also be highly efficient. The Government will have the ability to create linkages between the scheme and builder licensing, disputes and insurance functions as well as use first resort claims data to potentially identify builders in financial distress
- As recently identified in a review of the Queensland Building Services Authority there needs to be a clear separation of the individual departments that handle the licensing, building inspection, insurance and building works to avoid any potential or perceived conflicts of interest
- Increased ability to claim does result in higher overall claims costs and premium. The inclusion of first resort claims under the model does not significantly increase the premium relative to Scheme four as the required capital base (and maximum event cost) are unchanged

8.1 Summary

Aspect	Rating
Risk undertaken by State Government	Full transfer of risk to State Government. Risk will be greater than in a last resort scheme due to the greater ability of individuals to claim. However the earlier intervention should reduce the per claim cost. The shift to a Government centric scheme will reduce the information asymmetry previously experienced under a mixed private/state scheme. If strong linkages between the scheme and builder registration and the disputes board exist total risk could be reduced. Particularly if this information is taken into consideration at builder (re-)registration and premium setting. All risk will be concentrated within one entity, whereas under a privately underwritten scheme, risk is partially diversified across multiple entities (assuming more than one participant).
Level of consumer protection	A first resort, Government underwritten scheme will provide the highest level of consumer protection. Whilst the Government will still act as arbitrator in the first instance, it is possible that the Government may resolve the claim in some instances and then be in a strong position to recover costs from the builder to ensure claim cost control. When linked with licensing it can assist in monitoring builder and assist proving a claim event has occurred ie death, disappearance, insolvency. Alternatively the Government can publicly provide consumers with a greater level of information regarding their potential builder to inform their decision making process. Mechanisms can be put in place to reduce onus on policyholder.
Risk of scheme failure	Low if backed by Government guarantee. Under a Government run scheme there is the potential for a higher level of pricing and insurance risk due to the lack of technical expertise. Under a first resort scheme there is still the potential for claims and policy management to be outsourced to a private insurer.
Premium levels	Due to the higher level of coverage provided premiums are likely to be higher However there may be some interaction with licensing and dispute management that reduces the level of last resort claims over time
Efficiency	Relatively efficient, though we note that it will require material Government investment in the creation of the scheme, dispute resolution, mediation, policy administration and claims management teams. Some of these eg dispute resolution may be required or already put in place by the Building Commission. After discussions with the ERA, we have assumed that insurers would manage claims and policy administration as per the Government underwritten last resort scheme.

8.2 Other issues

Whilst we support strong linkages between the running of the Scheme and the relevant builder licensing and regulatory authority there should be a distinct separation of functions to prevent any conflicts of interest arising and/or a perception of bias.

The following is an excerpt from the November 2012 inquiry into the Queensland Building Services Authority:

> *The Committee is strongly of the view that there must be a clear and transparent divide between the roles of licensing; dispute management over directions to rectify and complete; and management of the insurance scheme. This means that each of these functions must at a minimum be legislatively or organisationally firewalled from each other and report through separate general managers to a Board or Director-General of a department. This was perceived to occur in the Queensland scheme where the licensing, dispute resolution and insurance functions were all located within the same Government agency.*

In Western Australia, the Insurance Commission of Western Australia will be well placed to take on the administrative role of operating the insurance function. This will provide a clear distinction from the Building Commission.

8.3 Quantitative results from model

The model assumes:

- The Government outsources all policy administration and claims handling responsibilities to an insurer
- As there is no significant transfer of claims risk, the insurer does not establish a capital base for the arrangement but does add a profit margin in its calculation of the premium
- The component of the premium that is paid to the insurers for the outsourcing agreement is removed at the time of premium collection
- Twenty five percent of active builder warranty claims are expected to be covered by the scheme (ie 25% of warranty claims made against active builders will be incurred by the first resort cover protection of the Scheme)
- We have not assumed that there will be a reduction/increase in the rate of builder failure under this arrangement. We have built this functionality into the model.
- Additional assumptions are shown in the table below:

Assumption	Government	Insurer
Role	Underwriter	Insurance broker and claims agent
Retention	All, no reinsurance arrangements assumed	All, no reinsurance arrangements assumed
Claims handling (% of claims cost)	Covered by outsourcing agreement	10%
Policy administration (% of premium pool)	Covered by outsourcing agreement	10%
Investment return on fund balance	5% per annum	5% per annum

Assumption	Government	Insurer
Capital required at end of year one	$67 million	
Cost of capital	8.0% per annum	Not assumed to hold
Profit Margin	Covered by cost of capital	20%

The projected premium required for a first resort scheme is 3%-4% more than for the last resort in the previous section.

On average the inclusion of first resort claims adds an additional 1%-2% to the total claims cost. This may be understated as:

- Additional cost to the Government of the dispute resolution process for claims which are not successful or settled at no cost to the Government has not been explicitly included
- More than 25% of active builder warranty claims may fall under first resort and it may also under-estimate the magnitude of the additional claims cost
- Some non-completion claims may exist which may add a significant on-cost to the Scheme.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	243	247	248	248	249	249	249	249	249	248
% of average contract size	*0.24%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*	*0.25%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Government	*540,192*	*717,188*	*779,514*	*806,748*	*832,223*	*857,244*	*882,165*	*907,410*	*930,795*	*954,804*
Insurer	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total premium pool	10,490	13,797	14,943	15,418	15,901	16,393	16,894	17,409	17,891	18,397
Government	*9,010*	*11,850*	*12,844*	*13,263*	*13,689*	*14,123*	*14,562*	*15,015*	*15,438*	*15,884*
Insurer	*1,480*	*1,947*	*2,099*	*2,155*	*2,212*	*2,271*	*2,332*	*2,394*	*2,453*	*2,513*
Claims cost (inc claims handling)	3,809	7,654	8,928	9,585	10,236	10,089	10,170	10,751	11,178	11,426
Government	*3,463*	*6,958*	*8,116*	*8,713*	*9,305*	*9,172*	*9,245*	*9,774*	*10,162*	*10,387*
Insurer	*346*	*696*	*812*	*871*	*931*	*917*	*925*	*977*	*1,016*	*1,039*
Cumulative profit/loss	68	1,645	3,989	6,588	9,350	12,928	17,034	21,198	25,426	30,088
Government	*-88*	*1,194*	*3,121*	*5,222*	*7,288*	*10,002*	*13,144*	*16,286*	*19,431*	*22,940*
Insurer	*156*	*451*	*868*	*1,366*	*2,062*	*2,926*	*3,890*	*4,912*	*5,995*	*7,148*

Percentage distribution	1	2	3	4	5	6	7	8	9	10
Estimated maximum loss	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Insurer	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Total premium pool	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*	*86%*
Insurer	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*
Claims cost (inc claims handling)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*	*91%*
Insurer	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*	*9%*

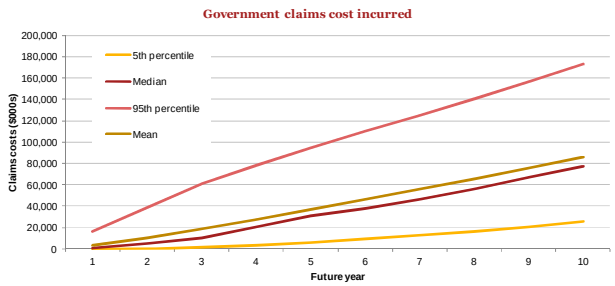
As could be expected the distribution of claims cost and premium is very similar to Scheme four, albeit with insurers taking a slightly larger percentage of the premium pool. This is because the Government's cost of capital under this scheme is the same as for Scheme four and as a result represents a smaller percentage of the expected claims cost.

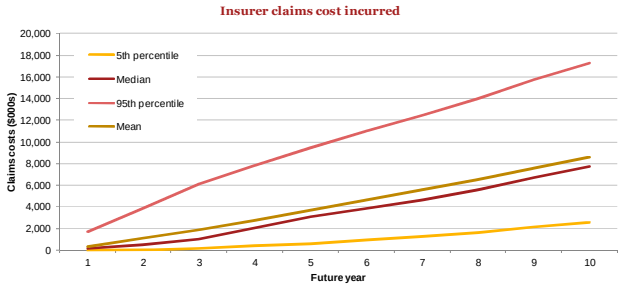
The capital requirement has not changed as the single largest claim event is still the risk of a major builder collapse. The inclusion of first resort claims does not add additional cost from this source.

Relative to Scheme four, the cost of the outsourcing agreement with the insurers increases by 7%.

Claims cost incurred distribution is similar to Scheme four albeit increasing at a slightly faster rate due to the presence of constant warranty claims over the period. As may be expected the inclusion of first resort claims adds a higher percentage to the claims cost incurred in simulations where there is a lower incidence of builder failure.

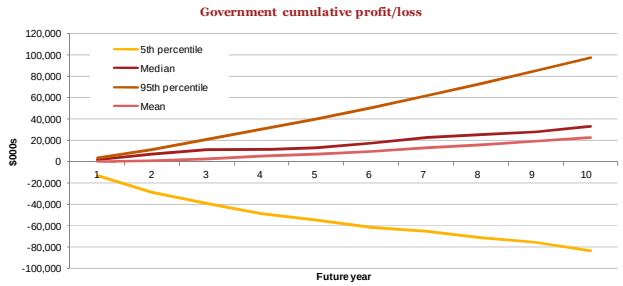
In the modelling the incidence of builder failure is a random variable, whereas the distribution of first resort claims is static.

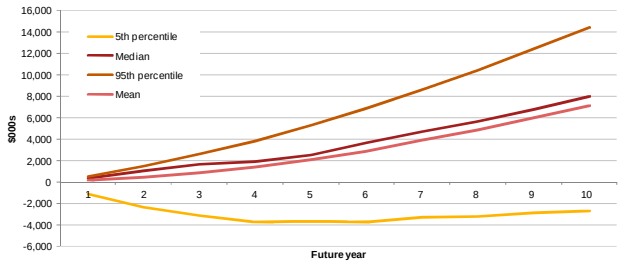




Under the Scheme both the Government and the insurer are expected to generate a higher cumulative profit with respect to Scheme four. This is driven by the additional investment earnings on the first resort claims portion of the premium from the period it is received until the claim is incurred.

Insurers also have a limited downside effect from the profit margin collected on the first resort claims portion. If the magnitude of the first resort claims was also a random variable this would add to the variability of the profit outcome.





8.4 Comments on design if to proceed

Whilst we have modelled it here as an outsourced arrangement, if the scheme is fully retained within Government, there will need to be a clear separation of the individual departments within that handle the licensing, building inspection, insurance and building works to avoid any conflicts of interest which were highlighted in a recent review of the Queensland Building Services Authority.

Given the ability of the policyholder to claim, the use of complementary linkages between the insurance function and the licensing and claim dispute claims, as well as consumer education, will assist in reducing the frequency of claims.

Similar concerns as noted in Scheme four pertaining to political intervention in the premium setting and funding level process remain relevant here.

Given the high level of mediation that may be required to resolve first resort claims, this aspect of the insurance function may be better retained within Government to enable it to have legislative powers to attain quicker resolution.

9 Data and methodology

Key points of this section

- Details of the key data items provided by the ERA for the construction of the model and completion of this report.
- Overview of the methodology employed in the model to calculate the risk held, income and expenditure to each of the Government, insurers and a fidelity fund, where appropriate.

9.1 Data

To help in understanding the current WA residential market and for a starting set of assumptions for the model, we received via the ERA, electronic copies of some risk exposure data from the Building Commission.

In addition, we were supplied with copies of numerous reports related to home indemnity insurance, including, but not limited to the:

- *HIA Housing 100* report for 2011/12
- Winter 2012 edition of the *HIA State Outlook* for WA
- *Inquiry into the Operation and Performance of the Queensland Building Services Authority 2012* by the Transport, Housing and Local Government Committee.

These reports helped in the completion of this report, by giving further insight into the WA market as well as other state schemes.

Finally, the ERA provided us with the contact details for senior personnel at two large industry associations and we gained first hand insight and understanding of the building industry through discussions with them.

We did not independently validate the data received but we benchmarked it for reasonableness to other reports supplied, our conversations with the industry associations and our own research.

9.1.1 Insurer A data

Initially we received nine quarterly files up to September 2012 with the following information:

- Transaction level data for certificates written under the XOL and Covered Contracts risk sharing arrangements
- Copies of Recipient Created Tax Invoices for premium transfer to the State Government.

After an initial review of this data, we found there was insufficient information for our purposes, since the value of work for each contract was omitted. Following some delay, a single transaction file was provided for the period from 1 July 2010 to 30 June 2012, which included the value at work field.

Due to the data being provided at a transaction level, not at policy level, a significant level of manipulation was required to extract the required information.

For the larger building groups we grouped builder brands into their higher level trading company.

To help in understanding the exposure time for different builders the following fields were used to find the different phases of the contract:

- Inception was taken to be the start of the cover under the contract
- Effective date was used to represent the end of the deposit phase and the start of the construction period, and
- Expiry was used to represent the time, or estimated time, of practical completion.

If this assignment was repeated, we would prefer Insurer A to provide policy level data which is reconcilable with the data provided for this review. For example, we would expect to be able to identify:

- If the exposure period has changed (ie if the contract is in deposit, non-completion or warranty phase)
- Any claims lodged against the contract, payments made to date and estimate of payments outstanding.

For our purposes, the data was satisfactory in determining the current size and distribution of the residential housing market in WA.

9.1.2 *Insurer B data*

We received the following data :

- Contract level data as at 30 April 2011, 31 March 2012 and 31 July 2012 for all policies issued under the risk sharing arrangement it has with the State Government
- Copies of the Recipient Created Tax Invoices for premium transfers to the State Government for the same dates.

We did not independently validate this data but it appeared adequate. We used the data as a supplement to the Insurer A data received.

9.2 *References for research*

For a list of references used for our research into the design and function of the home indemnity insurance schemes in WA and other states and territories in Australia see Appendix C.

9.3 *Methodology*

For the purposes of assisting the inquiry the model which supplements this report has been designed to allow for a comparison between the five schemes for the risk held, income (both premium and investment income), and costs (claims, administration expenses and the cost of capital) to each of the Government, insurers and, where applicable, the fidelity fund.

The model is a ten year projection model of the residential building market in WA. It is assumed that any new scheme will start fresh and will not include transfer of any policies from the existing scheme.

In the model, 100 builders represented the WA market, three being the large builder groups and the rest being the remainder of the market. To establish an appropriate split and representation of the rest of the market, the data supplied from the ERA has been used to group builders based on the following characteristics:

- Average contract size of work carried out
- Average time in deposit phase
- Average time in construction, and

- Number of starts per calendar quarter.

A probability of failure is attached for each group of builders based on the like characteristics, an analysis of the premiums collected for the builders which fall into a group, and our knowledge and experience of the construction industry in WA.

The base assumptions are shown in Appendix D.

The following methods were employed to find each of the key results for each future time point.

9.3.1 Risk held

The estimated maximum loss (EML) is an estimate of the maximum loss in the event that the builder becomes insolvent. We have used the aggregate maximum loss across the market, and split this according to the specifics under each scheme, to give a measure of the risk held by each party.

To split the risk we have examined the proposed reinsurance arrangements under each scheme, and used these to spread the EML for each builder, before then aggregating for the market.

To calculate the EML at each future time point we have projected the number of starts, average contract size and the time in deposit and non-completion phases for each quarter of the ten year projection period.

The EML for a builder is calculated based on which phase the work is currently in. There are three phases:

- Deposit only
- Non-completion (in-construction) claims
- Warranty claims.

For each future time point we projected which phase the contract would be in and used this to assess the EML should the builder fail at this point. The EML for contracts under each phase is calculated as follows.

Deposit only exposure

Deposit only exposure covers the period from the signing of the contract until the site/construction work begins. Based on industry input, it is assumed that the deposit amount is 6.5% of the total contract value. Under current legislation, a HII claim on a deposit only contract covers the amount of the deposit paid, subject to a maximum of $20,000.

From prior discussions with industry, we are aware that the deposit is generally in the range of $1,000 to $2,000 with the remainder of the 6.5% being paid when the concrete slab is laid, hence our modelling approach is somewhat conservative.

Non-completion exposure

Non-completion (or in-construction) exposure is made up of the combination of two main cost components:

- **Quality control costs.** Costs arise as a result of a replacement builder having to check the work that has been completed to date. As the progress of the build increases so will the extent to which the work completed will have to be checked, and the costs to rectify any quality defects also increase.
- **Additional margin costs.** Costs arise when there is a change of builder part way through the construction process. As the progress of the home increases, the additional margin will decrease.

Once the quality control and additional costs have been separately calculated the overall non-completion EML is calculated as the sum of the two. The combined size of these costs are subject to a cap of $100,000, which has been applied to comply with current WA State legislation.

Warranty exposure

The following steps are followed to calculate the warranty claim exposure:

1 Project future claim numbers by applying a claim rate and decay rate for each warranty year. It is assumed that warranty claims diminish in frequency as time since completion increases

2 Adopt an average claim size for each warranty year as a percentage of the average contract value. The claim size is assumed to increase with time since completion since it is assumed that larger claims will take longer to emerge

3 The total projected cost of claims is found by multiplying the two figures for each future year of warranty remaining. It is implicitly assumed that contracts can claim multiple times.

The total EML is the sum of the deposit only, non-completion and warranty EMLs. The EML presented is exclusive of any claims costs which would be incurred in the event of a builder failure.

9.3.2 Income

We have analysed the income for each of the parties under each scheme as the combination of two elements: premium income and investment income. As for the calculation of the level of risk held, the premium income is calculated for the market as a whole and then distributed accordingly between the parties. Under some schemes, for example the first resort type proposed scheme, there are extra costs incurred which add to the level of premium income.

Following is a broad summary of the method employed to calculate the premium income and investment income items.

Premium income

There are two methods used in the model to calculate the premium which will be charged. The first method is used in all instances, except for the fidelity fund where the second method is used.

The first method projects the cost of a claim in each future period and multiplies this by the probability of occurrence to obtain the *risk cost*. In most cases the cost of a claim is represented by the EML, while the probability of failure is set as an input to the model.

We have assumed that the risk rating is performed on an annual basis and the premium charged on each contract will then be uniform across the year.

The future risk costs are inflated from current values to the actual amount which is expected to be paid, and then discounted to the time at which the contract is written to allow for the time value of money. Summing these risk costs across all future time points will give the total risk cost of the claims. We then add expense and contingency allowances, to obtain the premium charged under each contract.

Where a first resort scheme is proposed the extra costs of additional direct first resort claims are added to the cost of a claim, and then adjusted for the probability of occurrence in the same manner as above to increase the premium charged.

For the fidelity fund, the estimated costs under the scheme are aggregated to produce and set a levy which will be charged to all parties, irrespective of their risk rating.

This method examines the inflated and discounted risk cost for any contracts written in that period, and divides this by the total value of contracts written to find the percentage levy which should be charged on contracts written.

Under both methods, the premium level calculated has an expense margin, and a profit or risk margin added by insurers or the Government / fidelity fund respectively.

Investment income

To find the future investment income it is assumed that any premium income is placed into account, from which claims and administration costs are paid and that an income is earned on the net balance over time. It is assumed that each of the parties set up a separate account which they use, and each party has a different rate of earnings on the account.

This method is used under all the proposed scheme options.

9.3.3 Costs

There are two main costs under each of the schemes: the cost of claims arising due to builder failures and the costs of administering these claims.

Claim costs

In the event a builder fails, the claim cost is assumed to amount to the EML at that time. For each of the 100 builders representing the WA market, the probability of failure of any of these is based on the group into which the builder falls. This probability of failure is used in conjunction with a random number generator in Excel to simulate whether or not a builder fails at a set point in time.

By generating a random number for each builder for each future time point the claim cost for the entire industry is found.

Dynamically, if one of the 97 smaller builder groups does fail then the cost is incurred, but it is assumed that they are instantly replaced by a like builder in the industry. Builder failures are independent, i.e. if one builder fails then it is assumed that the probability of the other builders failing does not change.

If one of the big three builders fails then it is assumed that their work passes to one of the other two big builders remaining. Due to the inherent use of sub contractors by the larger groups it is assumed that the probability of failure does not increase for the remaining two large builder groups.

The above logic appears counter-intuitive but applies in the Western Australian residential construction market and derives from our discussions with the industry. We understand from these discussions that margins of small and medium builders usually decline during building booms as the cost of sub-contractors and material rise more rapidly than contracted prices.

This method will produce a single simulated total claim cost for the industry at each future time point. Multiple simulation runs are made and the cost at each future time point is taken to be the average over all simulations.

Note that the fewer the number of simulations, the more volatile the result, which may not be representative of the inputs set for the model. To get a better result to compare schemes a greater number of simulation runs should be used. This provides not only a central estimate of the builder failure cost but also the percentile distribution range around this central estimate.

As a by-product of the claims cost the model user may also find the average number of builders which fail at each future time point.

Claims handling expenses

Claims handling expenses are a fixed percentage of the cost of the claim. This claims handling expense is variable by scheme and whether it is the Government, insurer or the fidelity fund paying the claim.

Appendices

Appendix A Additional scheme results

What this attachment covers

- Individual scheme design assumptions
- Expanded results from sections four to eight.

A 1 Scheme assumptions

Assumption	Scheme Design One	Two	Three	Four	Five
Brief description	The current excess of loss scheme run, where government does bear some risk. This does not include the covered contracts agreement	A separation of the deposit and non-completion aspects of the cover from the warranty cover. Use the boxes below to determine who holds the warranty risk and who holds the deposit/ non-completion risks	Establishment of a fidelity fund	Government run LAST resort scheme, with insurance companies undertaking the administrative aspects of the insurance cover	Government run FIRST resort scheme, with insurance companies undertaking the administrative aspects of the insurance cover
Reinsurance					
Insurer pays up to ($)	10,000,000 plus excess over 90,000,000	1,000,000,000	0	0	0
Government pays up to ($) (a) (b)	90,000,000	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000
Cost of reinsurance (% of premium pool)	10%	N/A	N/A	N/A	N/A
First resort claim rate (% of warranty claims)	N/A	N/A	N/A	N/A	25%
Underwriter					
Deposit / non-completion	Insurer	Insurer	Fidelity Fund	Government	Government
Warranty	Insurer	Government	Fidelity Fund	Government	Government
Required capital base (specify amount)					
Government	0	110% of max. claim event	N/A	110% of max. claim event	110% of max. claim event
Insurer	11,000,000	110% of max. claim event	N/A	0	0
Fidelity fund	N/A	N/A	110% of max. claim event	N/A	N/A
Cost of capital (% of capital base)					
Government	N/A	8.0%	N/A	8.0%	8.0%
Insurer	12.0%	12.0%	N/A	N/A	N/A
Fidelity fund	N/A	N/A	10.0%	N/A	N/A
Claims handling expense (% of claims cost)					
Government	0.0%	10.0%	N/A	0.0%	0.0%
Insurer	10.0%	10.0%	N/A	10.0%	10.0%
Fidelity fund	N/A	N/A	10.0%	N/A	N/A
Policy administration costs (% of premium pool)					
Government	0.0%	10.0%	N/A	0.0%	0.0%
Insurer	10.0%	10.0%	N/A	10.0%	10.0%
Fidelity fund	N/A	N/A	10.0%	N/A	N/A
Profit margin to insurers for outsourcing (%)				20.0%	20.0%
Investment returns on capital base and unearned premium					
Government	5.0%	5.0%	N/A	5.0%	5.0%
Insurers	5.0%	5.0%	N/A	5.0%	5.0%
Fidelity fund	N/A	N/A	5.0%	N/A	N/A

Notes (a) For Scheme one, the Government pays any excess claim amounts greater than the $10,000,000 paid by insurers, up to an amount of $80,000,000 (so up to a total claim amount of $90,000,000)

(b) The $1 billion figure is chosen arbitrarily high, at a level greater than the level of claims expected for any period, for the purposes of modelling. In reality, either insurers or the Government would be liable for the full claims amount, however much this would be.

A 2 Comparison of all schemes

Average premium per $100 thousand contract value

Scheme	Future year 1	2	3	4	5	6	7	8	9	10
One	209	204	203	203	203	203	203	204	204	205
Two	274	275	277	277	277	277	276	276	275	274
Three	254	256	257	258	259	259	260	260	260	260
Four	235	236	237	238	238	238	238	239	238	238
Five	243	247	248	248	249	249	249	249	249	248

Average premium as a percentage of contract value

	Future year									
Scheme	1	2	3	4	5	6	7	8	9	10
One	0.21%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Two	0.27%	0.27%	0.28%	0.28%	0.28%	0.28%	0.28%	0.28%	0.28%	0.27%
Three	0.25%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%	0.26%
Four	0.23%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%
Five	0.24%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%

Present value of average future profit

Present value of future profit to ($000s)			
Scheme	Government	Insurers	Fidelity fund
One	-16,639	37,352	0
Two	417	1,673	0
Three	0	0	14,461
Four	15,183	2,954	0
Five	17,031	5,307	0

Values discounted to present value using risk free interest rates shown in Appendix C.

A 3 Scheme one

Cumulative Claims cost ($000s)		1	2	3	4	5	6	7	8	9	10
Government											
	5th percentile	0	0	0	0	0	0	0	0	0	0
	25th percentile	0	0	0	0	0	0	0	6,556	11,836	14,223
	Median	0	0	0	0	10,225	13,523	15,021	16,698	22,762	29,149
	75th percentile	0	2,010	10,776	13,777	17,389	26,959	30,796	37,551	44,972	50,960
	95th percentile	6,556	17,531	34,577	49,533	61,854	68,417	77,129	84,175	92,661	101,648
	Mean	832	3,553	6,870	10,451	14,434	18,486	22,562	26,640	31,310	36,052
Insurer											
	5th percentile	0	0	1,309	3,729	6,165	9,503	13,133	16,634	20,877	25,118
	25th percentile	59	2,384	5,658	9,719	14,687	19,779	24,647	29,735	35,247	40,775
	Median	1,231	5,436	11,307	17,517	23,215	28,812	34,925	41,258	47,191	53,476
	75th percentile	3,046	12,725	19,233	26,128	33,350	40,258	47,144	54,042	61,280	68,585
	95th percentile	12,972	22,826	32,752	41,412	50,537	59,878	67,809	75,952	84,282	92,950
	Mean	2,918	8,059	13,551	19,254	25,127	31,098	37,124	43,127	49,522	56,005

Cumulative profit/loss ($000s)		1	2	3	4	5	6	7	8	9	10
Government											
	5th percentile	-6,004	-16,560	-30,894	-45,444	-55,846	-60,305	-67,211	-72,885	-79,208	-86,977
	25th percentile	533	-481	-8,837	-9,561	-13,209	-20,316	-22,048	-27,129	-33,696	-38,014
	Median	534	1,612	2,912	4,338	-6,364	-6,843	-6,607	-6,146	-12,837	-16,897
	75th percentile	536	1,616	2,916	4,344	5,878	7,524	9,286	2,123	-1,768	-1,915
	95th percentile	542	1,628	2,933	4,362	5,900	7,546	9,307	11,192	13,201	15,337
	Mean	-342	-1,927	-3,963	-6,261	-8,899	-11,305	-13,779	-16,495	-19,407	-22,412
Insurer											
	5th percentile	-9,147	-11,145	-11,360	-10,530	-9,399	-7,705	-4,724	-1,341	1,789	5,477
	25th percentile	910	-624	2,089	5,181	8,555	12,791	17,609	23,179	29,033	34,911
	Median	2,811	6,875	10,058	14,284	19,253	24,731	30,820	37,619	44,870	52,753
	75th percentile	3,936	9,792	16,123	22,223	28,180	34,906	42,371	50,118	58,598	67,835
	95th percentile	3,996	12,199	20,953	28,997	37,606	46,570	55,936	65,478	76,028	86,994
	Mean	1,059	4,139	8,117	12,558	17,375	22,807	28,922	35,508	42,607	50,313

A 4 Scheme two

Cumulative Claims cost ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	0	0	0	16	53	104	170	249	336	430
25th percentile	0	0	28	83	163	270	408	568	761	951
Median	0	12	71	179	349	573	800	1,016	1,256	1,512
75th percentile	0	42	199	457	695	963	1,305	1,651	2,003	2,376
95th percentile	3	201	605	1,097	1,685	2,393	3,051	3,540	4,024	4,477
Mean	2	50	168	337	538	778	1,045	1,318	1,593	1,882
Insurer										
5th percentile	0	0	1,398	3,524	6,247	9,273	12,586	16,463	20,244	24,736
25th percentile	39	2,291	5,628	9,805	14,648	20,928	28,852	37,663	45,387	52,713
Median	1,155	5,174	11,234	22,019	32,562	40,403	48,437	58,141	69,818	80,622
75th percentile	3,003	15,364	29,167	38,673	51,221	64,292	77,042	90,989	103,624	116,687
95th percentile	18,323	41,645	64,185	83,622	98,586	115,125	132,220	150,291	167,140	183,205
Mean	3,725	11,261	20,154	29,131	38,111	47,622	57,783	68,025	78,580	89,301

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	21	-84	-229	-461	-744	-1,112	-1,412	-1,550	-1,715	-1,938
25th percentile	21	21	61	66	136	200	204	207	192	75
Median	24	34	160	299	425	513	634	768	869	902
75th percentile	29	40	187	373	584	802	1,003	1,189	1,333	1,448
95th percentile	52	58	200	418	670	937	1,210	1,475	1,740	1,967
Mean	28	13	82	165	261	349	429	503	564	562
Insurer										
5th percentile	-13,469	-28,773	-42,756	-52,501	-57,898	-64,883	-71,993	-80,210	-87,185	-92,732
25th percentile	1,862	-2,384	-7,060	-7,180	-10,227	-13,480	-16,387	-20,317	-22,728	-25,288
Median	3,700	7,868	10,938	9,546	8,582	10,524	12,390	12,880	11,505	11,049
75th percentile	4,821	10,765	16,573	21,851	26,599	30,132	32,096	33,475	36,000	39,183
95th percentile	4,860	13,053	20,816	28,167	35,044	41,789	48,434	54,722	61,278	67,320
Mean	1,136	1,757	1,983	2,421	3,005	3,223	2,971	2,827	2,551	2,254

A 5 Scheme three

Fidelity fund is the only participant

Cumulative Claims cost ($000s)	1	2	3	4	5	6	7	8	9	10
5th percentile	0	0	1,309	3,729	6,165	9,503	13,140	16,751	21,377	26,444
25th percentile	59	2,384	5,658	9,719	14,954	21,622	29,546	38,628	46,801	54,659
Median	1,231	5,436	11,348	22,272	33,108	41,143	50,148	60,423	72,061	83,009
75th percentile	3,046	17,780	29,225	39,555	53,576	67,092	79,608	92,972	107,043	120,442
95th percentile	18,323	42,414	66,818	85,407	103,686	120,617	136,034	152,535	171,058	188,139
Mean	3,755	11,641	20,493	29,830	39,776	49,868	60,050	70,242	81,482	92,830

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
5th percentile	-14,685	-31,370	-44,218	-55,561	-62,211	-70,951	-75,364	-83,102	-88,958	-97,315
25th percentile	518	-3,960	-6,476	-5,677	-10,116	-10,873	-10,589	-12,862	-13,967	-14,318
Median	2,456	7,528	12,200	11,784	12,669	17,365	21,724	23,664	26,393	30,920
75th percentile	3,616	10,444	18,239	25,917	33,260	39,983	44,821	49,625	56,583	65,423
95th percentile	3,716	12,903	23,068	32,688	43,102	53,972	65,226	76,959	89,036	101,342
Mean	-174	1,042	2,795	4,579	6,206	8,468	11,138	13,755	16,379	19,479

A 6 Scheme four

Cumulative Claims cost ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	0	0	1,190	3,390	5,604	8,639	11,946	15,228	19,433	24,040
25th percentile	54	2,167	5,144	8,835	13,594	19,656	26,860	35,116	42,546	49,690
Median	1,119	4,942	10,316	20,247	30,098	37,403	45,589	54,930	65,510	75,463
75th percentile	2,769	16,164	26,568	35,959	48,706	60,992	72,371	84,520	97,312	109,493
95th percentile	16,658	38,558	60,744	77,643	94,260	109,652	123,667	138,668	155,508	171,035
Mean	3,414	10,583	18,630	27,118	36,160	45,335	54,591	63,856	74,074	84,391
Insurer										
5th percentile	0	0	119	339	560	864	1,195	1,523	1,943	2,404
25th percentile	5	217	514	884	1,359	1,966	2,686	3,512	4,255	4,969
Median	112	494	1,032	2,025	3,010	3,740	4,559	5,493	6,551	7,546
75th percentile	277	1,616	2,657	3,596	4,871	6,099	7,237	8,452	9,731	10,949
95th percentile	1,666	3,856	6,074	7,764	9,426	10,965	12,367	13,867	15,551	17,104
Mean	341	1,058	1,863	2,712	3,616	4,533	5,459	6,386	7,407	8,439

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	-13,208	-28,179	-39,557	-49,642	-55,380	-63,068	-66,587	-73,256	-78,177	-85,424
25th percentile	614	-3,249	-5,326	-4,361	-8,137	-8,547	-7,969	-9,676	-10,334	-10,110
Median	2,375	7,182	11,654	11,513	12,577	17,134	21,385	23,475	26,295	30,775
75th percentile	3,430	9,833	17,142	24,363	31,295	37,686	42,399	47,070	53,752	62,143
95th percentile	3,520	12,069	21,531	30,518	40,243	50,403	60,933	71,920	83,241	94,818
Mean	-15	1,288	3,108	4,976	6,721	9,065	11,800	14,511	17,252	20,451
Insurer										
5th percentile	-1,164	-2,408	-3,241	-3,966	-4,249	-4,701	-4,764	-5,051	-5,273	-5,514
25th percentile	223	-19	-84	175	15	150	412	480	656	880
Median	395	1,014	1,598	1,742	2,021	2,638	3,254	3,658	4,167	4,795
75th percentile	497	1,279	2,150	3,025	3,884	4,695	5,348	6,009	6,883	7,927
95th percentile	503	1,498	2,589	3,642	4,772	5,959	7,201	8,492	9,831	11,181
Mean	157	442	784	1,146	1,509	1,945	2,431	2,926	3,438	3,979

A 7 Scheme five

Cumulative Claims cost ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	11	70	1,369	3,719	6,116	9,361	12,898	16,421	20,874	25,736
25th percentile	64	2,238	5,323	9,164	14,106	20,378	27,812	36,309	43,987	51,386
Median	1,130	5,012	10,495	20,577	30,610	38,124	46,541	56,123	66,951	77,160
75th percentile	2,779	16,234	26,747	36,288	49,218	61,714	73,323	85,713	98,752	111,190
95th percentile	16,668	38,628	60,923	77,972	94,772	110,374	124,619	139,861	156,948	172,732
Mean	3,425	10,653	18,809	27,447	36,672	46,056	55,543	65,048	75,515	86,087
Insurer										
5th percentile	1	7	137	372	612	936	1,290	1,642	2,087	2,574
25th percentile	6	224	532	916	1,411	2,038	2,781	3,631	4,399	5,139
Median	113	501	1,050	2,058	3,061	3,812	4,654	5,612	6,695	7,716
75th percentile	278	1,623	2,675	3,629	4,922	6,171	7,332	8,571	9,875	11,119
95th percentile	1,667	3,863	6,092	7,797	9,477	11,037	12,462	13,986	15,695	17,273
Mean	342	1,065	1,881	2,745	3,667	4,606	5,554	6,505	7,552	8,609

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
Government										
5th percentile	-13,200	-28,007	-39,262	-48,782	-54,101	-61,573	-64,907	-70,875	-75,744	-82,993
25th percentile	539	-3,353	-5,271	-3,993	-7,389	-7,504	-6,441	-7,743	-7,998	-7,589
Median	2,286	7,036	11,591	11,632	13,124	17,957	22,636	25,198	28,413	33,297
75th percentile	3,334	9,665	17,027	24,418	31,682	38,429	43,530	48,631	55,759	64,611
95th percentile	3,424	11,890	21,385	30,539	40,539	51,020	61,938	73,380	85,194	97,263
Mean	-88	1,194	3,121	5,222	7,288	10,002	13,144	16,286	19,431	22,940
Insurer										
5th percentile	-1,156	-2,374	-3,117	-3,698	-3,678	-3,728	-3,333	-3,175	-2,896	-2,689
25th percentile	221	-13	4	405	580	1,148	1,874	2,470	3,220	4,032
Median	392	1,018	1,676	1,951	2,571	3,624	4,726	5,678	6,772	8,036
75th percentile	493	1,281	2,222	3,232	4,421	5,671	6,810	8,019	9,484	11,175
95th percentile	499	1,497	2,657	3,840	5,302	6,920	8,650	10,488	12,425	14,430
Mean	156	451	868	1,366	2,062	2,926	3,890	4,912	5,995	7,148

Appendix B Fidelity fund with Government Guarantee

What this attachment covers

- Re-model of the fidelity fund scenario with a Government guarantee in place

B 1 Scenario design

At the request of the ERA, we have expanded the fidelity fund scenario to include modelling the impact of a Government guarantee. The Government guarantee will act like a bank guarantee and provide the fidelity fund with access to a 'top-up' level of capital so that it has sufficient capital to cover its largest exposure.

The fidelity fund will pay the Government for providing the guarantee. The guarantee is assumed to be automatically renewed in the event of a claim.

We have assumed that premium will be derived in the same manner as the original scenario to allow the fidelity fund to accumulate capital.

Additional assumptions are shown in the table below:

Assumption	Fidelity Fund
Role	Underwriter of non-complete and warranty risks
Retention	All, no reinsurance arrangements assumed
Claims handling (% of claims cost)	10%
Policy administration (% of premium pool)	10%
Investment return on fund balance	5% per annum
Starting capital position	$0 million and $5 million Both modelled.
Cost of capital	10.0% per annum Paid on start up capital only (not retained earnings)
Capital guarantee	Provided by Government Difference between Maximum Event Retention and net fund balance of scheme
Cost of capital guarantee (paid to Government)	8% of guarantee amount provided. Cost of capital that Government is potentially providing under guarantee.

The premium distribution is as per that described in Section 6.

Starting base of zero

The table below shows the mean (average) outcomes, if we assume that the fidelity fund commences with a zero capital starting base.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	254	256	257	258	259	259	260	260	260	260
% of average contract size (total)	*0.25%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Total premium pool	10,971	14,308	15,485	16,014	16,545	17,082	17,621	18,197	18,714	19,251
Claims cost (inc claims handling)	3,801	7,737	8,858	9,479	9,973	9,965	10,230	10,901	10,610	11,076
Government guarantee	64,074	66,244	65,131	64,038	62,992	61,417	59,538	57,171	54,845	50,122
Cumulative profit/loss	1,310	5,024	9,344	13,689	18,165	23,160	28,619	34,348	41,018	48,032

The cumulative profit/loss in the table above is the net balance of the fund after allowing for the Government guarantee and removing unearned premium and the starting capital position. It was assumed that the guarantee would apply for losses incurred in the period only.

Whilst the fund accumulates $48 million over the period, the retained profits would be used to back the maximum event risk and transition off the Government guarantee. Despite the accumulated profit the fidelity fund would still need a $50 million Government guarantee on average after the first ten years.

The table below shows the number of times that the guarantee is called upon, the income received by the Government and the cost to the Government of providing the guarantee to the fidelity fund. The model assumes that the State Government will receive 8% of the capital guarantee amount per annum. We have discounted the totals to present values.

Government guarantee $000s	Times guarantee used	Cost to Govt over period	Income received by Govt	Fidelity Fund position at end of period
5th percentile	0	0	24,467	2,606
25th percentile	0	0	34,096	22,289
Median	1	11,618	46,204	49,058
75th percentile	3	39,316	58,436	79,441
95th percentile	6	102,735	83,713	118,940
Mean	2	27,379	48,446	53,226

Note: Fidelity Fund position is before adjustment for unearned premium liabilities.

Due to the high cost of capital guarantee assumed, the Government will generate income in excess of the cost of providing a capital guarantee in over 75 percent of the simulations.

The estimation of an appropriate cost of capital is a trade off that the Government will need to consider. A lower cost of capital (for the same premium pool) will lead to quicker accumulation of retained profits for the fidelity fund and a faster reduction in the level of guarantee provided. However it will increase the likelihood that the Government will face a net loss at the end of the period.

Starting base of $5 million

The table below shows the main outcomes, if we assume that the fidelity fund commences with a starting base capital of $5 million. Whilst this will decrease the likelihood that the fund will need to call on the Government

guarantee to some extent, it will act in a greater function to reduce the amount of guarantee provided and the actual cost of that guarantee when called upon.

Mean outcome ($000s)	1	2	3	4	5	6	7	8	9	10
Premium per $100,000 ($)	254	256	257	258	259	259	260	260	260	260
% of average contract size (total)	*0.25%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*	*0.26%*
Estimated maximum loss	540,192	717,188	779,514	806,748	832,223	857,244	882,165	907,410	930,795	954,804
Total premium pool	10,972	14,307	15,493	16,016	16,543	17,084	17,639	18,195	18,715	19,266
Claims cost (inc claims handling)	3,712	8,029	8,881	9,578	9,655	10,058	10,236	10,106	10,611	11,047
Government guarantee	59,106	62,212	61,910	61,259	60,292	59,177	57,603	55,318	53,845	49,744
Cumulative profit/loss	711	3,496	7,157	11,101	15,444	20,097	25,312	31,319	37,615	44,640

The fund accumulates $44 million over the period, after removing the starting position of $5 million. Inclusive of the $5 million starting capital the fidelity fund would be at a similar position to the first scenario.

Interestingly whilst the size of the Government guarantee required in the first years of the projection is approximately $5 million more in first scenario, this is steadily eroded over time, with the Government guarantee at time 10 only being marginally lower under this scenario.

This is further reinforced by the table below which shows that the $5 million starting capital base does not affect the number of times that the guarantee is called upon, due to the severity of an event in which it would be needed. It also does not greatly affect the income received by the State Government or cost of providing that guarantee.

Government guarantee $000s	Times called upon	Cost over 10 year period	Income received	Fidelity Fund position at end of period
5th percentile	0	0	20,685	3,066
25th percentile	0	0	30,245	21,237
Median	1	6,219	44,201	48,923
75th percentile	3	35,617	57,949	83,706
95th percentile	6	101,437	84,484	126,016
Mean	2	24,844	46,437	54,836

Note: Fidelity Fund position is before adjustment for unearned premium liabilities.

This does suggest that given the market concentration within the WA industry that the fidelity fund would need a significant amount of starting capital to effectively reduce the size of the guarantee provided by the end of the ten year period.

B 2 Comments

The introduction of a Government guarantee, in a simplistic form, does suggest that a fidelity fund may eventually become viable over time. It also suggests that, on average, the Government could receive a level of income that will exceed losses in the majority of cases.

We note that the model assumes that the fidelity fund correctly allows for the cost of this guarantee and adopts a higher than required premium level to ensure that it accumulates retained profits to ease off the guarantee. Close monitoring and review by the Government will be required to ensure that this happens.

However this assumes that the:

- Fidelity fund will pay a reasonable fee for securing the additional income
- Fidelity fund will set premiums in such a way
- Government will automatically renew the guarantee in the event of a collapse.

The Government should take into consideration its cost of capital when/if providing a capital guarantee. The higher the cost of the guarantee, the less capital that the fidelity fund is likely to accumulate, but more income the Government will receive to offset its liabilities.

A lower cost of guarantee could also be used to reduce the overall premium, however this will also reduce the ability of the fidelity fund to generate retained profits to eventuate transition off the guarantee and increase the severity of any payment the Government is required to make.

In any situation the capital guarantee should be set so that, in total, the capital that the fund has access to, will exceed its largest exposure.

B 3 Simulation results

Starting base of zero

Cumulative Claims cost ($000	1	2	3	4	5	6	7	8	9	10
5th percentile	0	0	0	0	0	0	0	0	0	0
25th percentile	39	194	236	253	262	268	278	287	295	302
Median	1,155	2,978	3,717	4,028	4,141	4,159	4,168	4,403	4,178	4,182
75th percentile	3,015	6,639	7,762	8,183	8,497	8,604	8,765	9,271	8,916	9,207
95th percentile	18,459	28,126	32,204	33,973	35,397	36,306	36,817	38,104	38,677	40,075
Mean	3,801	7,737	8,858	9,479	9,973	9,965	10,230	10,901	10,610	11,076

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
5th percentile	-2,699	-3,493	-3,720	-3,482	-3,031	-2,198	-2,215	-2,135	-2,046	-2,269
25th percentile	102	1,930	2,657	3,913	5,209	7,696	10,158	11,829	14,392	17,110
Median	1,862	5,823	10,531	14,613	17,428	20,959	26,028	31,296	37,241	43,834
75th percentile	3,037	8,730	15,525	22,917	30,617	38,703	45,916	54,110	63,509	74,211
95th percentile	3,099	11,210	20,404	29,992	40,898	52,996	66,396	80,961	97,187	113,711
Mean	1,310	5,024	9,344	13,689	18,165	23,160	28,619	34,348	41,018	48,032

Starting base of $5 million

Cumulative Claims cost ($000	1	2	3	4	5	6	7	8	9	10
5th percentile	0	0	0	0	0	0	0	0	0	0
25th percentile	16	218	240	253	262	270	276	285	293	300
Median	1,155	3,061	3,666	3,908	4,109	4,161	4,166	4,171	4,178	4,181
75th percentile	2,988	6,823	7,712	8,162	8,319	8,647	8,649	8,358	8,984	8,891
95th percentile	18,271	28,746	32,191	34,297	35,153	36,101	37,014	37,465	38,643	40,052
Mean	3,712	8,029	8,881	9,578	9,655	10,058	10,236	10,106	10,611	11,047

Cumulative profit/loss ($000s)	1	2	3	4	5	6	7	8	9	10
5th percentile	-7,664	-8,507	-8,625	-8,377	-7,870	-7,651	-7,611	-7,567	-7,565	-7,017
25th percentile	259	-2,432	-2,689	-753	1,068	2,671	4,182	6,559	8,679	11,010
Median	2,071	5,706	8,993	10,773	13,345	17,214	22,119	27,698	32,885	38,677
75th percentile	3,233	8,935	15,801	23,026	30,381	37,453	44,013	52,210	61,668	73,490
95th percentile	3,276	11,589	20,970	30,954	41,822	54,167	67,760	82,983	99,681	115,770
Mean	711	3,496	7,157	11,101	15,444	20,097	25,312	31,319	37,615	44,640

Appendix C References

What this attachment covers

- List of resources we used in researching this project.

C 1 References

The following articles and publications were used as references for the preparation of this report:

- HIA release, 'New Home Sales climb off the mat in October', *HIA media release*, 29 November 2012
- Kim Macdonald, 'Trade shortage to hit new home build times', *The West Australian*, 28 November 2012, P1
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- Shane Goodwin & Rob Wild, 'Construction Industry Update and Outlook', *HIA and Cordell*, September 2012
- Transport, Housing and Local Government committee, 'Inquiry into the Operation and Performance of the Queensland Building Services Authority 2012', *Parliamentary Committees release*, November 2012
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- Builders Registration Board, '2010/11 Annual Report', *Builders Registration Board*, 6 October 2011

  www.hiainsurance.com.au/productgroups/homewarrantyinsurance.html. Accessed 12 December 2012
- Department of Consumer and Employment Protection, 'Home building. Home Building Contracts Act 1991', November 2007
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- South Australia, 'Building Work Contractors Act 1995'
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- Victoria, 'Building Act 1993'
- Queensland Building Services Authority, 'Queensland Building Services Authority Act 1991'
- *Tasmania, Housing Indemnity Act 1992*
- Northern Territory, *Building Amendment (Residential building consumer protection) bill 2011, which amends the Building Act*
- Public submissions to the issues paper released by the ERA on 5 July 2012 titled 'Inquiry into Western Australia's Home Indemnity Insurance Arrangements – Issues Paper' from the following:
  - Artique Homes
  - Builders Collective of Australia
  - Calliden
  - Department of Treasury

  - Housing Industry Association Limited
  - Kaizen Construction
  - Ken Little Homes
  - Master Builders Association (WA)
  - MBA Insurance Services Pty Ltd
  - National Insurance Brokers Association of Australia

- NSW Government, 'Home Warranty Insurance Fund Report as at 31 August 2012', *The Treasury Self Insurance Corporation*
- Essential Services Commission, 'Performance of Victoria's Domestic Building Insurance Scheme 2010-2011', April 2012
- Queensland Building Services Authority, 'Annual Report 2011-2012'

Appendix D Housing market assumptions

What this attachment covers

- Assumptions used to model the WA housing market.

D 1 Housing industry assumptions

Distribution of housing market

Builder Group	Defined characteristics Number of builders	Combined market share of builders	Average contract size ($000s)	Deposit time (years)	Construction time (years)	Probability of failure (per quarter)
1	1	14.00%	200,000	0.25	0.50	0.20%
2	1	11.50%	250,000	0.25	0.50	0.20%
3	1	6.50%	280,000	0.25	0.50	0.20%
4	1	0.50%	50,000	0.25	1.00	0.25%
5	2	0.50%	50,000	0.25	0.50	0.50%
6	4	1%	50,000	0.25	0.75	0.50%
7	5	1%	50,000	0.25	1.00	0.50%
8	10	6%	250,000	0.25	0.50	0.25%
9	17	46%	250,000	0.25	0.75	0.25%
10	13	3%	250,000	0.25	1.00	0.25%
11	7	1%	250,000	0.25	0.50	0.50%
12	12	5%	250,000	0.25	0.75	0.50%
13	14	3%	250,000	0.25	1.00	0.50%
14	3	1%	600,000	0.25	0.50	0.25%
15	5	1%	600,000	0.25	0.75	0.25%
16	4	0.50%	600,000	0.25	1.00	0.25%
Total	**100**	**100.0%**				

Distribution of housing starts

Builder group	Forecast housing starts for each builder in year 1	2	3	4	5	6	7	8	9	10
Total WA starts	17,500	22,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000	23,000
1	2,450	3,080	3,220	3,220	3,220	3,220	3,220	3,220	3,220	3,220
2	2,013	2,530	2,645	2,645	2,645	2,645	2,645	2,645	2,645	2,645
3	1,138	1,430	1,495	1,495	1,495	1,495	1,495	1,495	1,495	1,495
4	88	110	115	115	115	115	115	115	115	115
5	44	55	58	58	58	58	58	58	58	58
6	44	55	58	58	58	58	58	58	58	58
7	18	22	23	23	23	23	23	23	23	23
8	105	132	138	138	138	138	138	138	138	138
9	468	589	616	616	616	616	616	616	616	616
10	40	51	53	53	53	53	53	53	53	53
11	25	31	33	33	33	33	33	33	33	33
12	73	92	96	96	96	96	96	96	96	96
13	38	47	49	49	49	49	49	49	49	49
14	29	37	38	38	38	38	38	38	38	38
15	35	44	46	46	46	46	46	46	46	46
16	22	28	29	29	29	29	29	29	29	29

D 2 Economic assumptions

Discount rate

	Future year 1	2	3	4	5	6	7	8	9	10
Discount rate	2.89%	2.46%	2.54%	2.81%	3.06%	3.29%	3.52%	3.73%	3.92%	4.10%
Discount factor	0.986	0.960	0.937	0.912	0.886	0.859	0.831	0.802	0.772	0.742

Inflation rate

Future year	1	2	3	4	5	6	7	8	9	10
Inflation rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
End of year factor	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344

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