NT WorkSafe

Actuarial review of Northern Territory workers compensation scheme as at 30 June 2017

June 2018





Stephen Gelding
Executive Director
NT WorkSafe
Department of Attorney-General and Justice
Northern Territory Government
Level 1, Darwin Corporate Park
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BERRIMAH NT 0828

13 June 2018

Dear Stephen

Please find our report attached which details our findings from the following analyses for NT WorkSafe:

- Calculation of the funding ratio based on 30 June 2017 outstanding claims liability valuations for insurers and self-insurers
- Calculations of the break-even premium rate for each prior accident year using data to 30 June 2017, including a review of the trends in the required premium and a comparison to the premium rates actually charged by insurers
- An estimate of the break-even premium rate for the 2017/18 underwriting year.

Yours sincerely

Esa climpion

Lisa Simpson Kathryn Cannon

Fellows of the Institute of Actuaries of Australia

Key findings

The review indicates that the scheme is fairly stable on a financial basis with the break-even premium rate similar to the actual premium rate charged. However, the profitability on a financial year basis is variable with the most recent three financial years incurring a loss. Also, as the insurer funding ratio is slightly below 100% this year, at 99%, in aggregate the insurers' reserves may be less than sufficient.

Funding ratio

The funding ratio measures the liabilities held by the insurers (the notional assets) compared to the aggregate outstanding claims liability calculated by the scheme actuary. This is used to represent the ability of the scheme in aggregate to meet its liabilities.

The following table shows the funding ratio as at 30 June 2017 for insurers, self-insurers and for the whole scheme. The PwC central estimate excludes any risk margin. By comparison, the insurers' provisions include a risk margin, and the self-insurers' provisions include the 50% loading for the bank guarantee.

Funding ratio (\$000s)				
	Actual	PwC central	Difference (\$000s)	Funding ratio
	provisions (a)	estimate (b)	(b) - (a)	(a) / (b)
Insurers	359,368	364,496	5,128	99%
Self-insurers	4,557	2,830	-1,727	161%
Total	363,924	367,326	3,401	99%

Notes: see section 2 of this report

As at 30 June 2017 the insurers' funding ratio was 99% while the self-insurers' funding ratio was 161%. The insurers' funding ratio decreased from 102% as at 30 June 2016 and the self-insurers' funding ratio increased from 138%.

The decrease in the insurers' funding ratio was due to the insurers' provisions decreasing while our central estimate remained stable compared to 30 June 2016. We are not provided with a reconciliation for the insurers' provisions, so cannot identify the drivers of the insurers' increase.

The increase in the self-insurer funding ratio is due to the self-insurers' provisions decreasing by less than our central estimate compared to 30 June 2016. We are not provided with a reconciliation for the self-insurers' provisions, so cannot identify the drivers of the insurers' increase.

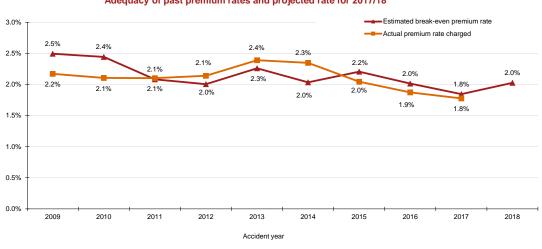
A ratio above 100% implies that, in aggregate, insurers are holding sufficient reserves to be likely to meet our central estimate of future claims costs. This year, the funding ratio has decreased to slightly below 100%. We make the following comments which should be borne in mind when considering the funding ratio:

- The insurers' actuaries have access to more detailed claims data than we have to estimate the liabilities
- Insurers hold assets in excess of their liabilities due to APRA capital requirements and their own risk appetite
- Some insurers may be holding greater than 100% of our notional allocation to them, while others may be holding less. Of concern would be any insurers who are well below 100%.

The above projections involve assumptions about future uncertain claim events and economic, social and legislative conditions and hence the actual outcome may well be different from the results shown above. This should be borne in mind whenever using the results. In particular, the 2016 and 2017 accident year costs are more uncertain than those for earlier accident years, and hence could ultimately be notably different to those estimated.

Insurer premium adequacy

The following graph shows the estimated break-even premium rates, using all experience to date, and compares this to the actual premium rates charged by insurers. The graph also shows our projected break-even premium rate for 2017/18.



Adequacy of past premium rates and projected rate for 2017/18

The break-even premium rate is calculated on an inflated and discounted basis, gross of reinsurance, and does not allow for a profit margin.

There has been mixed experience in the sufficiency of actual premium rates charged by insurers over 2009 to 2017 shown in the graph above. Actual premium rates charged by insurers were more than sufficient in 2012, 2013 and 2014, were similar to estimates of break-even rates in 2011 and 2017, but were not sufficient to cover the estimated break-even cost for accident years ending 2009, 2010, 2015 and 2016.

Our projected break-even premium rate for 2018 is 2.0%, which is in line with the last two years' estimated break-even premium rates and actual premium rates charged, of between 1.8% and 2.0%.

The estimated break-even premium rates for accident years 2016 to 2018 include an allowance for the 2015 legislative changes. See Appendix B6 for a summary of the changes.

As per last year, the actual premium rates are based on developed earned premium for 2011 onwards. This better matches the time period of the claims cost. Conversely, the 2010 and earlier years continue to use premium processed as per prior reviews, as earned premium was not available.

The change in the break-even premium is the average change across all policies. Actual premiums charged to an employer could have greater volatility each year, particularly for small employers, and their change will depend on their experience and size.

Key scheme trends

Claim statistic	Insurer	Self-insurers
Number of claims incurred	Decreasing trend in claim number since peak in 2013. Total for 2017 is 2,438. Claim frequency is also decreasing due to the significant increases in wages up to 2015 and recent decreases in claim numbers for recent years. Frequency is estimated to be 3.1% in 2015, 3.0% in 2016 and 2.8% in 2017.	Decreasing trend from high 2011 continues. 2017 incurred claims is 89, which is lower than 122 claims in 2016.
Average claim size	2017 average claim size is \$45,600, which is lower than 2015 and 2016 but higher than most prior years.	Lower than insurers, just under \$19,500 in the 2017 accident year. This is high compared with 2016 (\$17,000) and most prior years.
Incurred cost	2017 incurred cost is \$111.1 million, which is lower than 2015 and 2016 but similar to 2013 and 2014.	2017 accident year is \$1.7 million which is between the three most recent accident years.
Gross loss ratio	2017 is 85% which is the slightly lower than 2015 and 2016 but above 2011 to 2014.	n/a
Distribution by payment type	Redemption and non-economic lump sums and weekly benefits combined account for two-thirds of the total incurred cost and payments each financial year.	n/a
	The distribution of payments for the last seven accident years has remained fairly stable.	

Risks and uncertainties

The key risks and uncertainties to the Northern Territory (NT) scheme are:

Inpex project

Significant increases in wages over recent two financial years have been driven by the Inpex project and the associated contracts. The number of claims incurred and claims cost have not reflected the increase in wages, causing the claim frequency and premium rate to reduce. We understand that over the 2018

financial year the construction phase is winding down and moving towards the production phase. Therefore, the number of workers will reduce significantly. As the project moves into production phase, this may significantly reduce the premium pool for the NT scheme in future years. There may be an increase in claims due to late claim reports if people cannot find alternative work, in the absence of new contracts commencing.

Changing economic environment

There is considerable uncertainty associated with the current economic environment and what it will mean for Australia over the near future. Aside from the Inpex project discussed above, there may be more general real wage decreases or increases in bad debts for insurers.

Over the last three to five financial years, there has been a reduction in the number of small claims lodged with other schemes. At the same time, there has not been a reduction in the number of medium to large claims. This has impacted the overall average claim size and incurred cost for other schemes. In the NT, there has been small reductions in claims less than \$1,000 over the past 15 years but not to the same extent in recent years as other state schemes. We will continue to monitor the mix by size of claims lodged in NT to ensure that we adequately allow for any change in claiming behaviour.

Large claims

The incurred cost and break-even premium for each accident year are heavily influenced by the presence or absence of any large claims. This is particularly prevalent in the NT due to the small scheme size and the prevalence of very large settlements. Future claims costs will continue to be impacted by very large settlements, with net costs to insurers impacted by the nature and adequacy of any reinsurance arrangements in place.

Large claims can also have an impact on superimposed inflation. While superimposed inflation remained fairly stable this year, it can be volatile due to the impact of large settlements and the relatively small scheme size. Superimposed inflation should be monitored to make sure increases in costs are understood and ensure that a payment type is not unexpectedly driving an increase in costs.

2015 legislative amendments

The 2015 legislative amendments are for prospective claims only, and were introduced in two stages. The main changes are effective from 1 July 2015, with additional changes effective from 1 October 2015. This creates additional uncertainty in the outstanding claims liabilities for the 2015/16 and 2016/17 accident years and the future costs for the 2017/18 accident year. In separate advice, PwC estimated that there would be a 2.8% reduction in respect of the most significant benefit changes. We have not estimated the impact of other changes. As the changes are not retrospective, this should not impact outstanding claims liabilities for accident years prior to 2015/16.

We recommend WorkSafe NT and insurers closely monitor the experience to ensure that there are not any unintended consequences. See Appendix B6 for more information.

Contents

Key	finding	S	
1	Abou	at this report	1
	1.1	Context for our review	2
	1.2	Disclaimer	3
	1.3	Compliance with standards	3
2	Insur	er outstanding claims liabilities	5
	2.1	Outstanding claims liability	6
	2.2	Claims statistics	9
	2.3	Actual vs expected claims experience over 2016/17	11
	2.4	Reconciliation of estimates	12
3	Self-	insurer outstanding claims liabilities	13
	3.1	Outstanding claims liability	14
	3.2	Claims statistics	15
	3.3	Actual vs expected claims experience over 2016/17	17
	3.4	Reconciliation of central estimates	17
4	Brea	k-even premium rates	18
	4.1	Adequacy of past premiums	19
	4.2	Forecast break-even premium rate	22
5	Data	and methods	23
	5.1	Data provided	24
	5.2	Data quality and reconciliation	25
	5.3	Data enhancements and additional data	26
	5.4	Projection methods for outstanding claims	26
	5.5	Approach to estimate break-even premium rates	28
6	Assu	mptions	29
	6.1	Financial assumptions	30

Conte	nis		PWC
	6.2	Superimposed inflation	31
	6.3	Expenses	31
	6.4	Reinsurance	32
	6.5	2015 legislative amendments	33
7	Uncer	rtainty	34
	7.1	Uncertainty in the estimates	35
	7.2	Determination of provisions	35
	7.3	Key risks for NT WorkSafe scheme	38
Apper	ndix A	Detailed data description	42
Apper	ndix B	Assumptions	48
Apper	ndix C	Insurer outstanding claim valuation	58
Apper	ndix D	Insurer claims statistics	75
Apper	ndix E	Insurer financial year claims experience	82
Apper	ndix F	Self-insurer outstanding claims valuation	89
Apper	ndix G	Self-insurer claims statistics	97
Apper	ndix H	Insurer break-even premium rate	101
Apper	ndix I	Glossary	108

1 About this report

Key points of this section

- NT WorkSafe have engaged us to value the outstanding claims liability for the scheme as at 30 June 2017 and review the adequacy of premium rates charged by insurers
- We have complied with the relevant actuarial and accounting standards when performing this review.

About this report PwC

1.1 Context for our review

This report has been prepared for NT WorkSafe and the Scheme Monitoring Committee in accordance with contract number D16-0211, dated 4 November 2016. Under this contract we have conducted the following analyses which are detailed in this report:

- Calculation of the funding ratio based on 30 June 2017 outstanding claims liability valuations for insurers and self-insurers
- Calculations of the break-even premium rate for each prior accident year using data to 30 June 2017, including a review of the trends in the required premium and a comparison to the actual premium rates charged by insurers
- An estimate of the break-even premium rate for 2017/18, based on historic data and future inflation assumptions.

We have prepared this report for the NT workers compensation scheme for a few years. Our previous valuation was conducted using data as at 30 June 2016, the findings of which are detailed in our 16 June 2017 report titled *Actuarial review of Northern Territory workers compensation scheme as at 30 June 2016.*

Our review is for the following four active insurers:

- Allianz Australia Insurance Limited (including Territory Insurance Office (TIO))
- CGU Insurance Australia (Part of Insurance Australia Limited)
- GIO Insurance Australia (also known as AAI)
- QBE Insurance Australia

and the following four active self-insurers:

- Catholic Church Insurance
- Coles Supermarkets Australia Pty Ltd
- Westpac Banking Corporation
- Woolworths Supermarkets.

The analysis excludes Government Self Insurance and uninsured claims.

At 30 June 2014, TIO was a separate insurer. However, over the 2015 financial year it was purchased by Allianz.

The report is structured as follows:

- Sections 2 and 3 of this report present the outstanding claims liability valuations for insurers and selfinsurers respectively
- Section 4 analyses the break-even premium rates for past underwriting years and the adequacy of the rates actually charged by insurers
- Section 5 details the data and methodology we have used
- Section 6 and section 7 outline the assumptions adopted in this review and considers the uncertainty in the work we have carried out, including some key risks faced.

PwC About this report

1.2 Disclaimer

Report and Advice

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

You agree to use this report only in connection with the purpose in respect of which this report is provided being to present the outstanding claims liability as at 30 June 2017 and review the adequacy of premium rates charged by insurers operating under the scheme. We therefore accept no liability or responsibility for any loss or damage arising from use of the report for any other use or purpose.

Judgements based on the contents of this report should be made only after studying the report and the appendices in their entirety, as conclusions reached by a review of an aspect or section in isolation may be misleading.

The advice contained in this report has been prepared on the instructions of NT WorkSafe in accordance with the terms of reference in the tender document referred to in section 1.1 above and is based on the information and data provided to us.

The conclusions reached in this report are reliant on the completeness and accuracy of information compiled and provided by NT WorkSafe, and by insurers and self-insurers to NT WorkSafe. Other than preliminary data checks, we have not conducted an independent review of this information. We do not accept any liability or responsibility for errors or omissions arising from the provision of inaccurate or incomplete information to us.

Third Parties

This report and the advice contained in it are confidential. 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
- We accept no liability or responsibility to any other person or entity other than NT WorkSafe in relation to this report and
- No-one other than NT WorkSafe should rely on this report for any purpose.

1.3 Compliance with standards

1.3.1 Outstanding claims liabilities

The approach for calculating the outstanding claims liabilities is consistent with that required by the Accounting Standards for private and State Government general insurers (AASB1023), and APRA's prudential standard *GPS320 Actuarial and Related Matters* where applicable. It also complies with the Institute of Actuaries of Australia's Professional Standard PS300 to the extent possible given the data available.

We have not performed a full review of asbestos liabilities due to lack of available data.

1.3.2 Premium rates

Our advice to you constitutes Actuarial Advice as defined in the Code of Professional Conduct (the Code) issued by the Institute of Actuaries of Australia and our advice complies with the Code in this respect.

2 Insurer outstanding claims liabilities

Key points of this section

- Our estimate of the net outstanding claims provision as at 30 June 2017 is \$417.5 million, which is the same as the provision as at 30 June 2016
- This provision is \$58.1 million (16.2%) higher than insurers' own provisions of \$359.4 million. This difference is higher than the 30 June 2016 difference of \$46.2 million (12.4%)
- The funding ratio is 99% which is lower than 102% last year
- The number of claims incurred has decreased since the peak in 2013 and there is also a decreasing trend in the claim frequency. In 2017, the number of claims incurred is 2,438
- Average claim size for 2017 is estimated to be below 2015 and 2016 but higher than other recent years
- The reconciliation of our gross estimates, excluding claims handling expenses, to our estimates as at 30 June 2016 shows a release on reserves of \$5.7 million, which is 1.5% of the opening estimates.

2.1 Outstanding claims liability

2.1.1 Our estimates

The table below shows our central estimate results by payment type group *in current values, including 2015 legislative amendments and excluding claims handling expenses*:

Estimates of outstanding claims at 30 June 2017 (\$000s) (a) (b) Allied Health, Vocactional Rehabilitation, Redemptions								
Accident year ending 30 June	Weekly Benefits	Medical And Hospital	Non-	Other Goods And Services	Legals	And Non- Economic Lump Sum	Active large claims allowance	Total
2017	26,415	8,218	9,126	3,376	6,267	34,319	0	87,721
2016	14,487	3,102	4,674	1,623	5,054	31,097	5,002	65,039
2015	11,135	2,156	2,598	1,529	3,729	26,638	13,061	60,847
2014	6,961	1,521	1,546	1,134	2,389	17,919	0	31,469
2013	5,649	1,332	1,261	918	1,803	13,560	0	24,524
2012	3,369	787	712	562	951	7,006	0	13,387
2011	1,990	441	360	268	498	3,845	0	7,401
2010	2,878	641	506	374	524	5,527	0	10,450
2009	1,977	447	356	241	389	4,043	4,856	12,307
2008 & earlier	8,215	2,091	1,446	1,123	1,520	17,950	24,013	56,360
Total	83,077	20,736	22,584	11,148	23,125	161,904	46,932	369,506

Notes: (a), (b) from appendix C4

The table shows that the largest component of the outstanding claims liability relates to the *redemptions and non-economic lump sum* payment group (44% of the total), followed by *weekly benefits* (23% of the total).

Further detail on the parameters adopted to calculate the outstanding claims can be found in Appendix C. For further analysis on the composition of the incurred cost of claims by payment group see Appendix E2.

To generate the gross central estimates, the current value estimates are inflated and discounted, as follows:

Gross estimates at 30 June 2017 excluding expenses (\$000s) Accident						
year ending	30 June 2017	Inflated	Infl/disc			
30 June	values	values	values			
2017	87,721	95,523	88,477			
2016	65,039	71,679	65,664			
2015	60,847	67,735	61,503			
2014	31,469	34,986	31,737			
2013	24,524	27,481	24,741			
2012	13,387	15,184	13,516			
2011	7,401	8,464	7,476			
2010	10,450	11,893	10,554			
2009	12,307	13,714	12,443			
2008 & earlier	56,360	62,528	56,973			
Total	369,506	409,188	373,083			

An allowance for reinsurance recoveries, claims handling expenses and a risk margin are included in the gross inflated/discounted estimates to arrive at the net outstanding claims provision:

	Gross o/s	Reinsurance	Net o/s	Claims handling	Net central	Risk	Net
	liability (a)	recoveries (b)	liability (c)	expenses (d)	estimate (e)	margin (f)	Provision (g)
Total	373,083	29,219	343,864	20,632	364,496	53,001	417,497
Notes: (a)	from table abov	re					
(b)	allows for 100%	reinsurance recov	eries on large c	laims			
(c)	= (a) - (b)						
(d)	= (c) x 6%, see	section 6.3 for deta	ails of the claims	handling expense	s		
(e)	= (c) + (d)						
(f)	= (e) x 14 54%	see section 7.2.2 f	or details on the	risk margin			

The inflated and discounted gross central estimate of \$373.1 million is \$10.3 million (2.7%) lower than the equivalent estimate as at 30 June 2016. This decrease is driven by the increases in the real rates of returns partially offset by an increase in the outstanding estimates, particularly for redemptions and non-economic lump sums.

Net results have only been provided in total, as reinsurance recoveries depend on the large claims experience in each accident year and individual insurers' reinsurance treaties. The net provision at 30 June 2017 is \$417.5 million, which is the same as the estimated provision as at 30 June 2016. The change in the net provision is less than the decrease in the gross central estimate. This is because there was a decrease in the estimated outstanding reinsurance recoveries compared to our 30 June 2016 valuation.

Since the 2016 financial year, insurers have provided us with more information about which claims are likely to receive a reinsurance recovery, to better allow for the estimate of reinsurance recoveries. However, we are not providing this information on an accident year basis in the report due to commerciality reasons.

2.1.2 Comparison with insurers

= (e) + (f)

(g)

We have compared our gross and net outstanding claim estimates to the insurers' estimates in total. As mentioned above, we have not compared the results by accident year, due to insurer commerciality reasons.

Gross estimates at 30 June 2017 excluding expenses (\$000s)							
	Insurers'	PwC	Difference (\$000s)	Difference (%)			
	estimate (a)	estimate (b)	(b) - (a)	(b) / (a) - 1			
Total	348,853	373,083	24,230	6.9%			

Notes:(a), (b) = gross inflated and discounted values excluding claims handling expenses

Net provision at	: 30 June 2017 (\$000s)			
	Insurers'	PwC	Difference (\$000s)	Difference (%)
	provisions (a)	provision (b)	(b) - (a)	(b) / (a) - 1
Total	359,368	417,497	58,129	16.2%

Notes:(a), (b) = net inflated and discounted values including reinsurance, claims handling expenses and risk margin

As at 30 June 2017, our gross estimate is \$24.2 million (6.9%) higher than that of the insurers. This compares to our estimate being \$14.5 million (3.9%) higher than that of the insurers at 30 June 2016. The difference is due to different underlying methods and assumptions used by the insurers compared to us in the valuation. A key driver of this difference may relate to the uncertainty associated with large claims and future development on these.

Our net provision is higher than that of the insurers due to different reinsurance recoveries and risk margin assumptions. Individual insurers would be expected to have a lower risk margin than the scheme, due to diversification benefits and overall larger portfolio sizes from writing other classes of business.

Funding ratio

The funding ratio measures the liabilities held by the insurers (the notional assets) compared to the aggregate outstanding claims liability calculated by the scheme actuary. This is used to represent the ability of the scheme in aggregate to meet its liabilities.

For insurers, the funding ratio compares the insurers' net provision (i.e. including risk margin) with our central estimate (i.e. excluding risk margin). This is shown in the table below:

Funding ratio (\$	000s)			
	Actual	PwC central	Difference (\$000s)	Funding ratio
	provisions (a)	estimate (b)	(b) - (a)	(a) / (b)
Insurers	359,368	364,496	5,128	99%

Notes: (a) as per table above, net provision including risk margin

(b) net central estimate, excluding risk margin

The aggregate funding ratio is 99%, which is a decrease from 102% last year. Compared to the valuation result at 30 June 2016 our central estimate has remained stable while the insurers' provisions decreased which is why the funding ratio decreased. We are not provided with a reconciliation for the insurers' provision so cannot identify the drivers of the insurers' increase. Part of this may be due to differences in allowances for the valuations by payment type and future large claims development.

A ratio above 100% implies that, in aggregate, insurers are holding sufficient reserves to be likely to meet our central estimate of future claims costs. This year, the funding ratio has decreased to slightly below 100%. We make the following comments which should be borne in mind when considering the funding ratio:

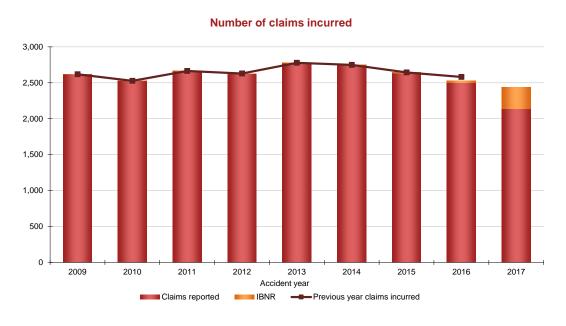
- The insurers' actuaries have access to more detailed claims data than we have to estimate the liabilities
- Insurers hold assets in excess of their liabilities due to APRA capital requirements and their own risk appetite
- Some insurers may be holding greater than 100% of our notional allocation to them, while others may be holding less. Of concern would be any insurers who are well below 100%.

2.2 Claims statistics

The following sub-sections show the claims experience by accident year. For more graphs of claims statistics, including by financial year, see appendices D and E.

2.2.1 Number of claims incurred

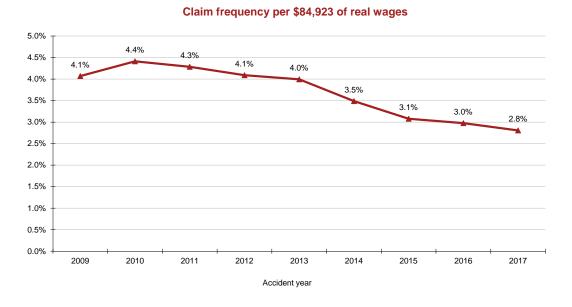
Decreasing trend from 2013 peak to 2017



The main points to highlight from this chart are:

- Since 2009, the number of claims incurred has varied from one year to the next, but has generally exhibited stability
- For the 2009 to 2012 accident years, the number of claims incurred was between 2,500 and 2,700
- There was a spike in the number of claims incurred for the 2013 accident year to just under 2,800
- From the 2013 to 2017 accident years, there has been a decreasing trend in the number of claims incurred
- Incurred claims estimated for the 2017 accident year are 2,438, which is 93 (3.7%) fewer than 2016.

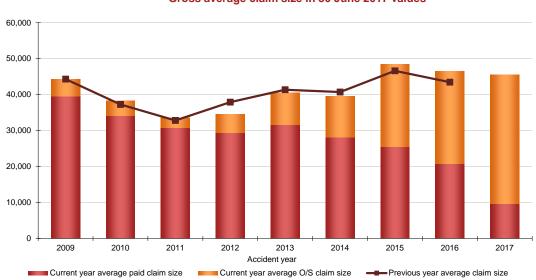
Declining claim frequency due to significant increases in wages up to 2015 and more recently reducing numbers of claims incurred



See Appendix D1 for the formula to calculate the claim frequency.

2.2.2 Gross average claim size

Average claim size for 2017 is estimated to be below 2015 and 2016 but higher than other years



Gross average claim size in 30 June 2017 values

Since 2009 the gross average claim size (in 2017 values):

- Exhibited volatility due in part to large claims, which have the largest impact on 2009 and 2015
- Dropped to a low of around \$33,600 in 2011, caused by lower than average redemption payments

- Exhibited an increasing trend from around \$33,600 in 2011 to around \$48,500 in 2015
- Decreasing trend from the very high 2015 to around \$45,600 in 2017.

The uncertainty about the future development means that the ultimate level and our estimates may differ from those projected for recent accident years. This is especially true for the 2017 accident year, where a high proportion (79%) of the average claim size relates to uncertain future claims development.

Compared to the previous valuation, the gross average claim size is similar for most years with the exception of 2012, where estimates decreased. This was due to a decrease in the size of a large claim. Conversely, 2016 increased due to the higher than expected payments and development, mainly on a large claim.

Appendix E contains the average claim size split by payment type. The mix of payment types across the accident years has remained fairly stable. Redemptions and non-economic lump sums are the largest payment type, closely followed by weekly benefits. These two payment types account for two thirds of total incurred costs.

2.3 Actual vs expected claims experience over 2016/17

2.3.1 Claims incurred up to 30 June 2016

Actual experience compared to the expected experience over 2016/17 for claims incurred up to 30 June 2016 showed:

- Claim reports were lower than expected (276 actual compared to 327 expected)
- The proportion of claims finalised was higher than expected (64.5% compared to 63.0%)
- Claim payments were higher than expected (\$98.5 million actual compared to \$97.3 million expected).

Expected experience is taken from the previous scheme report dated 16 June 2017. See appendix C2 for full details.

The impact of this experience is quantified in the reconciliation in section 2.4.

2.3.2 Claims incurred over 2016/17

The actual experience for claims incurred over 2016/17 compared to expected showed:

- The number of incurred claims is 3.7% lower than the 2016 accident year
- There were 912 claims active as at 30 June 2017, which is 10.1% higher than the 828 expected
- Average payment per claim was \$9,598, which is 14.5% higher than the \$8,383 expected.

The expected experience is based on the adopted parameters used for our 30 June 2016 valuation.

2.4 Reconciliation of estimates

The table below reconciles the gross outstanding claims central estimate, excluding expenses, with the equivalent result as at 30 June 2016.

Reconciliation of gross actuarial estimates, excluding expenses (\$000s) Accident year ending 30 June 2010 2019 Total										
HOUIC	chi year chaing 50 banc	2010	2013	2014	2013	2012	2011	2010	& earlier	lotai
A.	Gross estimates at 30 June 2016 (a)	92,996	79,498	48,312	35,726	28,659	11,885	12,202	74,058	383,337
B.	Gross payments 1 July 2016 to 30 June 2017	30,461	20,576	12,545	7,274	5,042	5,830	2,998	13,797	98,523
C.	Assumed investment return (b)	1,271	1,131	687	524	427	147	175	1,097	5,457
D.	= A - B + C	63,806	60,053	36,454	28,976	24,044	6,202	9,379	61,358	290,272
	Updated gross estimates at 30 June 2017									
E.	Revised gross estimates at 30 June 2017 (c)	65,664	61,503	31,737	24,741	13,516	7,476	10,554	69,416	284,606
F.	= E - D	1,858	1,451	-4,718	-4,235	-10,528	1,274	1,174	8,058	-5,666
	Change 01 July 2016 to 30 June 2017									
G.	Proportion of change attributable to									
	Changes in real rates of return	-6,463	-3,261	-1,673	-1,388	-832	-489	-667	-3,636	-18,409
	Change in experience	6,184	3,690	-1,788	-3,333	-10,634	994	396	1,392	-3,100
	Change in actuarial assumptions	2,137	1,022	-1,257	486	938	768	1,445	10,303	15,843
H.	Gross amount incurred and outstanding for									88,477
	2016/17 accident year (e)									
I.	= E + H									373,083
	Total gross outstanding liability, excluding expenses at 30 June 2017									

Notes: (a) from section 2.1 of our previous report dated 16 June 2017

- (b) calculated using 1.6% p.a. being the one year forward rate from section 6.1 of our previous report dated 16 June 2017
- (c) from appendix C4 of this report.

The table shows that:

- Overall estimates show a release of reserves of \$5.7 million, which is 1.5% of the opening 30 June 2016 estimates. This increase is made up:
 - \$18.4 million decrease (4.8% of opening estimates) due to the increased in the real rates of return
 - \$3.1 million decrease (0.8%) due to changes in experience
 - Partially offset by, \$15.8 million strain (4.1%) due to changes in underlying assumptions
- The increased in real rates of return is due to a decrease in inflation rates combined with an increase in discount rates, as described in Section 6.1
- The change in experience is due to:
 - A large release in 2012, from the decrease in the size of a large claim and hence the removal of the large claim allowance
 - A strain for the 2016 accident year arising from an increase in the size of a large claim
 - A strain for 2008 accident year due to the increase in payments, which was only partly offset by a matching decrease in case estimates
- The strain due to actuarial assumptions is due to higher PPAC/PPCI/PPCF factors to reflect recent experience. The 2014 accident year had a release due to a change in the blend of method and adopted payment per actives claims factors to reflect recent experience.

3 Self-insurer outstanding claims liabilities

Key points of this section

- Our estimate of the net outstanding claims provision as at 30 June 2017 is \$3.5 million, which is \$0.9 million (19.9%) lower than the 30 June 2016 provision
- Our inflated and discounted central estimate, including claims handling expenses, is \$2.8 million. This is \$0.2 million (6.9%) lower than self-insurers' combined central estimate of \$3.0 million
- The funding ratio is 161%, which is higher than 138% last year
- Claim incurred numbers exhibit a strong declining trend since 2011 to 89 claims in 2017
- The reconciliation of our central estimates, excluding expenses, to our previous valuation as at 30 June 2016 shows a release on reserves of \$0.8 million, which is 24% of the opening estimates.

3.1 Outstanding claims liability

3.1.1 Outstanding claims provision

The provision below is based on cumulated claims data across all payment types and self-insurers. Projected payments are inflated and discounted to get to the gross central estimate before application of an allowance for claims handling expenses and a risk margin to calculate the provision.

A breakdown of our results are shown in the table below:

Estimates at 30 J	une 2017 (\$000s)					
Gross o/s	Reinsurance		Claims handling	Net central	Risk	Net
liability (a)	recoveries (b)	liability (c)	expenses (d)	estimate (e)	margin (f)	Provision (g)
2,644	0	2,644	185	2,830	651	3,480
	•	·-		·-		

Notes :	(a)	in inflated and discounted values
	(b)	(a) x 0%
	(c)	(a) + (b)
	(d)	assumed to be 7% of the net outstanding liability
	(e)	= (c) + (d)
	(f)	a risk margin to increase the provision to a 75% level of sufficiency, = (d) x 23.0%
	(g)	= (e) + (f)

The inflated and discounted net provision at 30 June 2017 is \$3.5 million, which is \$0.9 million (19.9%) lower than the \$4.3 million provision as at 30 June 2016.

3.1.2 Comparison with self-insurers' estimates

We have compared our assessment of the net central estimate to self-insurers' estimates. The results are shown in the table below:

Estimates at 30 June 2017 (\$000s)										
Accident year ending 30 Jun	Self-insurers' estimate (a)	PwC estimate (b)	Difference (\$000s) (b) - (a)	Difference (%) (b) / (a) - 1						
2011 & earlier	35	75	40	113.7%						
2012	36	35	-1	-2.1%						
2013	52	45	-7	-13.1%						
2014	120	155	35	29.2%						
2015	483	386	-97	-20.1%						
2016	813	853	40	4.9%						
2017	1,499	1,281	-218	-14.6%						
Total	3,038	2,830	-208	-6.9%						

Notes: (a), (b) in inflated and discounted values, including claims handling expenses

This comparison shows that our net central estimate is lower than the self-insurers' estimate by \$0.208 million (6.9%). This is largely due to the 2017 accident year.

Self-insurer funding ratio

For self-insurers, the funding ratio compares the self-insurers' bank guarantee provision (the central estimate times 1.5) with our estimate, which excludes any risk margin.

Funding ratio ((\$000s)			
	Self-insurers' provision (a)	PwC central estimate (b)	Difference (\$000s) (b) - (a)	Difference (%) (b) / (a) - 1
Total	4,557	2,830	-1,727	161%

Notes: (a) bank guarantee provision, net central estimate (from table above) x 1.5

(b) as per table above, net central estimate excluding risk margin

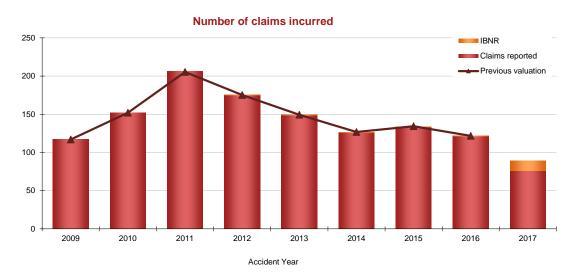
The aggregate funding ratio is 161%, which is higher than 138% as at 30 June 2016. This indicates that the current bank guarantee provisions held by self-insurers in aggregate are likely to be adequate to cover future claims costs.

3.2 Claims statistics

The following sub-sections show the claims experience by accident year. For more graphs of claims statistics, see Appendix G.

3.2.1 Number of claims incurred

Decreasing trend from 2011 peak to 2017



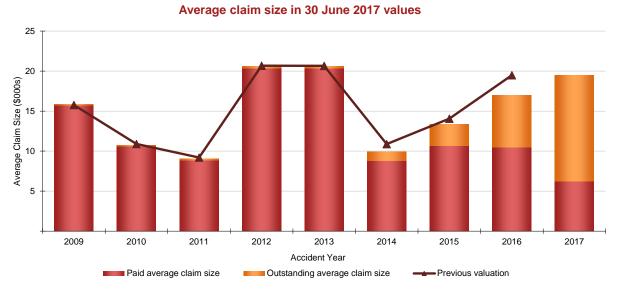
The main points to highlight from this chart are:

- There were strong increases in the number of incurred claims from the 2009 to 2011 accident years, from 117 to 206 claims. We are unaware of the drivers of this increase
- Since the high in 2011, the number of claims has reduced each year to a level of 126 claims in 2014.
 From a review of the self-insurer reports, we understand that one self-insurer has changed its management and recording of small claims, which has contributed to the decrease

- The number of claims was fairly stable over 2014 to 2016 at around 130 claims.
- For 2017, the total estimated claims is 89, significantly lower than all prior years shown. Of this estimate, 13 claims are IBNR
- The number of claims is similar to estimates at the previous valuation.

3.2.2 Gross average claim size

2017 average claim size is just under \$19,500, \$2,500 (15%) higher than 2016



The average claim size has been volatile between accident years and there has been no discernible trend. Since 2009, the average claim size has ranged been between \$9,000 and \$20,600, with lows in 2010, 2011 and 2014 surrounding highs in 2012 and 2013. This implies that the spike in incurred claim numbers in 2011 shown in 3.2.1 is related to smaller claims.

Our estimated average claim size for the 2014, 2015 and 2016 accident years is lower than our previous valuation due to lower than expected payments and development for these accident years over the 2017 financial year.

Our estimated average claim size for the 2017 accident year is just under \$19,500 which is \$2,500 (15%) higher than the 2016 accident year. The 2017 estimate is high compared with recent years due to fewer claims incurred and allowance for large claims to develop based on historical experience.

The uncertainty about the future development means that the ultimate level and our estimates may differ from that projected for recent accident years. This is especially true for the 2017 accident year, where a high proportion (68%) of the average claim size consists of the uncertain future estimate.

3.3 Actual vs expected claims experience over 2016/17

Actual experience compared to the expected experience over 2016/17 for claims incurred up to 30 June 2016 showed:

- Claim reports were higher than expected (18 actual compared to 16.5 expected)
- Claim payments were slightly higher than expected (\$1.11 million actual compared to \$1.08 million expected).

The expected experience is taken from our previous report dated 16 June 2017. See appendix F for full details.

The impact of this experience and our adjustments to future development is quantified in the reconciliation below.

3.4 Reconciliation of central estimates

The table below reconciles the gross outstanding claims central estimate, excluding expenses, with the equivalent result as at 30 June 2016.

Reconciliation of gross actuarial estimates, excluding expenses (\$0	00s)							2009 &	
Accident year ending 30 June (\$000s)	2016	2015	2014	2013	2012	2011	2010	earlier	Total
A. Gross estimates at 30 Jun 2016 (a)	1,671	968	357	58	64	81	56	48	3,301
B. Gross payments 1 July 2016 to 30 June 2017	544	474	77	0	0	4	3	4	1,107
C. Expenses (b)	0	0	0	0	0	0	0	0	0
C. Assumed investment return (b)	23	12	5	1	1	1	1	1	45
D. = A - B + C	1,149	505	285	59	65	78	54	45	2,240
Updated gross estimates at 30 June 2017									
E. Revised gross estimates at 30 June 2017 (c)	797	361	145	42	33	43	17	10	1,447
F. = E - D	-352	-144	-141	-16	-32	-35	-37	-35	-792
Change 1 July 2016 to 30 June 2017									
G. Proportion of change attributable to									
Changes in real rates of return	-26	-41	-18	-5	-4	-5	-2	-1	-102
Change in experience	-88	212	-31	-6	-26	-27	-34	-8	-8
Change in actuarial assumptions	-238	-315	-92	-5	-2	-3	-1	-26	-682
H. Gross amount incurred and outstanding for									1,197
2016/17 accident year (c)									
I. = E + H									
Total gross outstanding liability, excluding expenses at 30 June 2017									2,644

Notes: (a) from section 3.1 of our previous report dated 16 June 2017

- (b) calculated using 1.6% p.a. being the one year forward rate from section 6 of our previous report dated 16 June 2017
- (c) from appendix F4.4 of this report.

The table shows that:

- Overall estimates show a release of reserves of \$0.8 million, which is 24.0% of the opening
 30 June 2016 estimates. This release is made up of:
 - \$0.68 million release (20.6%) due to changes in actuarial assumptions
 - \$0.10 million release (3.1%) due to changes in experience
 - \$0.01 million release (0.3% of opening estimates) due to increase in the real rates of return.
- A release across all accident years, mainly due to change in the actuarial assumptions and the increase in the real rates of return.

4 Break-even premium rates

Key points of this section

- Actual premium rates charged by insurers have been the same or more than sufficient to cover the breakeven cost for five out of the nine accident years from 2009 to 2017
- For 2017, the actual premium rate of 1.8% is the same as the estimated break-even premium rate
- Our projected break-even premium rate for 2018 is 2.0%, which is in line with the last two years' estimated break-even premium rates and actual premium rates charged, of between 1.8% and 2.0%.

4.1 Adequacy of past premiums

The break-even premium rate is calculated on an inflated and discounted basis and is gross of reinsurance, given that each insurer will have a unique reinsurance treaty in place. No allowance for a profit margin has been made, as insurers will set their own margin based on a multitude of factors, and we are interested in the "break-even" premium, which excludes any consideration of profit.

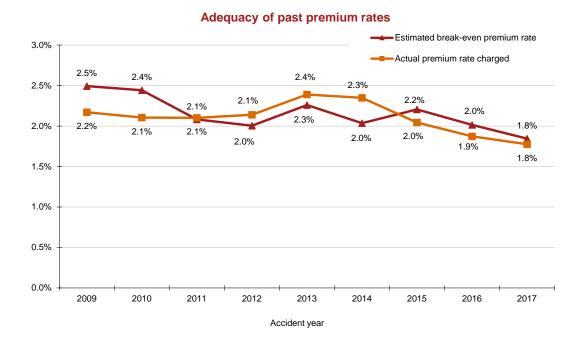
For this analysis, we have allowed for the claims costs and expenses to be discounted to the point that the premium is received. We have used all claims experience available to date to calculate the break-even premium rate.

The following table shows our estimated break-even premium rates and the actual rates charged by insurers:

	Calculated break even premium								Actual premium				
Accident year	Reported earned wages (a) (\$000s)	Developed earned wages (b) (\$000s)	Discounted gross incurred cost (c) (\$000s)	Commission in financial year (d) (\$000s)	Discounted other expenses in the fin year (e) (\$000s)	Premium (f) (\$000s)	Estimated premium rate (g)	Reported earned premium (h) (\$000s)	Developed earned premium (i) (\$000s)	Actual premium rate charged (j)	Difference (break even - actual)		
2017	6,986,708	7,371,290	110,242	4,489	20,653	135,933	1.8%	124,137	130,910	1.8%	-5,023		
2016	6,748,792	6,910,925	114,229	4,163	20,086	139,152	2.0%	126,416	129,432	1.9%	-9,720		
2015	6,571,269	6,618,084	120,246	4,558	20,288	145,981	2.2%	135,220	135,220	2.0%	-10,761		
2014	5,930,754	5,930,754	98,045	4,775	17,098	120,672	2.0%	139,234	139,234	2.3%	18,562		
2013	5,199,017	5,199,017	97,986	3,697	15,016	117,505	2.3%	124,240	124,240	2.4%	6,734		
2012	4,633,724	4,633,724	74,900	2,864	14,015	92,853	2.0%	99,113	99,113	2.1%	6,261		
2011	4,138,004	4,138,004	70,347	2,863	11,998	86,146	2.1%	86,936	86,936	2.1%	790		
2010	3,576,580	3,576,580	73,323	2,624	10,680	87,362	2.4%	75,252	75,252	2.1%	-12,111		
2009	3,829,000	3,829,000	79,504	2,544	11,837	95,501	2.5%	83,089	83,089	2.2%	-12,412		

- Notes: (a) earned wages provided by insurers
 - (b) (a) x development factors in Appendix B7
 - (c) calculated in Appendix H1
 - (d) actual commission, from the consolidated Form A returns
 - (e) other expenses, from the consolidated Form A returns, discounted by half a year
 - (f) = $(c) + (d) + (e) \times (1 + one \text{ year historical interest rate}) \wedge (3/12)$ to allow for the fact that premiums are received 3 months after the commencement of the underwriting period
 - (g) = (f) / (b)
 - (h) earned premium, including earned but not yet reported premium provided by insurers
 - (i) (h) x development factors in Appendix B7
 - (j) = (i) / (b)

As per last year, we have used developed earned premium and wages for the 2011 year onwards. This better matches the time period of the claims cost. Conversely, the 2010 and earlier years continue to use premium and wages processed as per previous reviews, because the earned premium was not available.



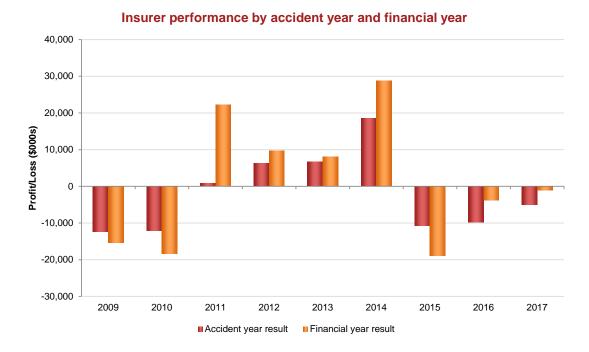
The key points to highlight from the above chart and table may be summarised as follows:

- In 2009 and 2010 the actual premium rate charged by insurers of 2.2% and 2.1% was lower than the estimated break-even premium rate for the two accident years
- The actual premium rate charged from 2009 to 2015, ranges between 2.0% and 2.4%
- Since 2011, the actual premium rate and the estimated break-even premium rate have been close to each other, except in 2014 when the actual premium rate charged was significantly higher
- Following the Act changes in July 2015, both the actual premium rate and the estimated break-even premium rate have fallen to 1.9% in 2016 and to 1.8% in 2017
- With hindsight, the actual premium rate charged was more than sufficient to cover the break-even cost for accident years 2012, 2013 and 2014 were similar to estimates of break-even rates in 2011 and 2017, but less than sufficient for all other years.

Historically, the actual rate has fluctuated around the estimated break-even premium rate. However, we would expect the premium charged by insurers to be consistently higher than the break-even premium, to incorporate an appropriate profit margin. Insurers' will likely use a higher discount rate than Commonwealth yields in their pricing based on a higher expected rate of investment return. This reduces the actual premium rate charged.

Another source of difference between the two rates is reinsurance. We have estimated the break-even rate based on the gross risk cost, whereas the premium rate charged by insurers would factor in reinsurance (both recoveries and cost of a treaty). Assuming that reinsurance is priced to deliver a profit above the expected reinsurance recoveries, then the break-even rate would be expected to increase if an allowance was made for reinsurance.

Using the difference between the actual premium and break-even premium as shown in the table above we have graphed the insurer performance on an accident year basis. The financial year basis comes from the Form A supplied by insurers.



Over the nine years shown in the chart above there is no discernible trend in the insurer profitability. In general, the insurer performance on a financial year basis has been more variable than the performance on an accident year basis.

On an accident year basis the 2009, 2010, 2015, 2016 and 2017 actual premium charged is lower than the hindsight break-even premium based on current claims experience.

4.2 Forecast break-even premium rate

The following table shows the break-even premium rate projected for the next financial year. For comparative purposes, we have also shown the last five underwriting years.

Underwriting year	Actual wages (a) (\$000s)	Discounted gross incurred cost (b) (\$000s)	Expenses (c) (\$000s)	Premium (d) (\$000s)	Calculated premium rate (e)
2018	7,496,602	122,085	29,127	151,802	2.0%
2017	7,371,290	110,242	25,142	135,933	1.8%
2016	6,910,925	114,229	24,248	139,152	2.0%
2015	6,618,084	120,246	24,846	145,981	2.2%
2014	5,930,754	98,045	21,873	120,672	2.0%
2013	5,199,017	97,986	18,713	117,505	2.3%

Notes: (a) 2018 = developed wageroll for 2017 x (1 + 1.7%)

(b) 2018 = adopted claims incurred x adopted average claim size in 30 June 2017 values x (1 + wage inflation) x (1 + superimposed inflation) x inflation/discounting factor

- (c) = (b) / (1 commission rate (3.4%) other expense rate (15.9%)) (b)
- (d) = (b) / $(1 \text{commission rate } (3.4\%) \text{other expense rate } (15.9\%)) \times (1 + \text{interest rate } (1.6\%)) ^ (3/12) \text{ to allow for the fact that premiums are received 3 months after the commencement of the underwriting period}$
- (e) = (d) / (a)

Our projection of the break-even rate for the 2018 underwriting year is reliant on three key items:

- Actual wages are forecast to increase at 1.70%, being the adopted level of future wage inflation
- The *future gross incurred cost* is the product of the number of incurred claims and an average claim size, allowing for future inflation, superimposed inflation and discounting to reflect the timing of payments
- Expenses are the sum of *commission* and *other expenses*, which are both set as a percentage of the total premium.

Superimposed inflation is a measure of the growth in claims cost in excess of wage inflation.

More detailed analysis on the derivation of the four adopted assumptions for the projection (incurred claim numbers, average claim size in 30 June 2017 values, commission rate and other expense rate) are shown in Appendix H.

The adopted average claim size includes an allowance for a 2.8% reduction for the 2015 legislative changes. See Appendix B for more details.

5 Data and methods

Key points of this section

- NT WorkSafe provided us with the data required for this review
- The methodologies used to estimate the outstanding claims for insurers and self-insurers and for the breakeven premium rate are the same as those used for the previous valuation.

Data and methods PwC

5.1 Data provided

NT WorkSafe supplied data to us from two sources:

The internal WIMS database which records details of all claims lodged under the NT scheme

Insurers' own systems giving details of claims lodged.

Following our review as at 30 June 2013, we worked with NT WorkSafe to create a data template for all insurers and self-insurers to complete. This template was provided as an Excel workbook. These returns enable us to receive consistent data, in a consistent form for our review, from all insurers. We will continue to work with insurers to improve the template for ease of use and completeness for our analysis purposes and ensure that it is feasible for all insurers to complete it.

The following list sets out the information we received for our review. All data was supplied in electronic form.

- Report 1 Reconciliation to Form B. NT WorkSafe's comparison of the payments and reports in the WIMS system and provided from insurers' systems
- Report 2 Data based on date of accident. Unit claims data for all claims lodged by insurers and self-insurers, with accidents grouped by financial year and presented in separate files. This data contained payment information by payment type and development year
- Report 3 Number of new claims received
- Report 4 History of payments based on injury date. Claim triangles for reports and payments for each insurer and in total
- Report 5 List of claims and insurers. Lists all claims since scheme inception by unique identification number and the insurer the claim was lodged with
- Insurer data templates. This included the following information for each insurer:
 - Form A. A simplified profit and loss account showing only the insurance aspects
 - Form B. The number of claims reported and paid during the most recent financial year, and the number of active claims, the case estimates, and the outstanding provision (split by reported and unreported claims) at the end of the most recent financial year, by accident year. This also includes a summary of payments to date and case estimates by accident year for claims with a total incurred cost higher than \$500,000
 - Outstanding claims. Specifies the gross outstanding estimate, reinsurance recoveries, claims handling expenses and prudential margin as at 30 June 2017
 - ANZSIC data. Policies, employees, premiums, wages for each ANZSIC category. This is provided
 on the current processing year and for the most recent five underwriting years
 - Earned but not yet raised premium. Earned but not yet raised premium for each of the five most recent earned years.
 - Large claims. Insurers provided information on each open large claim with total estimates over
 \$2 million and provide information on the claim number, accident date, payments to date, case estimates, total gross estimates, estimated reinsurance recoveries, other information

We were also provided with copies of valuation reports for some insurers and self-insurers.

PwC Data and methods

We have separated the data to only include the information for the four insurers and four self-insurers, which are active in the scheme. These eight companies are:

- Allianz Australia Insurance Limited (including Territory Insurance Office)
- CGU Insurance Australia (Part of Insurance Australia Limited)
- GIO Insurance Australia (also known as AAI)
- QBE Insurance Australia
- Catholic Church Insurance
- Coles Supermarkets Australia Pty Ltd
- Westpac Banking Corporation
- Woolworths Supermarkets.

We have not included Government Self Insurance or uninsured data.

At 30 June 2014, TIO was a separate insurer. However, over the 2015 financial year it was purchased by Allianz.

For our analyses we have used the data described in the following way:

- Form B returns have been used to find the number of claims reported, the number of claims active and case estimates
- Report 2 files have been combined to obtain payments by payment type for all accident years back to
 2002 and up to development year nine. We have used the total payments from Report 4 for development
 year 10+ and have spread the payments in the tail across payment types based on the distribution of
 payments in development years eight and nine
- Outstanding claim estimates have been taken from insurers and self-insurer data templates
- Assumptions regarding reinsurance recoveries and claims handling expenses have been set by
 considering the large claim data, insurers' actuarial reports, the Form A returns provided, and with our
 knowledge and experience of other similar schemes
- ANZSIC data has been used to find the premiums collected and associated wages for our assessment of the adequacy of historic premium rates.

For further details on the data provided see Appendix A.

5.2 Data quality and reconciliation

Overall, the data NT WorkSafe provided to us was suitable for our purposes, and we found it was broadly consistent across forms.

NT WorkSafe performs an initial set of data quality checks before the data is sent to us. We also conducted a high-level check of the total payments and number of claims between the Form B returns and the WIMS system and found them to be consistent.

The table of the results from these checks can be found in Appendix A.

Data and methods PwC

5.3 Data enhancements and additional data

At this stage we have no further data enhancements.

5.4 Projection methods for outstanding claims

We performed two separate valuations for this review, one for insurers and one for self-insurers. The sections below explain the different methodologies used for each valuation.

5.4.1 Insurers' outstanding claims valuation

We assessed the outstanding claims liability for insurers by projecting cash-flows separately for the following groupings of payment types:

- Weekly benefits
- Medical and hospital expenses
- Allied health, vocational rehabilitation, non-compensation other and death
- Other goods and services
- Non-compensation legal
- Redemptions and non-economic lump sum.

These groups are the same as for our previous review. They were selected based on similarities in the underlying nature of the claims likely to arise under each payment type and the payment patterns across development years.

We used a blend of the payments per active claim (PPAC) and payments per claim incurred (PPCI) methods to project payments for the first four of our groups listed above. For the other two groups we used a blend of the payments per claim finalised (PPCF) and PPCI methods.

Payments per claim finalised method

All payments were brought to current values and divided by the numbers of claims finalised in their respective accident years and years of payment. Averages of payments per claim finalised were formed from these figures. These averages were then combined with a projection of future numbers of claims finalised to produce projected future payments.

Payments per active claim method

As described for the payments per claim finalised method, but with a denominator of numbers of claims active at the beginning of the period.

Payments per claim incurred method

All claim payments were brought to current values and divided by the numbers of claims incurred in their respective accident years. A pattern of past payments per claim incurred was derived in respect of each

accident year. These payment patterns were then extended into future years and used to project future payments.

The above methods calculate the projected liability in current values, including allowance for superimposed inflation.

The projected liability in current values is used to calculate the present value of the future claim payments by allowing for:

- a Future increases prior to payment, due to claims inflation
- b Discounting to take into account investment return attributable to the assets backing the provisions during the run-off period
- c Reinsurance recoveries on the gross future payment amounts
- d Expenses associated with administering claims during the run-off period.

To estimate the reinsurance recoveries, we have allowed for 100% of the large claim allowance.

This overall approach is consistent with that required by the Accounting Standards for private and State Government general insurers (AASB1023), and APRA's prudential standard GPS320 for liability valuations for general insurance. It also complies with the Institute of Actuaries of Australia's Professional Standard PS300 to the extent possible given the data available.

The question of uncertainty in the estimates and the determination of provisions are discussed in sections 7.1 and 7.2.

5.4.2 Self-insurers' outstanding claims valuation

All analyses were performed after inflating past payments to current values as at 30 June 2017. We have used the PPCI method for our analysis and compared this to case estimates. For accident years where the PPCI result was insufficient, we have adopted the case estimates or for older years, we have adopted a blend of PPCI and case estimates.

The PPCI method calculates the projected liability in current values, including an allowance for superimposed inflation. We then used the same method applied to insurers to calculate the future claim payments, allowing for (a) – (d) above.

5.5 Approach to estimate break-even premium rates

We take the following steps to estimate the break-even premium rate for historic years:

- a Using historic one-year forward rates, discount actual claim payments back to the start of each year
- b Using the same set of discount factors, discount the inflated/discounted outstanding claims central estimate (excluding claims handling expenses) from this valuation for each year back to the start of each year
- c Sum (a) and (b) to find the total discounted gross incurred cost for each year
- d Using the Form A returns find the levels of commission and other expenses for each financial year
- e Sum the discounted gross incurred cost, commission and other expenses, and divide this by the developed earned wages to find the break-even premium rate.

We have allowed for the following timing aspects in the estimated premium:

- Other expenses have been discounted by half a year, to allow for the fact that they are incurred evenly
 through the year and so on average are paid half way through the year
- Commission is assumed to be received at the same time as the premium
- Premiums have been inflated by a quarter of a year to allow for a timing delay for when they are actually received by insurers from brokers.

We have used the actual earned premiums from insurers and wages from the ANZSIC data to calculate the actual premium rate charged.

To project the break-even premium rate for 2017/18, we take the following steps:

- a From historical data, estimate the incurred number of claims using average claim frequency and projected wages, an average claim size, as well as a commission rate and other expenses rate as a proportion of premium
- b Calculate the discounted gross incurred cost for the next year by multiplying the incurred number of claims by the average claim size, allowing for one year's inflation and superimposed inflation and discounting
- c Calculate the appropriate allowance for expenses using the following formula: expenses = incurred cost / (1 – commission rate – other expense rate) – incurred cost
- d Sum the estimated incurred cost and expense allowances, and divide this by projected wages for the next year, which are estimated as the 2016/17 developed wages inflated by one year. Also allow for the timing adjustment, as premiums will be received one quarter after policy commencement.

6 Assumptions

Key points of this section

- The real rate of return has increased significantly for all future years since the previous valuation, due to a decrease in the inflation rate from a flat 3.50% p.a. adopted in previous valuation to a step-wise inflation ranging from 1.70% in 2018 to 2.54% for 2034 and later, combined with increases in the discount rate
- Overall, the adopted superimposed inflation rate has increased since the previous valuation, from 1.6% p.a. to 1.9% p.a.
- The commission rate and claims handling expense rate have been set by considering insurer data and with our knowledge and experience of other schemes in Australia. The claims handling expense has remained stable since our previous valuation
- Our adopted other expense rate has increased due to high insurer expense rates from 2015. In total, the
 commission and other expense rates make up 19.2% of the break-even premium rate, which is higher than
 the 17.5% adopted for the 30 June 2016 valuation
- For insurers, we have allowed for reinsurance recoveries on large claims which are expected to exceed the reinsurance retention, based on information provided by the insurers, which is the same as last year
- For self-insurers, we have adopted a 0% reinsurance recovery rate, which is the same as the previous valuation.

6.1 Financial assumptions

Future inflation and interest rates

The financial assumptions of future inflation and market rates of interest are as follows:

Years	Interest rate	Inflation rate	Real rate	
ahead	30 Jun 2017	30 Jun 2017	30 Jun 2017	30 Jun 2016
1	1.57%	1.70%	-0.13%	-1.87%
2	1.92%	2.70%	-0.78%	-2.01%
3	2.29%	2.90%	-0.61%	-1.97%
4	2.59%	3.30%	-0.71%	-1.76%
5	2.84%	3.24%	-0.40%	-1.48%
6	3.02%	3.18%	-0.17%	-1.33%
7	3.13%	3.13%	0.00%	-1.20%
8	3.18%	3.07%	0.11%	-1.08%
9	3.21%	3.01%	0.20%	-0.95%
10	3.27%	2.95%	0.32%	-0.83%
11	3.37%	2.89%	0.48%	-0.83%
12	3.51%	2.83%	0.67%	-0.83%
13	3.69%	2.78%	0.91%	-0.83%
14	3.91%	2.72%	1.19%	-0.83%
15	4.17%	2.66%	1.50%	-0.83%
16	4.29%	2.60%	1.69%	-0.83%
17 & onwards	4.29%	2.54%	1.75%	-0.83%

For this valuation, there has been an increase in the real rate of return for all future years, which decreases the liabilities. This is due to reductions in inflation rate and increases in discount rates.

The interest rate for one quarter of DY0 ($(1 + 1.57\%) ^0.25 - 1$) = 0.4% is included in the calculation of the average premium rate. This is because insurers receive premiums on average three months after the policy commencement date.

See Appendix B1 for further information.

Past wage inflation

Payments and case estimates are inflated to current values based on the ABS Cat 6302.0 Average Weekly Earnings for the Northern Territory (persons full-time adult ordinary time earnings). These are detailed in Appendix B1.

PwC Assumptions

6.2 Superimposed inflation

The superimposed assumptions for each payment category are as follows:

Superimpos	ed Inflation		Allied Health, Vocactional Rehabilitation, Non-		R	edemptions And Non-	
		Medical And	Compsenation	Other Goods	Ecoi	nomic Lump	
	Weekly Benefits	Hospital	Payments	And Services	Legals	Sum	Total
30 Jun 17	2.1%	2.1%	1.0%	0.0%	4.4%	1.6%	1.9%
30 Jun 16	1.8%	2.0%	0.0%	0.0%	3.5%	1.6%	1.6%

In total, our superimposed inflation estimate of 1.9% p.a. is a 0.3% increase on the 1.6% p.a. adopted for the previous valuation. Our estimate of superimposed inflation is higher than the previous valuation for all payments type with the exception of Other Goods and Services and Redemptions and Non-Economic Lump sum.

Due to the volatility for redemptions and non-economic lump sums, we have used the same superimposed inflation assumption as last year. In 2015, we excluded payments over \$1 million in an individual payment year when calculating the superimposed inflation assumption for the Redemptions and Non-Economic Lump Sum payment group. This approach reduces the volatility, in order to better assess the underlying superimposed inflation rate for the payment group. We considered the same approach this year, but have adopted last year's superimposed inflation rate due to the continued volatility in the rates.

We calculate the total as a weighted average across the payment groups, weighted by the total outstanding claims estimate.

A 0% superimposed inflation rate has been adopted for payment categories, which had a calculated negative superimposed inflation rate.

See Appendix B2 for more details.

6.3 Expenses

Claims handling expenses

We have reviewed the allowances made for claims handling expenses in the insurers' and self-insurers' returns provided to us, and used our knowledge and experience of other workers compensation schemes in Australia to set the following claims handling expense assumptions for use in the outstanding claims liability:

- 6% of projected future claim payments for insurers
- 7% of projected future claim payments for self-insurers.

These are the same as the previous valuation.

Assumptions

Commission and other expenses¹

Insurers have provided data on historic gross written premiums, earned premiums, commission payments and other expenses as part of their Form A returns. We have used an average of the last three years to set the commission rate, as a proportion of earned premium, and the other expense rate, as a proportion of written premium, as follows:

(\$000s)	Underwriting	year				
	2017	2016	2015	2014	2013	Adopted
Gross written premium (a)	134,286	114,332	140,232	156,328	126,743	
Earned premium (b)	126,442	119,514	141,354	137,054	106,715	
Commission paid (c)	4,489	4,163	4,558	4,775	3,697	
Other expenses (d)	20,821	20,282	20,537	17,314	15,224	
Commission rate (e)	3.6%	3.5%	3.2%	3.5%	3.5%	3.4%
Other expense rate (f)	15.5%	17.7%	14.6%	11.1%	12.0%	15.9%

Notes: (a), (b), (c), (d) actual values taken from Consolidated Form A

(e) = (c) / (b)

(f) = (d) / (a)

The adopted rate is used in our calculation of the break-even premium rate for the next financial year. To show the adequacy of past rates we have used the actual dollar values of commission and other expenses paid.

Compared to the previous valuation, the adopted commission rate has remained stable at 3.4%, and the other expense rate has increased from 14.1% to 15.9%. The increase in the other expense rate is due to high expense ratios for 2015 to 2017.

In total, the commission and other expense rate make up 19.2% of the break-even premium rate, which is higher than the 17.5% adopted for the 30 June 2016 valuation.

6.4 Reinsurance

We have used the additional information provided by insurers to allow for reinsurance recoveries on large claims, which are expected to exceed the retention limit. This is equivalent to 8% of all claims. We compared the reinsurance recoveries based on the large claims with insurers' total reinsurance recoveries and they were similar, though slightly lower, so we did not feel it was necessary to allow for any further reinsurance recoveries on the smaller claims. This is similar approach to last year's valuation.

We reviewed the self-insurers' reports and noted that none of them have allowed for any reinsurance recoveries. Therefore, we have not allowed for any reinsurance recoveries for self-insurers.

¹ Other expenses include claims handling expenses

6.5 2015 legislative amendments

The 2015 legislative amendments were set out in two parts. The first amendment bill, Workers' Rehabilitation and Compensation Legislation Amendment Bill 2015, passed in March 2015 and came into effect 1 July 2015. The second amendment bill, the Return to Work Legislation Amendment Bill 2015, was passed in August 2015 and came into effect on 1 October 2015.

We costed the following changes in our report titled *Actuarial costing of Northern Territory workers* compensation scheme changes dated 11 September 2014:

- For claimants with less than 15% permanent impairment (PI) capping weekly benefits to five years and all other benefits to six years
- Extending weekly benefits from 26 weeks to 104 weeks for workers within 6 months of pension age or older than it.

We also provided commentary on some other proposed scheme changes.

The estimated cost of the above changes was a 2.8% reduction. This has been allowed for in our calculations of the outstanding claims liabilities as at 30 June 2017 for the 2015/16 and 2016/17 accident years and the future costs for the 2017/18 accident year. There is no allowance for the 2015 legislative changes in the outstanding claims liability as at 30 June 2017 for accident years before 2015/16.

As the scheme changes were broader than covered by our 11 September 2014 report, the actual impact could be different to estimated. We recommend WorkSafe NT and insurers closely monitor the experience to ensure that there are not any unintended consequences.

7 Uncertainty

Key points of this section

- A sufficient risk margin to increase the level of reserving adequacy from 50% to 75% is 14.5% for insurers, and 23.0% for self-insurers. The rate is higher for self-insurers due to the smaller size of the portfolio causing higher volatility.
- The sensitivity testing showed greatest sensitivity to changes in the economic assumptions.

7.1 Uncertainty in the estimates

Actuarial estimates are obtained after analysis of past claims experience. From these analyses, models of the claim payment process can be established and used to project future payments on claims outstanding at the valuation date.

The estimates of outstanding claims obtained in this manner are indeed estimates in the sense that there is a degree of uncertainty as to the difference, which will ultimately arise between the estimates and the final result of the experience. This uncertainty arises from four sources:

- a Because the nature of the claims process is not fully understood, it might be that none of the various models used is an entirely accurate representation of reality
- b Because there are components of randomness in the claims process, it is not possible to estimate the parameters of that process with complete precision even if complete confidence were felt in the nature of the model
- c Any erroneous data will similarly have introduced uncertainties into the estimates of those parameters
- d Even if the parameters could be estimated with precision, it would not be possible to predict outstanding claims with the same precision because of the random component in future experience.

For some portfolios errors associated with b and d above can be quantified in a formal way (estimation and statistical errors). However a large part of the uncertainty is associated with a (model specification error), and is difficult to quantify this component.

The investigation and application of different models to the data is intended to reduce the model specification error, although the extent to which this is achieved is unknown.

The initial estimates obtained from the calculations are "central" estimates in the sense that they incorporate no deliberate bias towards over or under estimation. By definition, the estimates are intended to have about an even chance of ultimately turning out to be sufficient.

7.2 Determination of provisions

7.2.1 Background

Because of the uncertainty described above, provisions which are somewhat greater than the actuarial "central" estimates are often adopted. A 50% probability of provisions being too low, is seen as involving a higher than desirable risk.

This is intended to provide security for stakeholders.

However, security is not the only reason to adopt provisions which are greater than the statistical central estimates. It may be to ensure as far as possible that provisions are not released until it is reasonably certain that they are not required. A 50% chance that the provisions will eventually not be required is generally not seen as sufficient.

Any decision to adopt provisions for outstanding claims which are greater than the central estimates, together with the extent of any margin, is in our view a decision which should properly be taken by the Boards of insurers. In making this decision, they may take into account various matters (both objective and subjective) which influence their view of future experience.

It should be realised that, by definition, any margins over central estimates are intended to have a better than even chance of falling into future surplus, provided that future experience is consistent with that of the recent past. This should be considered in making management decisions.

7.2.2 Levels of sufficiency

The nature of insurance claims is such that the actual value of the liabilities is unknown because claims experience is subject to random fluctuations. The amount of the claim liability cannot be estimated with certainty. Also it is very difficult to determine the central estimate with a reasonable degree of precision. For this reason, the inherent uncertainty in the central estimate must also be considered.

It is common practice for the actuary to provide a central estimate of the liabilities. Such an estimate should contain no deliberate or conscious over or under estimation.

The provision adopted in the accounts should usually be greater than the central estimate. The difference is referred to as a risk margin. As explained above, the risk margin allows for some part of the uncertainties in the claim process and also it ensures as far as possible that surplus is not released until it is reasonably certain that the surplus is real.

The adopted method was tested for its sensitivity to changes in the claim rates assumed and a measure of the variation in the results was obtained. This analysis indicated that the distribution of likely results was skewed to the right. This means that the variation upwards in the provision is expected to be greater than the variation downwards.

The dispersion of expected results is added to by:

- The variable nature of the claim experience
- Very large common law claims can sometimes occur.

The variation analysed together with benchmarking against reports published by APRA and the Institute of Actuaries leads to the assumption of a 25% coefficient of variation of the distribution of results for insurers and 50% for self-insurers, which allows for the skew distribution and systemic variation. The lognormal distribution was then assumed to apply when calculating the prudential margin required to increase the level of sufficiency above 50%.

The coefficient of variation calculated as described above is taken as 25% for insurers and 50% for self-insurers. This leads to the following prudential margins.

Level of sufficiency and risk margins						
Level of sufficiency	70%	75%	80%	85%		
Risk margin (insurers)	10.39%	14.54%	19.35%	25.22%		
Risk margin (self-insurers)	14.58%	23.00%	33.11%	45.94%		

7.2.3 Sensitivity

The adopted method was tested for its sensitivity to changes in the assumptions about future interest and inflation rates, adopted reporting rates, and superimposed inflation, and a measure of the variation in the results was obtained. The results of this analysis for insurers are shown below:

NT WorkSafe Insurers - sensitiv	vity analysis	
Assumption varied	Variation	% Change in total provision
Future interest rates	1% increase 1% decrease	-3.40% 3.69%
Future inflation rates	1% increase 1% decrease	3.64% -3.42%
Adopted claim reporting rates	DY0 rate decrease from 12.54% to 6.279	-1.59% %
Superimposed inflation	1% increase 1% decrease	3.33% -3.12%

The corresponding results for our self-insurer analysis are as follows:

NT WorkSafe self-insur	NT WorkSafe self-insurers - sensitivity analysis							
Assumption Varied	Variation	% Change in total provision						
Future interest rates	1% increase 1% decrease	-2.79% 3.02%						
Future inflation rates	1% increase 1% decrease	2.98% -2.81%						
Incurred claims	10% increase in IBNR claims 10% decrease in IBNR claims	0.72% -0.72%						
Superimposed inflation	1% increase 1% decrease	2.78% -2.61%						

The percentage change in the outstanding claim provisions as at 30 June 2017 is shown in the table above. The inherent robustness of the various assumptions in the table above means that the variations shown are not necessarily cumulative. Hence care needs to be exercised in developing any best or worst case scenario.

7.3 Key risks for NT WorkSafe scheme

The following paragraphs detail some of the key risks for the NT WorkSafe scheme.

Inpex project

Significant increases in wages over recent two financial years have been driven by the Inpex project and the associated contracts. The number of claims incurred and claims cost have not reflected the increase in wages, causing the claim frequency and premium rate to reduce. We understand that over the 2018 financial year the construction phase is winding down and moving towards the production phase. Therefore, the number of workers will reduce significantly. As the project moves into production phase, this may significantly reduce the premium pool for the NT scheme in future years. There may be an increase in claims due to late claim reports if people cannot find alternative work, in the absence of new contracts commencing.

Changing economic environment

There is considerable uncertainty associated with the current economic environment and what it will mean for Australia over the near future. Aside from the Inpex project discussed above, there may be more general real wage decreases or increases in bad debts for insurers.

Over the last three to five financial years, there has been a reduction in the number of small claims lodged with other schemes. At the same time, there has not been a reduction in the number of medium to large claims. This has impacted the overall average claim size and incurred cost for other schemes. In the NT, there has been small reductions in claims less than \$1,000 over the past 15 years but not to the same extent in recent years as other state schemes. We will continue to monitor the mix by size of claims lodged in NT to ensure that we adequately allow for any change in claiming behaviour.

Large claims

The incurred cost and break-even premium for each accident year are heavily influenced by the presence or absence of any large claims. This is particularly prevalent in the NT due to the small scheme size and the prevalence of very large settlements. Future claims costs will continue to be impacted by very large settlements, with net costs to insurers impacted by the nature and adequacy of any reinsurance arrangements in place.

Large claims can also have an impact on superimposed inflation. While superimposed inflation remained fairly stable this year, it can be volatile due to the impact of large settlements and the relatively small scheme size. Superimposed inflation should be monitored to make sure increases in costs are understood and ensure that a payment type is not unexpectedly driving an increase in costs.

• 2015 legislative amendments

The 2015 legislative amendments are for prospective claims only, and were introduced in two stages. The main changes are effective from 1 July 2015, with additional changes effective from 1 October 2015. This creates additional uncertainty in the outstanding claims liabilities for the 2015/16 and 2016/17

accident years and the future costs for the 2017/18 accident year. In separate advice, PwC estimated that there would be a 2.8% reduction in respect of the most significant benefit changes. We have not estimated the impact of other changes. As the changes are not retrospective, this should not impact outstanding claims liabilities for accident years prior to 2015/16. We recommend WorkSafe NT and insurers closely monitor the experience after the legislation is promulgated to ensure that there are not any unintended consequences. See Appendix B6 for more information.

Appendices

Appendix A	Detailed	data description	42
	A 1	Data supplied by NT WorkSafe	42
	A 2	Data quality	46
Appendix B	Assumpt	ions	48
	B 1	Financial assumptions	48
	B 2	Superimposed inflation	50
	В3	Expenses	53
	B 4	Reinsurance	54
	B 5	GST	55
	B 6	2015 legislative amendments	55
	В7	Wage and premium development factors	57
Appendix C	Insurer o	utstanding claim valuation	58
	C 1	Data used in the valuation	58
	C 2	Actual and projected claims experience during 2016/17	60
	C 3	Analysis and projection models	61
	C 4	Adopted estimates of outstanding claims	71
Appendix D	Insurer c	laims statistics	75
	D 1	Number of claims incurred	75
	D 2	Gross average claim size	77
	D 3	Gross incurred cost	78
	D 4	Gross loss ratios	79
	D 5	Payment per claim incurred	80
Appendix E	Insurer fi	nancial year claims experience	82
	E 1	Aggregate claims experience during 2016/17	82
	E 2	Analysis by payment group	86
Appendix F	Self-insu	rer outstanding claims valuation	89

	F 1	Data used in the valuation	89
	F 2	Actual and projected claims experience during 2016/17	90
	F 3	Analysis and projection models	91
	F 4	Adopted estimates of outstanding claims	93
Appendix G	Self-insu	rer claims statistics	97
	G 1	Number of claims incurred	97
	G 2	Gross average claim size	98
	G 3	Incurred cost	99
	G 4	Payment per claim incurred	100
Appendix H	Insurer b	oreak-even premium rate	101
	H 1	Calculation of discounted gross incurred cost	101
	H 2	Estimated historic break-even premium rate	103
	H 3	Calculation of break-even premium rate for 2016/17	103
	H 4	Historical rates by industry	105
Appendix I	Glossary		108

Appendix A Detailed data description

A 1 Data supplied by NT WorkSafe

NT WorkSafe supplied data to us from two sources:

- The internal WIMS database which records details of all claims lodged under the NT scheme
- Insurers' own systems giving details of claims lodged with them.

All data was provided in electronic format.

NT WorkSafe perform their own initial reconciliations between the data sources, the main of these being the check of the payments in the WIMS system against payments recorded on the insurers' Form B. We have also performed our own checks between data sources and these are detailed below.

Following our review as at 30 June 2013, we worked with NT WorkSafe to create a data template for all insurers and self-insurers to complete. This template was provided as an Excel workbook. These returns enable us to receive consistent data, in a consistent form for our review, from all insurers. We will continue to work with insurers to improve the template for ease of use and completeness for our analysis purposes and ensure that it is feasible for all insurers to complete it.

The data descriptions below fall under two sections; *Actuarial data* which is the data supplied from the WIMS system, and *Template data* which is the data received from insurers.

We were also provided with copies of actuarial valuation reports for some insurers and self-insurers. However, this data is not uniformly presented and so we have not commented on it.

A1.1 Actuarial data

Five different types of report are run and extracted from the WIMS system. These are each supplied as separate data files.

Report 1 – Reconciliation to Form B

This report contains three items of data:

- NT WorkSafe's reconciliation of payments for the current financial year between the WIMS system
 against payments recorded on each insurers' Form B. This is done by insurer and in total
- A list of the total payments under each benefit code for the most recent financial year
- A list of all claims on which payments have been made, including details of the claim number, claimant name and amount paid.

We understand that the first sheet listed above is used by NT WorkSafe to reconcile the data before it is provided to us. A target of an absolute difference of no more than 1% is set, and if this is exceeded a manual

process is followed to adjust the data on the WIMS system for any human error which has crept in on data entry.

Report 2 – Data based on date of accident

We were provided with 10 different files of Report 2 from NT WorkSafe, one for each accident year from 2008. Each of the files contain unit claims data with the following information:

- Unique record identifier
- Claim status (accepted, pending or rejected)
- Dates of report to the employer, lodgement with NT WorkSafe and acceptance or rejection
- Work status of the claimant
- ANZSIC industry classification of the claimant's employer
- Total number of FTE workers for the claimant's employer
- Claimant date of birth
- Claimant sex
- Claimant postcode of residency
- ASCO occupation of claimant
- Duty being performed when injury occurred (for example commuting, on a break)
- Hours normally worked each week
- Normal weekly earnings
- Nature, bodily location, mechanism, agency and breakdown agency of the injury
- Time lost
- Payments for each development year (DY) and grouped for DY10+ for each of the following payment categories:
 - Weekly benefits
 - Lump sum death benefits
 - Lump sum redemptions/commutations
 - Lump sum impairment/non-economic
 - Medical
 - Hospital
 - Allied health services
 - Vocational rehabilitation
 - Other goods and services
 - Non-compensation legal
 - Non-compensation other.
- Name of the insurer or self-insurer who the claim was lodged with.

Several of the above fields (for example claim status, work status) are coded using NT WorkSafe's own coding system. We were provided with the key to this system.

Detailed data description PwC

Report 3 – Number of new claims received

This gives a summary of the number of new claims lodged by each insurer in the most recent financial year. The data is summarised in the following three ways:

- Total number of new claims lodged with each insurer
- Number of new claims lodged for each accident year with each insurer
- Number of new claims lodged for each calendar year of injury with each insurer.

Report 4 – History of payments based on injury date

Summarised in this report are the claim payments and reports for insurers. These are shown in the following format:

- Claim triangles of payments for each accident year since 1990 and combined for the pre-1990 accident years, for each insurer and in total
- Claim triangles of reports for each accident year since 1990 and combined for the pre-1990 accident years, for each insurer and in total
- Summary of the number of claim reports and payments made in the current financial year for each insurer for each accident year since 1990 and combined for the pre-1990 accident years.

Report 5 – List of claim and insurers

This report presents a list of all the claims, which have ever been lodged with the scheme, giving the unique claim number and the insurer with which the claim was lodged.

A1.2 Template data

Insurer's operating under the NT WorkSafe scheme are required to complete and return two statutory forms on an annual basis, Form A and Form B, and are requested to provide extra information to assist in the monitoring of the scheme.

Insurers were provided with a data template in the form of an Excel workbook. This contained Form A and Form B, and tables to record the current outstanding claims liability, and policies, employees, wages and premium by ANZSIC class on both a processing and underwriting year basis, earned but not yet raised premium and large claims.

NT WorkSafe has provided each of the completed template workbooks to us.

Self-insurers provide Form B.

Form A

Form A is a simplified version of the profit and loss account for the insurance aspects of the entity only. The following data items are given for the current financial year:

- Gross premiums
- Re-insurance premiums paid
- Unearned premium at start and end of the year

- Claims paid
- Reinsurance recoveries on claims paid
- Outstanding claims at start and end of the year
- Underwriting profit/loss
- Commission paid
- Other expenses
- Investment income
- Profit/loss.

Form B

Form B contains the following data items in relation to the insurers' claims experience:

- Claims reported
- Claims paid
- Number of reported claims outstanding (active claims)
- Provisions for outstanding claims, broken down by:
 - Provisions for claims already reported
 - Provisions for unreported claims
- Case estimates for all claims
- For claims with an incurred cost over \$500,000:
 - Cumulative payments to date
 - Case estimates outstanding.

Claims reported and paid are presented broken down by accident year and give the total amount over the year. Active claims, the outstanding provision, and case estimates are also broken down by accident year but show the position as at the end of the year. The large claim information shows payments made in total to date and the case estimate position at the end of the year.

The case estimates for all claims and cumulative payments and case estimates for claims with an incurred cost over \$500,000 was added this year.

Outstanding claims

This contains the following information for the insurers' outstanding claim liability at the end of the year:

- Gross central estimate
- Reinsurance recoveries
- Claims handling expense
- Prudential margin.

ANZSIC data

The file presents a breakdown of the following five data items by each ANZSIC category:

- Policies
- Employees
- Premiums
- Wages.

This information is given for the current processing year, and for the most recent five underwriting years.

Earned but not yet raised premium

The file contains information of earned but not yet raised premium as at 30 June 2017 for each of the five most recent earned years.

Large claims

Insurers provided information on each open large claim with total gross estimates over \$2 million and provide information on:

- Claim number
- Accident date
- Payments to date
- Case estimates
- Total gross estimates
- Estimated reinsurance recoveries
- Other information.

A 2 Data quality

Overall, the data NT WorkSafe provided to us was suitable for our purposes.

NT WorkSafe performed an initial set of data quality checks before sending it to us. After we conducted a high-level check of the total payments and reports between the Form B returns and the WIMS system, we raised a few queries with some insurers and self-insurers. These have been corrected where required so the differences are relatively consistent.

The following table shows the difference between the cumulative claim payments and reports on Form B and on the WIMS system for insurers only.

Accident	Payments (\$000s)			Re	ports			
year	Form B	WIMS	Difference	Difference (%)	Form B	WIMS	Difference	Difference (%)
2017	23,978	23,374	-603	-2.5%	2,141	2,060	-81	-3.8%
2016	52,630	51,669	-961	-1.8%	2,501	2,462	-39	-1.6%
2015	64,396	64,439	43	0.1%	2,633	2,627	-6	-0.2%
2014	71,050	71,705	655	0.9%	2,992	2,770	-222	-7.4%
2013	78,887	80,066	1,179	1.5%	2,697	2,797	100	3.7%
2012	70,294	68,773	-1,521	-2.2%	2,530	2,641	111	4.4%
2011	69,814	70,941	1,127	1.6%	2,624	2,709	85	3.2%
2010	71,121	71,165	44	0.1%	2,739	2,520	-219	-8.0%
2009	84,265	82,846	-1,418	-1.7%	2,477	2,608	131	5.3%
2008	71,798	73,435	1,637	2.3%	2,717	2,747	30	1.1%
2007	71,514	69,255	-2,258	-3.2%	2,755	2,489	-266	-9.7%
2006	58,242	56,654	-1,588	-2.7%	2,578	2,725	147	5.7%
2005	53,797	52,110	-1,687	-3.1%	2,869	2,774	-95	-3.3%
2004	45,739	43,237	-2,502	-5.5%	2,898	2,583	-315	-10.9%
2003	56,789	55,395	-1,393	-2.5%	2,868	2,892	24	0.8%
2002	44,901	46,001	1,100	2.4%	2,984	2,927	-57	-1.9%
Total	989,214	981,065	-8,149	-0.8%	43,003	42,331	-672	-1.6%

This table shows that in total the two systems reconcile reasonably well, with minor discrepancies across all accident years.

This is the second year for which self-insurers have completed Form B. Previously they complete Form 1, which took a slightly different form.

The following table shows the difference between the claim payments and reports for this financial year by accident year on Form B and on the WIMS system for self-insurers only.

Accident	Payments (\$000s)			Re	ports			
year	Form B	WIMS	Difference	Difference (%)	Form B	WIMS	Difference	Difference (%)
2017	570	555	-15	-2.6%	80	76	-4	-5.0%
2016	579	544	-35	-6.0%	11	17	6	54.5%
2015	428	474	47	10.9%	0	0	0	0.0%
2014	67	77	10	14.2%	0	0	0	0.0%
2013	0	0	0	0.0%	0	0	0	0.0%
2012 & earlier	. 8	11	3	35.7%	0	1	1	0.0%
Total	1,652	1,662	9	0.6%	91	94	3	3.3%

The information from Form B for the 2017 financial year reconciles fairly well with the WIMS data in aggregate, but with significant discrepancies by accident year.

As this is the third year the Form B has been produced, we have continued to rely upon the WIMS data. We will continue to work with NT WorkSafe and the self-insurers to improve the quality of data.

Appendix B Assumptions

B1 Financial assumptions

Future inflation and interest rates

Years	Interest rate	Inflation rate	Real rate	
ahead	30 Jun 2017	30 Jun 2017	30 Jun 2017	30 Jun 2016
1	1.57%	1.70%	-0.13%	-1.87%
2	1.92%	2.70%	-0.78%	-2.01%
3	2.29%	2.90%	-0.61%	-1.97%
4	2.59%	3.30%	-0.71%	-1.76%
5	2.84%	3.24%	-0.40%	-1.48%
6	3.02%	3.18%	-0.17%	-1.33%
7	3.13%	3.13%	0.00%	-1.20%
8	3.18%	3.07%	0.11%	-1.08%
9	3.21%	3.01%	0.20%	-0.95%
10	3.27%	2.95%	0.32%	-0.83%
11	3.37%	2.89%	0.48%	-0.83%
12	3.51%	2.83%	0.67%	-0.83%
13	3.69%	2.78%	0.91%	-0.83%
14	3.91%	2.72%	1.19%	-0.83%
15	4.17%	2.66%	1.50%	-0.83%
16	4.29%	2.60%	1.69%	-0.83%
17 & onwards	4.29%	2.54%	1.75%	-0.83%

The 30 June 2017 real rates are higher than the 30 June 2016 rates for all future years, which decreases the liabilities. This is due to a decrease in our estimate of future wage inflation compared to our 30 June 2016 valuation, for which we assumed a flat 3.50% p.a. for all future years, combined with increases in the discount rates for all future periods.

The real rate is estimated to be negative, i.e. interest earned is less than wage inflation, for the first six projection years and positive from the seventh projection year onwards. In our previous valuation, all years of future real rates of return were negative.

The interest rate for one quarter of the first year ahead $[((1 + 1.57\%) \land 0.25 - 1) = 0.4\%]$ is included in the calculation of the average premium rate. This is because premiums are received on average three months earlier than the point to which claims are discounted.

Forward interest rates are those estimated to be anticipated over future years by the Commonwealth bond market as it stood at 30 June 2017.

The interest rates are obtained by fitting a curve to the 30 June 2017 Commonwealth Government Bond yield curve, to derive the one year forward rates of interest, which are then independent of the cash flows of a particular portfolio of risks.

The central estimate of the outstanding claims liability is calculated as its "market value" i.e. the value it might attract in a hypothetical open market, in insurance claim liability portfolios. This is done by discounting the projected future cash flows at the market related future rates of interest, calculated as described above. By

using this method, the discounted value of the projected liability cash flows equals the market value of a matched hypothetical portfolio of Commonwealth Government Securities.

The interest rates assumed are therefore consistent with a market value approach to asset valuation and with the requirements in section 1.3. The application of this approach is theoretically correct for both reserving and premium rating.

The inflation and interest rates are chosen to be consistent with those currently used in our actuarial assessments for long tail classes.

The *wage inflation* assumptions we have adopted are lower than those used for the previous valuation. We have based future wage inflation on Deloitte Access Economics forecasts for NT as published on NT Treasury's website. Our analysis this year have adopted a step-wise inflation rate, compared to a flat rate last year. Adopting based on Deloitte Access Economics forecast for the first four projection years i.e. 1.70% inflation rate for 2018 (i.e. one year ahead), up to 3.3% for four years ahead.

From projection year 17 onwards, we used a long term 'gap' assumption, the inflation rate is set to achieve a real rate of interest of 1.75%. From projection years five to 17, we allow for a steady linear adjustment in the inflation rate to reach the long-term rate.

Past wage inflation

Past wage inflation for bringing past payments and case estimates into current values is taken from ABS Cat 6302.0 Average Weekly Earnings for Northern Territory (persons full-time adult ordinary time earnings), as shown below:

	Mid	End	Claims	escalation facto	ors
Year to	Quarter	Quarter	% Change	For	For case
30 Jun	AWE	AWE	p.a.	payments	estimates
2003	884.8	891.6		1.883	1.821
2004	934.7	942.1	5.7%	1.770	1.723
2005	1,000.2	1,003.8	6.5%	1.667	1.617
2006	1,016.0	1,016.9	1.3%	1.602	1.596
2007	1,043.0	1,052.0	3.4%	1.579	1.543
2008	1,107.4	1,114.0	5.9%	1.496	1.457
2009	1,150.9	1,158.6	4.0%	1.428	1.401
2010	1,224.2	1,235.3	6.6%	1.360	1.314
2011	1,289.3	1,311.1	6.1%	1.277	1.238
2012	1,408.6	1,410.8	7.6%	1.178	1.151
2013	1,449.3	1,449.2	2.7%	1.137	1.120
2014	1,417.2	1,426.3	-1.6%	1.130	1.138
2015	1,513.5	1,523.3	6.8%	1.103	1.066
2016	1,569.7	1,586.6	4.2%	1.044	1.023
2017	1,616.5	1,623.2	2.3%	1.001	1.000

B 2 Superimposed inflation

A realistic level of superimposed inflation is allowed for in the outstanding claim reserves and projected breakeven premium rate.

We have analysed the superimposed inflation separately for each payment type, and for each valuation method.

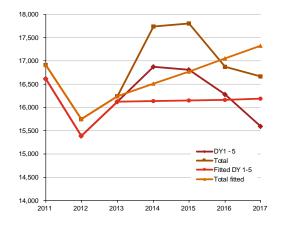
The recent trends in real growth, i.e. superimposed inflation, are shown in the charts below.

We have used the following averaging periods to analyse the superimposed inflation:

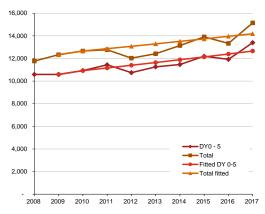
Superimposed Inflation	on - averaging periods (ye	ars)				
			Allied Health,			
			Vocational			
			Rehabilitation, Non-			
			Compensation			Redemptions And
		Medical And	Payments (Other),	Other Goods And		Non-Economic
	Weekly Benefits	Hospital	Death	Services	Legals	Lump Sum
PPAC/PPCF	5	4	5	5	6	4
PPCI	8	8	8	8	8	5

Weekly benefits

PPAC



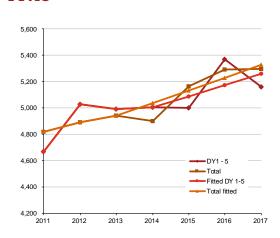
PPCI

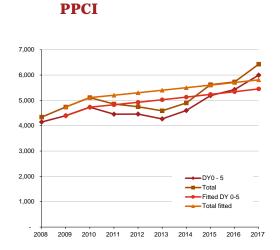


PwC Assumptions

Medical and hospital

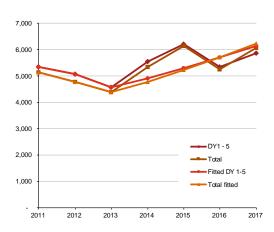




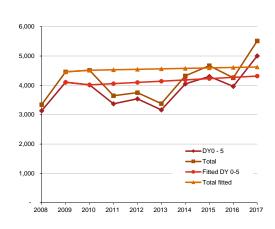


Allied health, vocational rehabilitation, non-compensation other and death

PPAC

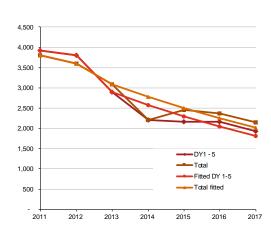


PPCI

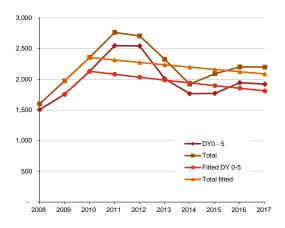


Other goods and services

PPAC

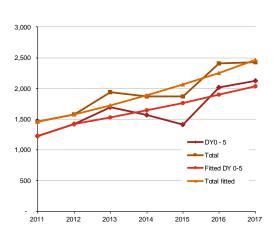


PPCI

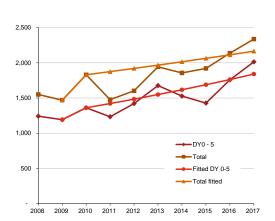


Legal



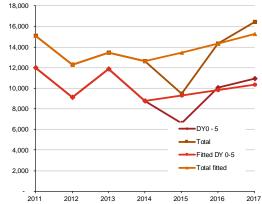


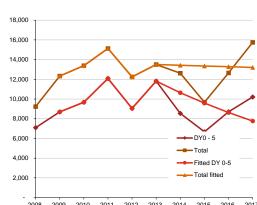




Redemptions and non-economic lump sum







The above graphs for *Redemptions and Non-Economic Lump Sum* payment group we have excluded payments over \$1 million in an individual payment year. This has been done to try to reduce the volatility to find a true underlying superimposed inflation rate for the payment group.

This analysis of trends leads to the following assumed rates of superimposed inflation.

Superimposed Infl	ation		Allied Health, Vocational Rehabilitation, Non-			Redemptions And Non-	
	Weekly Benefits	Medical And Hospital	Compensation	Other Goods And Services	Legals	Economic Lump Sum	Total
PPAC/PPCF	2.1%	2.1%	1.0%	0.0%	4.4%	1.6%	
PPCI	2.1%	2.1%	1.0%	0.0%	4.4%	1.6%	
30 Jun 17	2.1%	2.1%	1.0%	0.0%	4.4%	1.6%	1.9%
30 Jun 16	1.8%	2.0%	0.0%	0.0%	3.5%	1.6%	1.6%

Note a minimum of zero is applied to the superimposed inflation, hence classes with a revealed negative superimposed inflation have had a value of 0% applied. For all payment types, we adopted the PPCI superimposed inflation for the PPAC/PPCF methods. For redemptions and non-economic lump sum, we adopted the same superimposed inflation rate as last year due to the volatility.

In total, our superimposed inflation estimate of 1.9% p.a. is a 0.3% increase on the 1.6% p.a. adopted for the previous valuation. Our estimate of superimposed inflation is higher than the previous valuation for all payment type, especially Legals.

We calculate the total as a weighted average across the payment groups, weighted by the total outstanding claims estimate.

B3 Expenses

Claims handling expenses

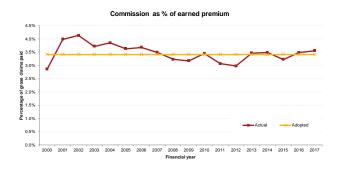
We have reviewed the allowances made for claims handling expenses in the insurers' and self-insurers' returns provided to us, and used our knowledge and experience of other workers compensation schemes in Australia to set the following claims handling expense assumptions for use in the outstanding claims liability:

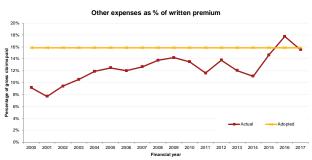
- 6% of projected future claim payments for insurers
- 7% of projected future claim payments for self-insurers.

These are the same as the previous valuation.

Commission and other expenses (includes claims handling expenses)

The historical commission rate as a percentage of earned premium and other expenses as a percentage of written premium are:





The commission as a percentage of earned premium decreased from 2001 to 2009, after which it has become more stable. Over 2001 to 2009, other expenses as a percentage of written premium increased significantly, and have been volatile since then, increasing significantly in 2015 and 2016. We do not know what has driven the increase in other expenses since 2015 but it could be due to increases in IT costs and reallocation of expenses amongst the lines of insurance.

For the break-even premium we have used an average of the last three years to set the commission rate, as a proportion of earned premium, and average of three years for the other expense rate, as a proportion of written premium, as follows:

(\$000s)	Underwriting year										
	2017	2016	2015	2014	2013	Adopted					
Gross written premium (a)	134,286	114,332	140,232	156,328	126,743						
Earned premium (b)	126,442	119,514	141,354	137,054	106,715						
Commission paid (c)	4,489	4,163	4,558	4,775	3,697						
Other expenses (d)	20,821	20,282	20,537	17,314	15,224						
Commission rate (e)	3.6%	3.5%	3.2%	3.5%	3.5%	3.4%					
Other expense rate (f)	15.5%	17.7%	14.6%	11.1%	12.0%	15.9%					

Notes: (a), (b), (c), (d) actual values taken from Consolidated Form A

(e) = (c) / (b)

(f) = (d) / (a)

The adopted rate is used in our calculation of the break-even premium rate for the next financial year. To show the adequacy of past rates we have used the actual dollar values of commission and other expenses paid.

Compared to the previous valuation, the adopted commission rate has remained stable at 3.4%, and the adopted other expense rate has increased from 14.1% to 15.9% in 2017. As a three year average is adopted the increase in the other expense rate is mainly due to the expense ratio for 2017 being higher than 2014.

In total, the commission and other expense rate make up 19.2% of the break-even premium rate, which is higher than the 17.5% adopted for the 30 June 2016 valuation.

B4 Reinsurance

We have used the additional information provided by insurers to allow for reinsurance recoveries on large claims, which are expected to exceed the retention limit. This is equivalent to 8% of all claims, and 10% of all claims in our previous valuation. We compared the reinsurance recoveries based on the large claims with insurers' total reinsurance recoveries and they were similar, though slightly lower, so we did not feel it was necessary to allow for any further reinsurance recoveries on the smaller claims.

We reviewed the self-insurers' reports and as none of them allowed for any reinsurance recoveries, we have not allowed for any reinsurance recoveries for self-insurers.

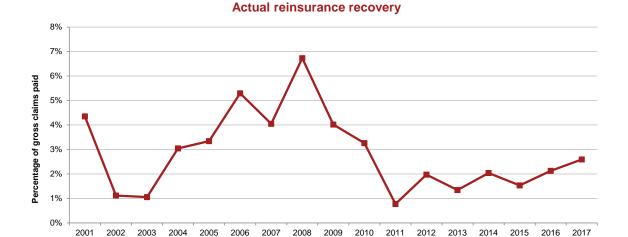
The following table and chart show the historical reinsurance recoveries received by approved insurers. The reinsurance recovery rate is defined as a proportion of the gross claims paid. This is provided for information purposes and was not used for this valuation.

PwC Assumptions

Financial	Gross claims	Reinsurance	Reinsurance
year	paid (a) (\$000s)	recoveries (b) (\$000s)	recovery (c) (%)
2001	44,638	1,941	4.3%
2002	38,683	432	1.1%
2003	40,584	429	1.1%
2004	47,842	1,457	3.0%
2005	49,586	1,658	3.3%
2006	45,946	2,431	5.3%
2007	52,003	2,106	4.0%
2008	57,010	3,837	6.7%
2009	71,840	2,886	4.0%
2010	77,791	2,537	3.3%
2011	83,908	649	0.8%
2012	82,569	1,630	2.0%
2013	89,191	1,199	1.3%
2014	91,942	1,876	2.0%
2015	91,120	1,398	1.5%
2016	102,891	2,189	2.1%
2017	122,608	3,178	2.6%

Notes: (a), (b) actual values taken from Consolidated Form A

(c) = (b) / (a)



Actual reinsurance recovery

Financial year

B 5 GST

No explicit allowance has been made for GST net of ITC and/or DAM as our adopted bases rely on data, which includes GST net of ITC and/or DAM. The 10% GST on the workers' compensation premium itself (which employers will generally be able to recover via an input tax credit) is not included in our analysis or the recommended premium rates.

B 6 2015 legislative amendments

The 2015 legislative amendments were set out in two parts.

The first amendment bill, Workers' Rehabilitation and Compensation Legislation Amendment Bill 2015, passed in March 2015 and came into effect 1 July 2015. The benefit changes that were part of this bill include:

- Presumptive legislation for firefighters and volunteers to make it easier for firefighters and volunteer
 firefighters to claim workers' compensation if they are diagnosed with one of the 12 cancers listed in the
 legislation schedule
- A change in the definition of work to align with the PAYG definition used by the Australian Taxation Office (ATO)
- Increased period of compensation for older workers by extending weekly benefits from 26 weeks to 104 weeks for workers aged 67 years and older
- Five year cap on weekly benefits for claimants with a permanent impairment of less than 15% and all medical and other costs are limited to one additional year
- Increase in death and funeral benefits to 364 times the average weekly earnings
- Compensation will not be provided for stroke or heart attacks that are not caused by work
- Capping the calculation for normal weekly earnings. During the first 26 weeks when a worker is unable to work, their compensation payments are paid at their normal weekly earnings. After 26 weeks, compensation payments are paid at 75% of their normal weekly earnings. There is now a cap on the calculation of a worker's normal weekly earnings after 26 weeks to 250% of the ABS average weekly earnings.

The second amendment bill, the Return to Work Legislation Amendment Bill 2015, was passed in August 2015 and came into effect on 1 October 2015. This bill included:

- Payment of up to 1.5 times Average Weekly Earnings for counselling and support
- While a claim is deferred, the employer is required to make weekly payments of compensation and, in the case of claims for mental stress, engage in rehabilitation
- Formal notice be provided to the worker of any pending step down or cancellation 14 days prior to it taking effect
- A mediator may recommend workers receive legal advice paid for by the employer.
- Negotiated settlements. There will be provision for the finalisation of the claim by the payment of a lump sum through negotiated settlement. The legislation requires a qualifying period of 104 weeks before a negotiated settlement
- Settlement of disputed claims. There is provision to allow for the settlement of disputed claims for compensation (whether disputed on a question of fact or law or both) and settlement of contested applications to the Work Health Court
- Exclusion of journey claims to and from work. Journeys that are considered to be in the course of employment are not excluded.

We costed the following changes in our report titled *Actuarial costing of Northern Territory workers* compensation scheme changes dated 11 September 2014:

- Increased period of compensation for older workers by extending weekly benefits from 26 weeks to 104
 weeks for workers aged 67 years and older
- Five year cap on weekly benefits for claimants with a permanent impairment of less than 15% and all medical and other costs are limited to one additional year.

We also provided commentary on some other proposed scheme changes including:

- Increase in death and funeral benefits
- New settlement regime
- Exclusion of journey claims
- Weekly benefit cap of 250% of normal weekly earnings.

The estimated cost of the two changes above was a 2.8% reduction. This has been allowed for in our calculations of the outstanding claims liabilities as at 30 June 2017 for the 2015/16 and 2016/17 accident years and the future costs for the 2017/18 accident year. There is no allowance for the 2015 legislative changes in the outstanding claims liability as at 30 June 2017 for accident years before 2015/16.

As the scheme changes were broader than covered by our report the actual impact could be different to estimated. We recommend WorkSafe NT and insurers closely monitor the experience to ensure that there are not any unintended consequences.

B 7 Wage and premium development factors

This year we have used earned wages and premium for the second time. Earned wages and premium develop over time as wages are initially estimated at the beginning of the underwriting year and are updated with actual wages when known and reported to the insurers. Earned premium develops based on the development of earned wages but also based on adjustments for burner policies as the claim experience emerges.

The table below shows the development factors applied to earned wages. These are based on the development that occurred from 2015 to 2016 and 2016 to 2017.

Earned wages development factors								
Development								
year	2017	2016						
0	1.030	1.044						
1	1.017	1.026						
2	1.007	1.010						
3	1.000	1.000						

The table below shows the development factors applied to earned premium, including the earned but not yet raised (EBNYR) premium. These are based on the development that occurred from 2015 to 2016 and 2016 to 2017.

Earned premium development factors Development								
year	2017	2016						
0	1.030	1.042						
1	1.024	1.040						
2	1.000	1.000						
3	1.000	1.000						

Appendix C Insurer outstanding claim valuation

C1 Data used in the valuation

C1.1 Number of claims reported

Financial				Number o	f claims re	ported (a)	for develo	pment yea	ır:			
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2005	2,481	213	7	6	1	1	0	2	1	1	1	2,714
2006	2,483	254	9	6	0	0	0	0	0	2	4	2,758
2007	2,224	214	10	6	1	3	0	1	0	0	4	2,463
2008	2,463	229	10	3	3	4	2	0	0	0	0	2,714
2009	2,361	248	10	3	2	2	1	1	0	0	5	2,633
2010	2,257	230	9	4	1	0	1	0	0	0	19	2,521
2011	2,385	240	18	6	2	1	1	0	0	0	3	2,656
2012	2,348	254	10	5	3	2	1	0	1	1	2	2,627
2013	2,423	256	13	9	1	1	0	0	0	1	1	2,705
2014	2,385	320	15	6	4	0	0	1	1	1	4	2,737
2015	2,335	335	21	4	2	3	2	0	0	0	2	2,704
2016	2,257	280	16	7	1	1	2	0	0	0	0	2,564
2017	2,141	244	18	7	3	0	2	0	0	0	2	2,417

Note: From summary of Form B returns up to 30 June 2017.

C1.2 Cumulative claims reported

Financial			Cumulat	ive numbe	r of claims	reported	(a) for dev	elopment y	/ear:		
Year	0	1	2	3	4	5	6	7	8	9	10
2005	2,481	2,551	2,854	2,890	2,864	2,963	2,920	2,831			
2006	2,483	2,735	2,560	2,860	2,890	2,864	2,963	2,920	2,831		
2007	2,224	2,697	2,745	2,566	2,861	2,893	2,864	2,964	2,920	2,831	
2008	2,463	2,453	2,707	2,748	2,569	2,865	2,895	2,864	2,964	2,920	2,831
2009	2,361	2,711	2,463	2,710	2,750	2,571	2,866	2,896	2,864	2,964	2,925
2010	2,257	2,591	2,720	2,467	2,711	2,750	2,572	2,866	2,896	2,864	2,983
2011	2,385	2,497	2,609	2,726	2,469	2,712	2,751	2,572	2,866	2,896	2,867
2012	2,348	2,639	2,507	2,614	2,729	2,471	2,713	2,751	2,573	2,867	2,898
2013	2,423	2,604	2,652	2,516	2,615	2,730	2,471	2,713	2,751	2,574	2,868
2014	2,385	2,743	2,619	2,658	2,520	2,615	2,730	2,472	2,714	2,752	2,578
2015	2,335	2,720	2,764	2,623	2,660	2,523	2,617	2,730	2,472	2,714	2,754
2016	2,257	2,615	2,736	2,771	2,624	2,661	2,525	2,617	2,730	2,472	2,714
2017	2,141	2,501	2,633	2,743	2,774	2,624	2,663	2,525	2,617	2,730	2,474

Note: Cumulative claim reports from table above.

C1.3 Active claims

Financial				Active of	claims (a) a	at the end	of develop	ment year	:			
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2005	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	760	241	132	74	46	34	28	22	14	19	81	1,451
2011	778	238	112	70	42	31	29	19	22	12	87	1,440
2012	793	213	123	67	49	34	22	15	13	17	82	1,428
2013	844	231	110	72	44	37	26	15	14	10	83	1,486
2014	931	293	100	52	45	27	28	25	11	13	72	1,597
2015	854	279	145	57	37	35	25	23	19	10	59	1,543
2016	1,007	288	140	81	48	24	27	19	19	14	63	1,730
2017	912	281	152	68	52	26	14	22	16	16	65	1,624

Note: From summary of Form B returns up to 30 June 2017. Active claims were provided for the first time at 30 June 2010.

C1.4 Claim payments

Financial				Clain	n payments	s (a) for de	velopment	year (\$000	0):			
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2005	9,859	9,677	6,938	7,693	3,082	0	0	0	0	0	0	37,249
2006	10,364	12,116	5,163	4,972	2,661	2,189	0	0	0	0	0	37,464
2007	10,102	12,555	7,357	5,581	5,574	3,397	1,173	0	0	0	0	45,739
2008	12,608	12,976	7,253	8,179	4,472	3,692	2,850	1,428	0	0	0	53,458
2009	13,725	17,159	10,609	6,702	5,625	3,113	3,122	1,584	1,138	0	0	62,778
2010	14,500	17,059	11,438	10,416	6,032	3,518	1,703	5,410	1,243	1,327	0	72,647
2011	15,305	18,858	13,739	9,562	7,328	7,050	1,695	1,446	3,003	2,297	3,724	84,008
2012	16,961	19,035	12,651	9,217	6,019	6,525	2,406	2,350	1,204	2,307	4,390	83,065
2013	18,500	22,422	11,430	7,730	16,149	3,794	2,519	661	726	1,124	4,351	89,405
2014	19,223	24,275	9,756	10,476	6,857	5,760	3,421	4,773	1,958	476	5,038	92,014
2015	19,207	24,696	15,559	9,393	3,884	4,418	3,315	2,818	1,704	1,546	5,972	92,513
2016	21,208	24,656	15,241	14,458	5,199	4,980	3,152	2,253	4,170	2,208	4,819	102,345
2017	23,374	30,461	20,576	12,545	7,274	5,042	5,830	2,998	1,629	2,446	9,723	121,897

Note: Data extracted from the WIMS system up to 30 June 2017.

C1.5 Case estimates

Financial	Case estimates (a) for development year:											
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2014	41,909	30,987	25,229	11,474	13,213	7,832	18,376	10,870	3,624	4,128	33,758	201,399
2015	49,148	25,816	20,696	16,394	10,023	7,330	9,704	15,151	8,164	2,212	32,364	197,002
2016	43,796	39,453	16,396	15,291	13,782	7,456	6,243	9,415	12,568	4,855	32,279	201,533
2017	46,664	33,128	33,218	12,093	12,531	7,468	4,042	5,589	8,461	10,207	31,103	204,503

Note: From summary of Form B returns up to 30 June 2017. Case estimates were provided for the first time at 30 June 2014.

C 2 Actual and projected claims experience during 2016/17

This section compares the actual experience over the 2017 financial year with the expected experience based on the previous scheme valuation as at 30 June 2016.

C2.1 Number of claims reported

	Number of claims reported		
Accident year	Combined total		Actual /
ended 30 June	Actual (a)	Projected (b)	expected (c)
2016	244	295	83%
2015	18	17	107%
2014	7	6	121%
2013	3	2	129%
2012	0	1	0%
2011	2	1	196%
2010	0	0	0%
2009	0	0	0%
2008	0	1	0%
2007 and earlier	2	3	59%
Total	276	327	84%

Notes: (a) Extracted from the WIMS database to 30 June 2017

(b) Derived using the reporting rates in Appendix C3.1 of our previous scheme report dated 16 June 2017

 $(c) = (a) / (b) \times 100.$

C2.2 Proportion of claims finalised

Pro	portion of claims fina	of claims finalised (a) during 2016/17					
Accident year			Actual /				
ended 30 June	Actual	Projected (b)	expected (c)				
2016	78%	76%	102%				
2015	50%	54%	93%				
2014	54%	48%	112%				
2013	38%	32%	119%				
2012	46%	32%	145%				
2011	46%	23%	204%				
2010	19%	20%	94%				
2009	16%	20%	78%				
2008	16%	20%	78%				
2007 and earlier	18%	20%	87%				
Total	64.5%	63.0%	102%				

Note: (a) Defined as:

number of claims finalised during the year

number outstanding at beginning of year + number reported during the year

(b) According to claim finalised per handled rate in appendix C3.1 of previous scheme report dated 16 June 2017. Total is weighted average using the current year's actual number of claims handled by occurrence year as the weights.

C2.3 Claim payments

	Amount of claim payment	s during 2016/17	
Accident year	Combined total (\$000)		Actual /
ended 30 June	Actual (a)	Projected (b)	expected (c)
2016	30,461	27,161	112%
2015	20,576	16,843	122%
2014	12,545	12,700	99%
2013	7,274	9,696	75%
2012	5,042	7,094	71%
2011	5,830	2,565	227%
2010	2,998	2,754	109%
2009	1,629	4,022	41%
2008	2,446	3,557	69%
2007 and earlier	9,723	10,867	89%
Total	98,523	97,259	101%

Notes: (a) Extracted from the WIMS database to 30 June 2017

(b) From previous scheme report dated 16 June 2017, in 30 June 2017 values

(c) = (a) / (b) x 100.

C 3 Analysis and projection models

C3.1 All payment types

Claim notification pattern

Financial	Chain ladder ratio (a) for development year:									
Year	1	2	3	4	5	6	7	8	9) (onwards
2005	1.091	1.002	1.002	1.000	1.000	1.000	1.001	1.053	1.100	1.143
2006	1.102	1.004	1.002	1.000	1.000	1.000	1.000	1.000	1.100	1.364
2007	1.086	1.004	1.002	1.000	1.001	1.000	1.000	1.000	1.000	1.182
2008	1.103	1.004	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000
2009	1.101	1.004	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.002
2010	1.097	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.006
2011	1.106	1.007	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.001
2012	1.106	1.004	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.001
2013	1.109	1.005	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2014	1.132	1.006	1.002	1.002	1.000	1.000	1.000	1.000	1.000	1.002
2015	1.140	1.008	1.002	1.001	1.001	1.001	1.000	1.000	1.000	1.001
2016	1.120	1.006	1.003	1.000	1.000	1.001	1.000	1.000	1.000	1.000
2017	1.108	1.007	1.003	1.001	1.000	1.001	1.000	1.000	1.000	1.001
Adopted (b)	1.125	1.007	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.001

Notes: (a) Using cumulative claim report numbers from data

(b) Calculated using a four year weighted average for development years (DY) 1 to 2 and a five year average for all other development years.

Numbers of claims incurred

	Number of claims								
Accident	Reported to	IBNR at	Incurred						
Year	30 June 2017 (a)	30 June 2017 (b)	(c)						
2005	2,754	0	2,754						
2006	2,714	0	2,714						
2007	2,474	0	2,474						
2008	2,730	2	2,732						
2009	2,617	2	2,619						
2010	2,525	2	2,527						
2011	2,663	3	2,666						
2012	2,624	4	2,628						
2013	2,774	5	2,779						
2014	2,743	7	2,750						
2015	2,633	14	2,647						
2016	2,501	29	2,530						
2017	2,141	297	2,438						

Notes: (a) from number reported in appendix C1.1

(b) from pattern in chain ladder ratio table above

(c) = (a) + (b)

Claim finalised per handled rate

Financial Finalisation rate (a) for development year:											
Year	0	1	2	3	4	5	6	7	8	9 1	0 onward
2011	0.674	0.762	0.568	0.493	0.447	0.340	0.171	0.321	0.000	0.143	0.155
2012	0.662	0.794	0.504	0.427	0.329	0.227	0.313	0.483	0.350	0.261	0.188
2013	0.652	0.780	0.513	0.455	0.353	0.260	0.235	0.318	0.067	0.286	0.170
2014	0.610	0.748	0.593	0.552	0.408	0.386	0.243	0.074	0.313	0.133	0.258
2015	0.634	0.780	0.538	0.452	0.315	0.271	0.138	0.179	0.240	0.091	0.322
2016	0.554	0.746	0.525	0.467	0.172	0.368	0.270	0.240	0.174	0.263	0.087
2017	0.574	0.775	0.503	0.537	0.381	0.458	0.462	0.185	0.158	0.158	0.177
Adopted (b)	0.588	0.768	0.522	0.493	0.335	0.346	0.264	0.194	0.194	0.192	0.208

Notes: (a) Defined as: Number of claims finalised / number of claims handled

(b) Calculated using a three year weighted average for DYs 0 to 2 and five year weighted average for all development years.

C3.2 Weekly benefits

Claim payments

Financial	Claim payments (a) for development year:											
Year	0	1	2	3	4	5	6	7	8	91	0 onwards	Total
2005	4,648,838	3,782,442	2,407,078	2,072,924	890,009	0	0	0	0	0	1,500,792	15,302,083
2006	4,772,881	5,000,913	1,552,571	1,730,175	883,068	605,665	0	0	0	0	1,133,706	15,678,979
2007	4,621,258	5,522,676	2,312,112	1,299,739	1,642,490	672,462	632,222	0	0	0	781,090	17,484,049
2008	5,922,879	5,883,407	2,769,084	1,656,662	1,318,783	1,132,900	773,494	597,426	0	0	903,825	20,958,460
2009	6,228,835	6,655,731	3,960,452	1,258,278	832,907	604,411	884,027	399,102	380,034	0	1,880,764	23,084,541
2010	6,456,241	6,548,963	3,445,777	2,485,146	1,484,384	465,078	531,917	801,976	407,221	613,423	1,283,008	24,523,134
2011	7,024,860	8,365,356	2,792,467	2,222,666	1,470,556	1,455,385	512,217	523,367	686,608	257,529	931,045	26,242,056
2012	7,653,496	7,579,813	3,964,698	1,803,241	1,270,971	1,584,552	642,719	349,971	409,600	551,010	1,097,617	26,907,688
2013	8,827,058	8,886,932	3,561,415	2,734,261	1,115,920	1,368,720	967,895	4,494	372,833	302,744	1,087,873	29,230,145
2014	8,103,221	10,405,904	3,401,196	2,381,386	2,139,819	1,102,380	1,214,201	678,973	358,515	389,871	1,259,486	31,434,952
2015	8,230,264	10,999,095	5,605,649	2,512,465	1,283,333	1,240,737	573,282	805,123	922,606	332,210	1,492,877	33,997,641
2016	8,763,398	10,688,103	5,349,633	3,189,781	1,338,501	815,046	667,108	474,422	522,645	679,442	1,204,803	33,692,882
2017	9,778,919	13,201,879	5,918,120	2,612,577	1,987,221	649,422	520,104	627,099	441,730	423,495	2,430,654	38,591,220

Notes: (a) Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per active claim

Financial			Weekly l	Benefits PP	AC (a) for de	velopment y	ear:			
Year	1	2	3	4	5	6	7	8	9 10	onwards
2011	14,057	14,797	21,504	25,379	40,405	19,239	23,871	39,857	23,492	11,890
2012	11,474	19,618	18,961	21,383	44,430	24,416	14,212	25,388	29,496	13,057
2013	12,737	19,003	25,265	18,930	31,747	32,354	232	28,249	26,468	12,489
2014	13,927	16,632	24,454	33,570	28,300	37,068	29,498	26,998	31,456	15,298
2015	13,034	21,107	27,719	27,228	30,419	23,425	31,723	40,715	33,319	19,377
2016	13,070	20,025	22,974	24,524	23,005	19,906	19,819	23,732	37,346	18,235
2017	13,124	20,570	18,680	24,559	13,544	21,693	23,250	23,273	22,312	31,599
Adopted (b)	13,495	21,234	22,645	25,279	22,078	21,509	25,143	29,222	30,059	18,907

Notes: (a) In 30 June 2017 values

(b) Calculated using a three year weighted average for DYs 1 to 7, a five year weighted average for DY8 and, adjusting for outliers where necessary.

Average real payment per claim incurred

Financial				Weekly B	enefits PPC	(a) for deve	lopment ye	ar:				
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	2,813	2,445	1,399	1,192	517	0	0	0	0	0	312,662	321,029
2006	2,817	2,909	965	966	488	338	0	0	0	0	121,074	129,557
2007	2,950	3,213	1,326	796	904	366	348	0	0	0	47,439	57,343
2008	3,243	3,557	1,526	900	765	591	399	312	0	0	478	11,771
2009	3,395	3,478	2,285	662	432	335	440	197	189	0	918	12,330
2010	3,474	3,400	1,715	1,366	744	230	281	380	191	291	585	12,655
2011	3,366	4,227	1,362	1,039	759	685	238	259	306	113	415	12,768
2012	3,430	3,349	1,847	811	548	754	279	150	187	226	446	12,027
2013	3,610	3,844	1,518	1,230	484	569	445	2	154	133	431	12,420
2014	3,328	4,230	1,462	1,009	956	475	502	310	149	160	552	13,134
2015	3,431	4,412	2,225	1,055	531	542	241	325	411	135	598	13,907
2016	3,617	4,218	2,031	1,199	532	319	276	189	200	287	464	13,331
2017	4,015	5,223	2,238	951	716	247	195	248	169	155	983	15,142
Adopted (b)	3,893	4,809	2,233	1,087	642	431	332	268	213	172	597	14,679

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year average for DYs 0 and 1, a three year weighted average for DY2 and a five year average for all other DYs, adjusting for outliers where necessary. A decay factor of 78% has been assumed after DY9. The aggregate for DY10 onwards is shown.

Estimates from models

Weekly Benefit	ts												
	Estimated ou	tstanding cla	nims										
Accident	claims at 30 J	laims at 30 June 2017 (\$000s) (a) Weighting											
Year	PPAC	PPCI	Adopted	PPAC	PPCI								
2017	29,604	27,769	28,503	40%	60%								
2016	17,250	16,187	16,612	40%	60%								
2015	11,740	10,732	11,135	40%	60%								
2014	6,961	7,964	6,961	100%	0%								
2013	5,649	6,116	5,649	100%	0%								
2012	3,369	4,545	3,369	100%	0%								
2011	1,990	3,640	1,990	100%	0%								
2010	2,878	2,709	2,878	100%	0%								
2009	1,977	2,197	1,977	100%	0%								
2008 & earlier	8,215	7,358	8,215	100%	0%								
Total	89,634	89,217	87,290										

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.3 Medical and hospital

Claim payments

Financial					Claim payr	nents (a) for	developme	nt year:				
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	2,614,630	1,570,099	802,613	331,488	175,175	0	0	0	0	0	383,090	5,877,095
2006	2,749,613	2,074,713	419,634	386,572	296,048	62,150	0	0	0	0	289,388	6,278,118
2007	2,585,463	1,646,653	687,767	394,179	316,294	147,263	83,368	0	0	0	199,380	6,060,367
2008	3,579,319	2,209,555	540,753	606,722	187,383	220,673	65,565	69,104	0	0	230,709	7,709,783
2009	3,741,213	2,808,425	909,690	424,545	117,673	143,441	118,315	55,304	46,632	0	480,081	8,845,319
2010	4,117,880	2,539,692	1,039,031	655,342	466,859	170,986	145,452	112,152	150,648	66,583	327,499	9,792,124
2011	4,550,111	2,725,107	722,979	478,082	334,251	318,953	124,344	65,743	323,875	142,187	237,657	10,023,289
2012	4,665,246	3,373,754	928,418	474,053	265,961	250,060	137,885	60,493	51,395	158,574	280,176	10,646,015
2013	4,663,542	3,602,423	1,043,761	442,068	197,289	183,961	255,237	28,860	19,463	157,285	277,689	10,871,578
2014	5,381,289	3,836,114	764,401	626,585	321,885	213,159	120,997	185,779	39,070	17,751	321,494	11,828,524
2015	6,208,610	4,174,934	1,174,615	357,453	436,801	299,445	148,729	174,226	296,992	34,874	381,070	13,687,749
2016	6,469,808	4,974,133	1,204,790	423,421	200,775	253,076	183,046	125,883	95,932	50,978	307,536	14,289,378
2017	6,982,733	5,345,666	1,788,642	412,227	351,848	162,704	232,516	102,941	108,095	27,720	620,445	16,135,537

Note: Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per active claim

Financial			Medical And	d Hospital P	PAC (a) for c	levelopmen	t year:			
Year	1	2	3	4	5	6	7	8	9 10	onwards
2011	4,579	3,831	4,625	5,768	8,855	4,670	2,999	18,801	12,970	3,035
2012	5,107	4,594	4,985	4,474	7,012	5,238	2,457	3,186	8,489	3,333
2013	5,163	5,569	4,085	3,347	4,267	8,532	1,491	1,475	13,751	3,188
2014	5,134	3,738	6,434	5,050	5,472	3,694	8,071	2,942	1,432	3,905
2015	4,947	4,423	3,944	9,267	7,341	6,077	6,865	13,106	3,498	4,946
2016	6,083	4,510	3,050	3,679	7,143	5,462	5,259	4,356	2,802	4,655
2017	5,314	6,217	2,948	4,348	3,393	9,698	3,817	5,695	1,460	8,066
Adopted (b)	5,667	5,377	2,999	4,211	5,414	6,463	5,230	6,209	4,188	4,826

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DYs 1 to 3 and a five year weighted average for all other DYs, adjusting for outliers where necessary.

Average real payment per claim incurred

Financial				Medical And	l Hospital Pl	PCI (a) for de	velopment y	/ear:				
Year	0	1	2	3	4	5	6	7	8	9 10	onwards	Total
2005	1,582	1,015	466	191	102	0	0	0	0	0	79,810	83,166
2006	1,623	1,207	261	216	164	35	0	0	0	0	30,905	34,410
2007	1,650	958	394	241	174	80	46	0	0	0	12,109	15,654
2008	1,960	1,336	298	330	109	115	34	36	0	0	122	4,339
2009	2,039	1,468	525	223	61	79	59	27	23	0	234	4,739
2010	2,215	1,318	517	360	234	84	77	53	71	32	149	5,111
2011	2,180	1,377	353	223	173	150	58	33	144	63	106	4,859
2012	2,091	1,491	433	213	115	119	60	26	23	65	114	4,749
2013	1,907	1,558	445	199	86	77	117	12	8	69	110	4,588
2014	2,210	1,559	329	266	144	92	50	85	16	7	141	4,899
2015	2,588	1,675	466	150	181	131	63	70	132	14	153	5,623
2016	2,670	1,963	457	159	80	99	76	50	37	22	118	5,731
2017	2,867	2,115	677	150	127	62	87	41	41	10	251	6,428
Adopted (b)	2,824	2,079	577	155	123	92	78	51	45	24	152	6,200

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average DYs 0 to 3 and a five year weighted average for all other DYs, adjusted for outliers where necessary. A decay factor of 80% has been assumed after DY8. The aggregate for DY10 onwards is shown.

Estimates from models

Medical And Ho	ospital				
	Estimated outs	standing cla	ims		
Accident	claims at 30 Ju	ıne 2017 (\$0	00s) (a)	Weightir	ng
Year	PPAC	PPCI	PPAC	PPCI	
2017	8,888	8,569	8,697	40%	60%
2016	3,687	3,508	3,580	40%	60%
2015	2,262	2,086	2,156	40%	60%
2014	1,521	1,704	1,521	100%	0%
2013	1,332	1,348	1,332	100%	0%
2012	787	1,011	787	100%	0%
2011	441	799	441	100%	0%
2010	641	615	641	100%	0%
2009	447	507	447	100%	0%
2008 & earlier	2,091	1,905	2,091	100%	0%
Total	22,096	22,052	21,692		

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.4 Allied health, vocational rehabilitation, non-compensation (other) and death

Claim payments

Financial					Claim payr	nents (a) for	developme	nt year:				
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	1,358,925	1,890,566	1,041,944	479,728	240,606	0	0	0	0	0	277,323	5,289,092
2006	1,326,485	2,025,411	873,541	573,235	263,167	148,520	0	0	0	0	209,491	5,419,850
2007	1,589,128	1,942,786	927,530	397,675	336,791	243,939	136,410	0	0	0	144,333	5,718,592
2008	1,799,554	2,127,851	652,592	479,144	189,028	258,609	145,286	79,879	0	0	167,013	5,898,956
2009	2,353,552	3,397,234	983,622	480,839	325,118	106,012	225,114	86,876	60,346	0	347,536	8,366,249
2010	2,415,648	2,698,696	1,323,850	673,720	415,171	157,705	116,269	183,296	126,476	382,779	237,080	8,730,690
2011	1,619,391	2,841,896	969,159	764,929	342,332	321,059	136,660	81,571	145,650	70,965	172,042	7,465,654
2012	2,535,609	2,492,688	1,294,941	403,986	640,432	507,062	102,063	41,001	58,384	93,257	202,822	8,372,245
2013	2,450,396	2,841,820	1,134,442	508,203	298,929	216,879	143,948	94,135	33,874	30,464	201,022	7,954,112
2014	3,356,598	3,612,906	1,485,319	731,605	355,967	214,183	243,243	65,783	62,260	39,744	232,733	10,400,341
2015	2,555,311	4,026,095	2,104,207	995,769	451,970	418,317	138,582	191,187	166,531	116,635	275,860	11,440,464
2016	2,995,131	3,911,142	1,873,556	801,783	242,863	193,909	178,898	96,043	114,604	118,250	222,629	10,748,808
2017	3,554,062	5,319,846	2,380,581	868,908	399,315	205,306	482,730	196,962	65,307	121,999	449,147	14,044,163

Note: Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per active claim

Financial	Allied Health,	Vocational	Rehabilitati	on, Non-Con	npensation l	Payments (O	ther), Death	PPAC (a) fo	r developme	ent year:
Year	1	2	3	4	5	6	7	8	9 10	onwards
2011	4,775	5,136	7,401	5,908	8,913	5,133	3,720	8,455	6,473	2,197
2012	3,773	6,408	4,248	10,775	14,218	3,877	1,665	3,619	4,992	2,413
2013	4,073	6,053	4,696	5,071	5,030	4,812	4,863	2,567	2,663	2,308
2014	4,835	7,263	7,513	5,585	5,499	7,426	2,858	4,688	3,207	2,827
2015	4,771	7,923	10,986	9,589	10,256	5,663	7,533	7,349	11,698	3,580
2016	4,783	7,013	5,775	4,450	5,473	5,338	4,012	5,204	6,500	3,370
2017	5,288	8,274	6,213	4,935	4,282	20,134	7,302	3,441	6,428	5,839
Adopted (b)	5,056	7,654	6,812	5,756	6,090	8,034	5,388	4,924	5,971	3,494

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DYs 1 to 2, and a five year average for all other DYs.

65

Average real payment per claim incurred

Financial	Allied H	lealth, Vocati	onal Rehab	ilitation, No	n-Compensa	tion Payme	nts (Other), [Death PPCI (a) for devel	opment yea	ar:	
Year	0	1	2	3	4	5	6	7	8	9 10	onwards	Total
2005	822	1,222	605	276	140	0	0	0	0	0	57,775	60,841
2006	783	1,178	543	320	145	83	0	0	0	0	22,373	25,425
2007	1,014	1,130	532	244	185	133	75	0	0	0	8,766	12,080
2008	985	1,287	360	260	110	135	75	42	0	0	88	3,341
2009	1,283	1,775	568	253	169	59	112	43	30	0	170	4,460
2010	1,300	1,401	659	370	208	78	61	87	59	182	108	4,513
2011	776	1,436	473	358	177	151	63	40	65	31	77	3,646
2012	1,136	1,101	603	182	276	241	44	18	27	38	82	3,749
2013	1,002	1,229	484	229	130	90	66	39	14	13	80	3,376
2014	1,379	1,468	638	310	159	92	101	30	26	16	102	4,322
2015	1,065	1,615	835	418	187	183	58	77	74	47	111	4,671
2016	1,236	1,543	711	301	97	76	74	38	44	50	86	4,256
2017	1,459	2,105	900	316	144	78	181	78	25	45	182	5,513
Adopted (b)	1,360	1,837	812	309	143	103	97	53	36	34	110	4,894

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DYs 0 to 3, a five year average for all other DYs. A decay factor of 76% has been assumed after DY9. The aggregate for DY10 onwards is shown.

Estimates from models

Other), Death	ocational Rehal		•	non ra ymem	.
Accident	Estimated outs	_		Weightir	
Year	PPAC	PPCI	Adopted	PPAC	ry PPC
2017	9,429	8,789	9,045	40%	60%
2016	4,867	4,406	4,590	40%	60%
2015	2,861	2,422	2,598	40%	60%
2014	1,546	1,647	1,546	100%	0%
2013	1,261	1,251	1,261	100%	0%
2012	712	901	712	100%	0%
2011	360	648	360	100%	0%
2010	506	475	506	100%	0%
2009	356	394	356	100%	0%
008 & earlier	1,446	1,229	1,446	100%	0%
Total	23,344	22,161	22,420		

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.5 Other goods and services

Claim payments

Financial					Claim payı	nents (a) for	developme	nt year:				
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	869,796	757,593	352,912	141,350	59,290	0	0	0	0	0	225,324	2,406,265
2006	868,463	920,704	217,433	237,431	39,375	30,087	0	0	0	0	170,211	2,483,704
2007	1,073,145	800,665	358,966	160,880	185,147	44,076	46,077	0	0	0	117,270	2,786,226
2008	1,109,871	827,823	275,410	182,574	85,722	183,976	20,278	23,488	0	0	135,697	2,844,839
2009	1,234,445	1,149,196	468,962	165,602	170,877	66,805	103,871	31,142	22,987	0	282,372	3,696,259
2010	1,119,511	1,914,284	577,979	294,112	114,282	56,387	44,834	191,069	30,123	19,473	192,627	4,554,681
2011	1,357,320	1,419,816	1,773,413	370,817	199,111	85,453	59,446	48,905	211,722	15,125	139,784	5,680,912
2012	1,626,314	1,487,961	539,124	1,014,463	182,189	779,617	49,111	41,856	18,135	118,795	164,793	6,022,358
2013	1,568,276	1,464,369	610,500	294,071	630,061	166,282	509,228	22,570	12,114	7,029	163,330	5,447,830
2014	1,723,246	1,401,922	430,785	347,657	168,785	187,116	156,222	-13,833	12,821	19,453	189,095	4,623,269
2015	1,547,585	1,614,034	452,554	202,359	316,201	191,683	154,664	240,214	135,516	14,040	224,136	5,092,986
2016	2,015,841	1,974,264	429,701	233,491	96,505	114,752	134,736	92,629	146,768	89,762	180,885	5,509,334
2017	1,836,917	1,839,855	823,605	192,966	112,460	43,362	88,568	48,689	148,294	56,237	364,931	5,555,884

Note: Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per active claim

Financial		0	ther Goods /	And Service	s PPAC (a) fo	or developm	ent year:			
Year	1	2	3	4	5	6	7	8	9 10	onwards
2011	2,386	9,397	3,588	3,436	2,372	2,233	2,231	12,290	1,380	1,785
2012	2,252	2,668	10,667	3,065	21,860	1,866	1,700	1,124	6,359	1,960
2013	2,099	3,258	2,717	10,688	3,857	17,022	1,166	918	615	1,875
2014	1,876	2,106	3,570	2,648	4,804	4,769	-601	965	1,570	2,297
2015	1,913	1,704	2,233	6,709	4,699	6,320	9,465	5,980	1,408	2,909
2016	2,414	1,608	1,682	1,768	3,239	4,020	3,870	6,664	4,934	2,738
2017	1,829	2,863	1,380	1,390	904	3,694	1,805	7,813	2,963	4,744
Adopted (b)	2,036	2,061	2,245	4,465	3,476	7,358	4,276	4,943	2,572	2,839

Notes:

(a) In 30 June 2017 values

(b) Calculated using a three year weighted average for DY1 and 2, a five year weighted average for all other DYs, adjusted for outliers where necessary.

Average real payment per claim incurred

Financial			Otl	ner Goods A	nd Services	PPCI (a) for	developmer	nt year:				
Year	0	1	2	3	4	5	6	7	8	9 10	onwards	Total
2005	526	490	205	81	34	0	0	0	0	0	46,942	48,279
2006	513	536	135	133	22	17	0	0	0	0	18,178	19,532
2007	685	466	206	99	102	24	25	0	0	0	7,122	8,729
2008	608	501	152	99	50	96	10	12	0	0	72	1,599
2009	673	601	271	87	89	37	52	15	11	0	138	1,973
2010	602	994	288	162	57	28	24	91	14	9	88	2,356
2011	650	717	865	173	103	40	28	24	94	7	62	2,764
2012	729	657	251	456	79	371	21	18	8	49	67	2,706
2013	641	633	260	132	273	69	234	9	5	3	65	2,326
2014	708	570	185	147	75	81	65	-6	5	8	83	1,921
2015	645	647	180	85	131	84	65	97	60	6	90	2,090
2016	832	779	163	88	38	45	56	37	56	38	70	2,202
2017	754	728	312	70	41	17	33	19	57	21	148	2,198
Adopted (b)	742	717	219	104	111	59	89	41	36	15	90	2,223

Notes:

(a) In 30 June 2017 values

(b) Calculated using a three year weighted average for DY0 and 1 and a five year weighted average for all development years, adjusted for outliers where necessary. A decay factor of 74% has been assumed after DY8. The aggregate for DY10 onwards is shown.

Estimates from models

Other Goods A	Other Goods And Services									
	Estimated ou	ıtstanding cl	aims							
Accident	claims at 30	June 2017 (\$	000s) (a)	Weigl	hting					
Year	PPAC	PPCI	Adopted	PPAC	PPCI					
2017	3,938	3,609	3,741	40%	60%					
2016	2,136	1,932	2,013	40%	60%					
2015	1,663	1,441	1,529	40%	60%					
2014	1,134	1,211	1,134	100%	0%					
2013	918	915	918	100%	0%					
2012	562	711	562	100%	0%					
2011	268	484	268	100%	0%					
2010	374	355	374	100%	0%					
2009	241	274	241	100%	0%					
2008 & earlier	1,123	768	1,123	100%	0%					
Total	12,356	11,700	11,903							

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.6 Legals

Claim payments

Financial	Claim payments (a) for development year:											
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	156,955	445,754	720,803	640,892	296,808	0	0	0	0	0	202,841	2,464,053
2006	220,962	521,023	630,304	568,796	234,876	237,764	0	0	0	0	153,227	2,566,952
2007	101,442	499,512	688,390	786,769	365,276	216,776	139,945	0	0	0	105,569	2,903,679
2008	102,809	409,304	632,966	486,280	454,738	118,188	292,904	178,138	0	0	122,157	2,797,484
2009	104,263	553,131	459,063	465,487	473,244	166,346	146,740	72,882	86,698	0	254,196	2,782,050
2010	110,485	572,976	563,716	752,159	321,759	303,526	171,042	341,489	66,246	222,859	173,406	3,599,663
2011	119,748	435,187	911,353	435,657	327,544	296,488	143,894	73,735	73,122	116,630	125,836	3,059,194
2012	189,595	633,460	574,349	768,389	248,978	705,228	75,826	105,448	52,297	46,709	148,349	3,548,628
2013	192,251	592,132	775,905	604,921	1,139,497	588,270	216,238	139,320	58,533	56,996	147,032	4,511,095
2014	197,299	738,137	873,295	638,026	502,451	640,462	282,056	219,827	80,257	8,704	170,227	4,350,741
2015	143,327	907,677	880,787	499,253	660,560	392,914	344,651	349,078	114,010	181,815	201,771	4,675,843
2016	419,883	899,214	1,155,054	1,163,680	445,297	450,979	209,813	497,577	66,402	13,080	162,836	5,483,815
2017	388,426	1,416,503	1,562,119	1,011,523	484,203	420,027	231,269	162,886	34,962	69,404	328,517	6,109,839

Note: Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per claim finalised

Financial			Leg	als PPCF (a) for develop	ment year:					
Year	0	1	2	3	4	5	6	7	8	9 10	onwards
2011	95	729	7,917	8,182	12,303	23,665	30,627	10,463	0	74,473	10,044
2012	144	911	5,411	18,098	12,217	83,052	8,930	8,870	8,798	9,168	9,195
2013	138	823	7,602	11,459	53,962	51,430	30,720	22,620	66,525	16,195	9,830
2014	153	957	6,756	11,261	18,308	42,556	35,400	124,155	18,131	4,916	7,691
2015	107	1,015	5,750	11,719	42,868	33,345	95,059	77,024	20,964	200,587	7,950
2016	351	1,110	7,782	17,117	46,505	33,642	21,912	86,608	17,337	2,732	28,343
2017	316	1,462	10,154	12,817	15,147	19,112	19,292	32,611	11,666	23,158	23,490
Adopted (b)	334	1,298	8,964	14,105	28,449	27,039	31,956	66,739	17,702	31,525	15,032

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DY 0 to 2 and a three year weighted average for all other development years.

Average real payment per claim incurred

Financial				Lega	Is PPCI (a) f	or developn	nent year:					
Year	0	1	2	3	4	5	6	7	8	9 10	onwards	Total
2005	95	288	419	369	173	0	0	0	0	0	42,258	43,601
2006	130	303	392	318	130	133	0	0	0	0	16,364	17,769
2007	65	291	395	482	201	118	77	0	0	0	6,412	8,040
2008	56	247	349	264	264	62	151	93	0	0	65	1,551
2009	57	289	265	245	245	92	73	36	43	0	124	1,469
2010	59	297	281	413	161	150	90	162	31	106	79	1,830
2011	57	220	444	204	169	140	67	37	33	51	56	1,477
2012	85	280	268	345	107	336	33	45	24	19	60	1,602
2013	79	256	331	272	494	245	99	58	24	25	58	1,942
2014	81	300	375	270	225	276	117	100	33	4	75	1,856
2015	60	364	350	210	273	172	145	141	51	74	81	1,920
2016	173	355	439	437	177	177	87	198	25	6	63	2,136
2017	159	560	591	368	174	160	87	65	13	25	133	2,336
Adopted (b)	174	455	513	403	208	169	106	136	29	36	91	2,321

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DYs 0 to 3 and a three year weighted average for all other DYs. A decay factor of 72% has been assumed after DY9. The aggregate for DY10 onwards is shown.

Estimates from models

Legals									
	Estimated out	standing cla	ims						
Accident	ccident claims at 30 June 2017 (\$000s) (a) Weighting								
Year	PPCF	PPCI	Adopted	PPCF	PPCI				
2017	6,645	6,015	6,267	40%	60%				
2016	5,354	4,854	5,054	40%	60%				
2015	4,022	3,534	3,729	40%	60%				
2014	2,389	2,434	2,389	100%	0%				
2013	1,803	1,791	1,803	100%	0%				
2012	951	1,186	951	100%	0%				
2011	498	875	498	100%	0%				
2010	524	460	524	100%	0%				
2009	389	381	389	100%	0%				
2008 & earlier	1,520	940	1,520	100%	0%				
Total	24,096	22,471	23,125						

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.7 Redemptions and non-economic lump sum

Claim payments

Financial					Claim pay	ments (a) fo	r developm	ent year:				
Year	0	1	2	3	4	5	6	7	8	9	10 onwards	Total
2005	209,768	1,230,788	1,612,489	4,026,245	1,420,089	0	0	0	0	0	3,413,797	11,913,176
2006	425,384	1,572,841	1,469,834	1,475,560	944,031	1,104,674	0	0	0	0	2,578,800	9,571,124
2007	131,929	2,142,270	2,382,640	2,541,463	2,728,467	2,072,153	135,271	0	0	0	1,776,717	13,910,910
2008	93,842	1,517,939	2,381,761	4,767,251	2,235,901	1,778,006	1,552,447	480,349	0	0	2,055,898	16,863,394
2009	62,563	2,595,444	3,827,537	3,907,582	3,705,432	2,026,427	1,644,063	938,726	541,239	0	4,278,107	23,527,120
2010	280,698	2,784,712	4,487,364	5,555,307	3,229,869	2,364,519	693,696	3,779,622	462,428	21,995	2,918,413	26,578,623
2011	633,217	3,071,083	6,569,632	5,289,766	4,654,321	4,572,384	718,199	652,827	1,562,328	1,694,999	2,117,814	31,536,570
2012	290,423	3,467,687	5,349,468	4,752,877	3,410,329	2,698,787	1,398,278	1,750,848	614,058	1,338,167	2,496,709	27,567,631
2013	798,093	5,034,020	4,304,159	3,146,178	12,767,423	1,269,418	426,392	371,696	228,690	569,448	2,474,546	31,390,063
2014	461,434	4,280,116	2,801,334	5,751,145	3,368,411	3,402,835	1,404,766	3,636,688	1,404,997	0	2,864,907	29,376,633
2015	522,306	2,974,003	5,341,548	4,826,066	735,591	1,874,791	1,954,630	1,058,632	68,471	866,380	3,395,795	23,618,213
2016	544,312	2,208,806	5,228,454	8,645,902	2,874,708	3,152,006	1,778,661	966,730	3,223,685	1,256,746	2,740,521	32,620,531
2017	833,335	3,337,204	8,102,884	7,446,525	3,939,263	3,561,253	4,274,513	1,859,084	830,709	1,746,804	5,528,921	41,460,495

Note: Data extracted from the WIMS system up to 30 June 2017. DY10+ using the Report 4 payments

Average real payment per claim finalised

Financial			Redemption	ons And Non	-Economic I	Lump Sum F	PPCF (a) for	developmer	nt year:		
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards
2011	503	5,147	57,074	99,345	174,821	364,955	152,866	92,634	0	1,082,320	169,038
2012	220	4,986	50,399	111,946	167,343	317,827	164,671	147,280	103,308	262,653	154,752
2013	574	6,994	42,171	59,596	604,611	110,980	60,576	60,349	259,915	161,800	165,436
2014	358	5,551	21,673	101,505	122,737	226,102	176,309	2,053,942	317,408	0	129,444
2015	389	3,324	34,870	113,284	47,738	159,105	539,110	233,587	12,590	955,832	133,800
2016	455	2,727	35,228	127,174	300,221	235,129	185,755	168,268	841,668	262,498	477,013
2017	679	3,444	52,670	94,357	123,229	162,042	356,576	372,199	277,188	582,867	395,329
Adopted (b)	487	4,338	37,190	99,315	228,707	232,963	232,963	232,963	232,963	232,963	202,129

Notes: (a) In 30 June 2017 values

(b) Calculated using a five year weighted average for DYs 0 to 4 and 10, and a six year tail average for DY 5 to DY 9.

Average real payment per claim incurred

Financial			Redemptio	ns And Non-	Economic L	ump Sum P	PCI (a) for d	evelopment	year:			
Year	0	1	2	3	4	5	6	7	8	9 1	0 onwards	Total
2005	127	796	937	2,316	826	0	0	0	0	0	711,202	716,202
2006	251	915	913	824	522	617	0	0	0	0	275,402	279,445
2007	84	1,246	1,366	1,557	1,502	1,129	75	0	0	0	107,908	114,867
2008	51	918	1,313	2,589	1,297	927	801	251	0	0	1,086	9,234
2009	34	1,356	2,209	2,055	1,921	1,122	818	462	269	0	2,088	12,335
2010	151	1,446	2,233	3,053	1,618	1,167	366	1,792	217	10	1,330	13,384
2011	303	1,552	3,203	2,473	2,403	2,152	333	323	696	747	943	15,128
2012	130	1,532	2,493	2,137	1,470	1,285	607	749	281	549	1,015	12,247
2013	326	2,177	1,835	1,415	5,540	528	196	156	94	251	981	13,500
2014	190	1,740	1,204	2,437	1,506	1,468	581	1,660	585	0	1,255	12,625
2015	218	1,193	2,121	2,026	304	818	823	428	31	352	1,360	9,674
2016	225	872	1,985	3,249	1,142	1,235	735	385	1,232	531	1,055	12,646
2017	342	1,320	3,065	2,710	1,419	1,357	1,605	736	317	640	2,237	15,749
Adopted (b)	259	1,461	2,043	2,388	1,972	1,079	796	656	460	352	1,256	12,724

Notes: (a) In 30 June 2017 values

(b) Calculated using a five year weighted average for all DYs except 10 which uses an eight year weighted average. A decay factor of 78% has been assumed after DY9. The aggregate for DY10 onwards is shown.

Estimates from models

Redemptions A	Redemptions And Non-Economic Lump Sum								
	Estimated out	tstanding cla	nims						
Accident	claims at 30 J	une 2017 (\$0	000s) (a)	Weightii	ng				
Year	PPCF	PPCI	Adopted	PPCF	PPCI				
2017	36,979	32,545	34,319	40%	60%				
2016	33,365	29,586	31,097	40%	60%				
2015	28,949	25,097	26,638	40%	60%				
2014	17,919	19,157	17,919	100%	0%				
2013	13,560	13,617	13,560	100%	0%				
2012	7,006	9,862	7,006	100%	0%				
2011	3,845	7,743	3,845	100%	0%				
2010	5,527	5,582	5,527	100%	0%				
2009	4,043	4,499	4,043	100%	0%				
2008 & earlier	17,950	15,512	17,950	100%	0%				
Total	169,143	163,200	161,904						

Notes: (a) From models described above, in 30 June 2017 values and includes superimposed inflation but excludes the 2015 legislative amendments

C3.8 Large claims

Large claims (\$00	0s)		
	Case estimates	Development	Current values
	(a)	factor (b)	(c)
2017	2,017	0.00	0
2016	5,002	1.00	5,002
2015	13,061	1.00	13,061
2014	0	0.00	0
2013	0	0.00	0
2012	1,906	0.00	0
2011	1,188	0.00	0
2010	0	0.00	0
2009	4,856	1.00	4,856
2008 & earlier	24,013	1.00	24,013
Total	52,042		46,932

Notes: (a) Provided by the insurers,

(b) We have adopted a development factor of 1 where we consider that the valuation by payment types include insufficient allowance for the large claims. Where the valuation by payment type has sufficient allowance we have adopted a development factor of 0

 $(c) = (a) \times (b)$

C 4 Adopted estimates of outstanding claims

C4.1 Gross central estimates from models in 30 June 2017 values, excluding allowance for Act changes

Es	stimates of outs Weekly	tanding claims	at 30 June 2017 (Allied Health, Vocational Rehabilitation, Non- Compensation	000s) (a) (b) Other Goods		Redemptions And Non- Economic	Allowance for active large	
Accident year	Benefits	Hospital	Payments	And Services	Legals	Lump Sum	claims	Total
2017	28,503	8,697	9,045	3,741	6,267	34,319	0	90,571
2016	16,612	3,580	4,590	2,013	5,054	31,097	5,002	67,949
2015	11,135	2,156	2,598	1,529	3,729	26,638	13,061	60,847
2014	6,961	1,521	1,546	1,134	2,389	17,919	0	31,469
2013	5,649	1,332	1,261	918	1,803	13,560	0	24,524
2012	3,369	787	712	562	951	7,006	0	13,387
2011	1,990	441	360	268	498	3,845	0	7,401
2010	2,878	641	506	374	524	5,527	0	10,450
2009	1,977	447	356	241	389	4,043	4,856	12,307
2008 & earlier	8,215	2,091	1,446	1,123	1,520	17,950	24,013	56,360
Total	87,290	21,692	22,420	11,903	23,125	161,904	46,932	375,267

Notes: (a) From models described in appendix C3, excluding allowance for the 2015 legislative amendments

(b) In 30 June 2017 values and includes superimposed inflation

C4.2 Gross central estimates from models in 30 June 2017 values, including allowance for Act changes

	Estimates of outs	tanding claims a	at 30 June 2017 (Allied Health, Vocational Rehabilitation, Non-		Redemptions And Non-	Allowance for		
A soldout	Weekly	Medical And	Compensation	Other Goods	Laurela	Economic	active large	Total
Accident year	Benefits	Hospital	Payments	And Services	Legals	Lump Sum	claims	Total
2017	26,415	8,218	9,126	3,376	6,267	34,319	0	87,721
2016	14,487	3,102	4,674	1,623	5,054	31,097	5,002	65,039
2015	11,135	2,156	2,598	1,529	3,729	26,638	13,061	60,847
2014	6,961	1,521	1,546	1,134	2,389	17,919	0	31,469
2013	5,649	1,332	1,261	918	1,803	13,560	0	24,524
2012	3,369	787	712	562	951	7,006	0	13,387
2011	1,990	441	360	268	498	3,845	0	7,401
2010	2,878	641	506	374	524	5,527	0	10,450
2009	1,977	447	356	241	389	4,043	4,856	12,307
2008 & earlier	8,215	2,091	1,446	1,123	1,520	17,950	24,013	56,360
Total	83,077	20,736	22,584	11,148	23,125	161,904	46,932	369,506

Notes: (a) From models described in appendix C3, including allowance for the 2015 legislative amendments

(b) In 30 June 2017 values and includes superimposed inflation

C4.3 Average claim sizes

Accident year	verage claim siz Weekly Benefits	te at 30 June 20 Medical And Hospital	Allied Health, Vocational Rehabilitation, Non- Compensation Payments	Other Goods And Services	Legals	Redemptions And Non- Economic Lump Sum	Allowance for active large claims	Adopted
2017	14,851	6,239	5,203	2,139	2,730	14,420	0	45,582
2016	14,565	6,011	5,188	2,201	2,731	13,835	2,501	46,507
2015	14,095	6,042	4,491	2,314	2,415	14,219	6,531	48,510
2014	13,254	5,045	4,583	2,001	2,121	12,594	0	39,597
2013	14,012	4,698	4,205	1,849	1,989	13,734	0	40,488
2012	11,852	4,569	3,868	1,901	1,625	10,703	0	34,518
2011	11,034	4,914	3,250	2,025	1,662	10,695	0	33,580
2010	13,939	4,868	4,261	2,085	1,574	11,593	0	38,321
2009	11,281	4,426	3,817	3,592	2,420	16,898	1,214	44,288

Note: (a) In 30 June 2017 values, from results in appendix C4.2, includes superimposed inflation and 2015 legislation amendments

C4.4 Relationship to case estimates

Ra	tio of outstandi	ing to case esti	mates at 30 June Allied Health, Vocational Rehabilitation, Non-	2017 (\$) (a)		Redemptions And Non-	Allowance for	
Accident year	Weekly Benefits	Medical And Hospital	Compensation Payments	Other Goods And Services	Legals	Economic Lump Sum	active large claims	Adopted
2017	57%	18%	20%	7%	13%	74%	0%	188%
2016	44%	9%	14%	5%	15%	94%	15%	196%
2015	34%	6%	8%	5%	11%	80%	39%	183%
2014	58%	13%	13%	9%	20%	148%	0%	260%
2013	45%	11%	10%	7%	14%	108%	0%	196%
2012	45%	11%	10%	8%	13%	94%	0%	179%
2011	49%	11%	9%	7%	12%	95%	0%	183%
2010	52%	11%	9%	7%	9%	99%	0%	187%
2009	23%	5%	4%	3%	5%	48%	57%	145%
2008 & earlier	20%	5%	4%	3%	4%	43%	58%	136%

Note: (a) In 30 June 2017 values, from results in appendix C4.2, includes superimposed inflation and 2015 legislation amendments

C4.5 Summary of gross adopted estimates in 30 June 2017 values

Accident year	Estimate of outstanding claims (a)	Estimate of outstanding claims (b)	Average claim size (b)	Ratio of outstanding to case estimates (b)
	\$000s	\$000s	\$	
2017	90,571	87,721	45,582	188%
2016	67,949	65,039	46,507	196%
2015	60,847	60,847	48,510	183%
2014	31,469	31,469	39,597	260%
2013	24,524	24,524	40,488	196%
2012	13,387	13,387	34,518	179%
2011	7,401	7,401	33,580	183%
2010	10,450	10,450	38,321	187%
2009	12,307	12,307	44,288	145%
2008 & earlier	56,360	56,360		136%
Total	375,267	369,506		181%

Notes: (a) in 30 June 2017 values, including superimposed inflation but excluding the 2015 legislative amendments

(b) including the 2015 legislative amendments

C4.6 Gross adopted estimates excluding expenses

	Gross estimates at 30 June 2017 excluding expenses (\$000s) Accident										
year ending	30 June 2017	Inflated	Infl/disc								
30 June	values	values	values								
2017	87,721	95,523	88,477								
2016	65,039	71,679	65,664								
2015	60,847	67,735	61,503								
2014	31,469	34,986	31,737								
2013	24,524	27,481	24,741								
2012	13,387	15,184	13,516								
2011	7,401	8,464	7,476								
2010	10,450	11,893	10,554								
2009	12,307	13,714	12,443								
2008 & earlier	56,360	62,528	56,973								
Total	369,506	409,188	373,083								

Note: Includes superimposed inflation and 2015 legislative amendments

C4.7 Net outstanding claims provision

Estimates at 30	June 2017 (\$000s)						
	Gross o/s	Reinsurance	Net o/s	Claims handling	Net central	Risk	Net
	liability (a)	recoveries (b)	liability (c)	expenses (d)	estimate (e)	margin (f)	Provision (g)
Total	373.083	29.219	343.864	20.632	364.496	53.001	417.497

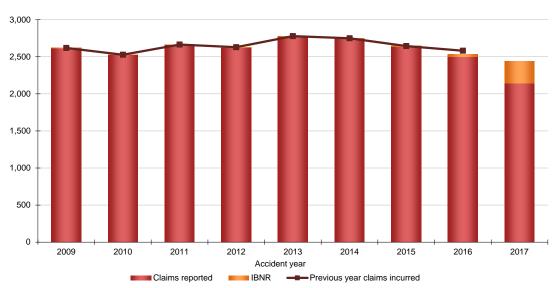
Notes:	(a)	from table above
	(b)	allows for reinsurance recoveries on large claims which are expected to exceed the reinsurance retention
	(c)	= (a) - (b)
	(d)	= (c) x 6%
	(e)	= (c) + (d)
	(f)	= (e) x 14.5%
	(g)	= (e) + (f)

Appendix D Insurer claims statistics

D 1 Number of claims incurred

Decreasing trend from 2013 peak to 2017

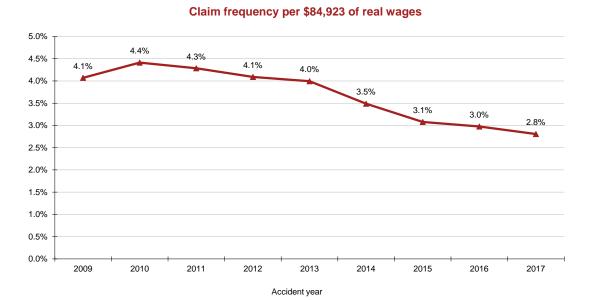




The main points to highlight from this chart are:

- Since 2009 the number of claims incurred has varied from one year to the next, but has generally exhibited stability
- For the 2009 to 2012 accident years, the number of claims incurred was between 2,500 and 2,700
- There was a spike in the number of claims incurred for the 2013 accident year to just under 2,800
- From the 2013 to 2016 accident years, there has been a decreasing trend in the number of claims incurred
- Incurred claims estimated for the 2017 accident year are 2,438, which is 93 (3.7%) fewer than 2016
- The number of claims are similar to estimated at the previous valuation.

Declining claim frequency due to significant increases in wages up to 2015 and more recently reducing number of claims incurred



The claim frequency is calculated as:

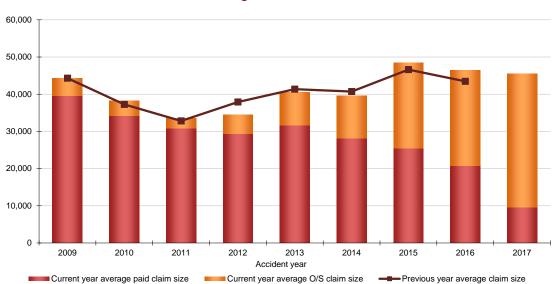
the number of claims incurred

estimated number of full time equivalent employees

To estimate the number of employees we have used the wages provided, inflated this to 2017 values and divided by \$84,923 (the full time average weekly earnings for the NT from the ABS catalogue 6302). We have not used the number of employees provided in the ANZSIC data as these are not full time equivalent.

D 2 Gross average claim size

Average claim size for 2017 is estimated to be below 2015 and 2016 but higher than other years



Gross average claim size in 30 June 2017 values

Since 2009 the gross average claim size (in 2017 values):

- Exhibited volatility due in part to large claims, which have the largest impact on 2009 and 2015
- Dropped to a low of around \$33,600 in 2011, caused by lower than average redemption payments
- Exhibited an increasing trend from around \$33,600 in 2011 to around \$45,600 in 2017

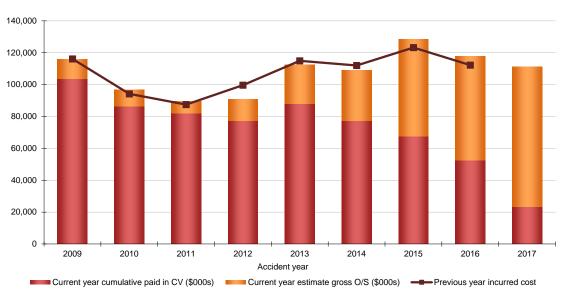
The uncertainty about the future development means that the ultimate level and our estimates may differ from those projected for recent accident years. This is especially true for the 2017 accident year, where a high proportion (79%) of the average claim size relates to uncertain future claims development.

Compared to the previous valuation, the gross average claim size is similar for most years with the exception of 2012, where estimates decreased. This was due to a decrease in the size of a large claim. Conversely, 2016 increased due to higher development of a large claim.

Appendix E contains the average claim size split by payment type. The mix of payment types across the accident years has remained fairly stable. Redemptions and non-economic lump sums are the largest payment type, closely followed by weekly benefits. These two payment types account for two thirds of total incurred costs.

D3 Gross incurred cost

2017 incurred cost is \$111.1 million, which is lower than 2015 and 2016 but similar to 2013 and 2014



Gross incurred cost in 30 June 2017 values

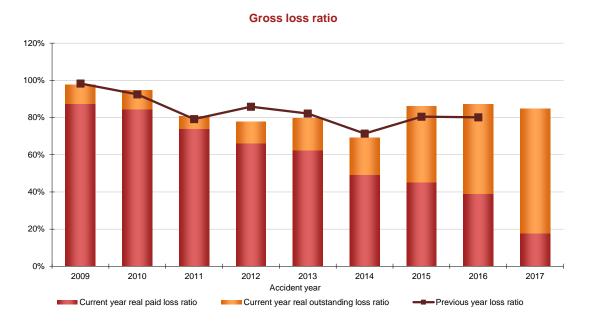
The gross incurred cost in 30 June 2017 values follows a similar pattern to the average claim size.

Over the period shown in the graph, the proportion outstanding increases from 8% of the total incurred cost in 2011 to 79% of the total incurred cost for 2017.

As for the average claim size graph, the changes since the previous valuation are mostly due to higher or lower claims payments and development than expected over the year.

D4 Gross loss ratios

Loss ratio for 2017 estimated at 85%, which is lower than 2016



The gross loss ratios are calculated for each accident year using the following formula:

(Past claim payments to 30 June 2017+ estimated outstanding liability at 30 June 2017)

Gross developed earned premium

The past claim payments, estimated outstanding liability and gross developed earned premium are all in 30 June 2017 values i.e. current values, and the estimated outstanding liability includes allowance for future superimposed inflation.

We have used the developed earned premium for 2011 onwards. For 2010 and prior we have continue to use premium processed as earned premium is not available.

These ratios are not a proper measure of profitability, as they do not allow for investment returns or expenses. Nevertheless, as a crude measure, they do provide an indication of trends in the experience.

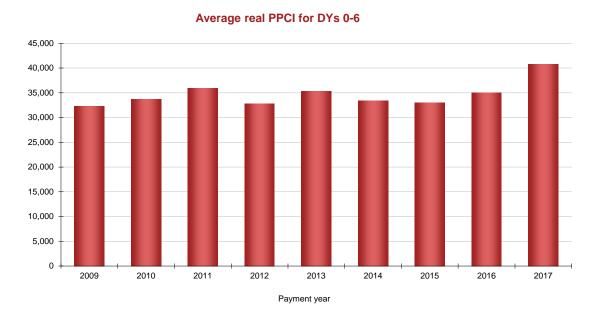
The chart shows:

- There was a decreasing trend in the loss ratio from the high of 98% in 2009 to the low of 69% in 2014 due to premium and wages growth exceeding claims cost increases
- The loss ratio has stabilised in recent years at around 80%
- The 2012 loss ratio is lower than last year due to a decrease in the incurred cost.
- The 2015 and 2016 loss ratio are higher than last year due to the incurred cost increasing and the earned premium decreasing.

D 5 Payment per claim incurred

By payment year

2017 payment year is significantly higher compared to all prior years



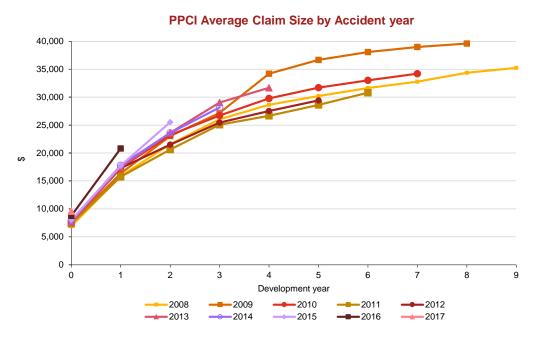
There was an increasing trend from \$32,300 in 2009 to \$36,000 in 2011. However, it was relatively stable between \$32,800 and \$35,000, up until 2016.

The 2017 payment year is \$40,700, which is \$5,700 (16.3%) higher than 2016.

PwC Insurer claims statistics

By accident year

Reducing evidence of superimposed inflation for recent accident years



The chart above shows cumulative PPCI by accident year. This is calculated as:

sum of claim payments by development year made to date (in 30 June 2017 values)

number of claims incurred to date

As the values in the chart are all in current values, any differences are the result of a change in the real cost of each claim. This is also referred to as superimposed inflation. The chart is based entirely on actual experience, and there are no future projections included in this graph.

The experience by accident year has been variable, and there is no clear evidence of superimposed inflation over recent years.

Appendix E Insurer financial year claims experience

E1 Aggregate claims experience during 2016/17

E1.1 Summary of overall claim experience over 2016/17

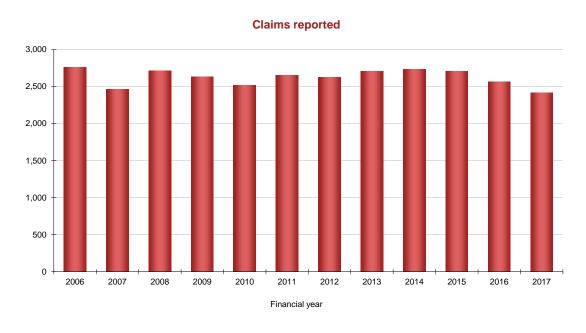
The overall claims experience over 2016/17 is generally neutral compared to 2015/16.

- A decrease (5.7%) in the number of claims reported
- An increase (19.1%) in the amount of claim payments
- An decrease (6.1%) in the number of active claims at the end of the year
- A faster finalisation rate (60.8% compared to 63.0%)
- An increase (1.5%) in case estimates.

The experience for each of these items is described in more detail below.

E1.2 Claim reports

Claim reports have reduced by 5.7% in 2017

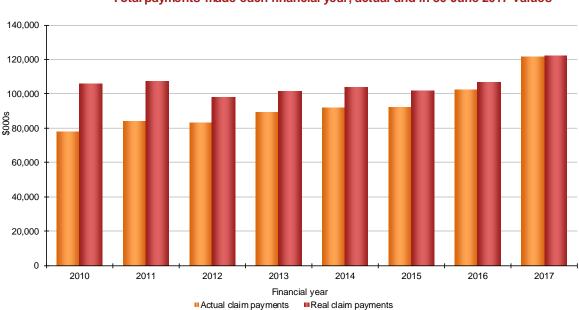


The number of claims reported in each financial year has been relatively stable since 2008, with between 2,500 and 2,750 reported each year.

In 2017 there were 2,417 claims reported, which was 147 (5.7%) less than 2016.

E1.3 Claim payments

Real payments are significantly higher than prior year in 2017 at \$122 million



Total payments made each financial year, actual and in 30 June 2017 values

We have only included payments from the 2010 financial year onwards as payments in our data prior to this have less payment years included so would give a misleading increasing trend. The red bars of payments have been adjusted for wage inflation to allow for comparison between the financial years.

Claim payments in 30 June 2017 values have varied between \$98 million and \$122 million over the period shown.

Total actual payments in 2016/17 were \$121.9 million, which is \$19.6 million (19.1%) higher than actual payments 2015/16. In real values, this is an increase of \$15.1 million (14.2%).

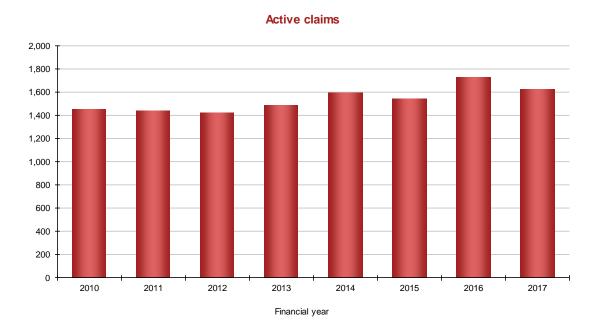
A breakdown of the change in payments by payment group is presented in the table below.

Payment group	Payments in 2016/17 (\$000s)	Payments in 2015/16 (\$000s)	Difference	Difference (%)
Weekly benefits	38,591	33,693	4,898	14.5%
Medical and hospital	16,136	14,289	1,846	12.9%
Allied health, vocational rehabilitation, non-compensation payments (other), death	14,044	10,749	3,295	30.7%
Other goods and services	5,556	5,509	47	0.8%
Legals	6,110	5,484	626	11.4%
Redemptions and non-economic lump sum	41,460	32,621	8,840	27.1%
Total	121,897	102,345	19,552	19.1%

The increase in actual payments is due to all payment types increasing but is largely driven by redemptions and non-economic lump sum, which increased by \$8.8 million (27.1%).

E1.4 Active claims

Active claim numbers decreased from 1,730 in 2016 to 1,624 in 2017 (6%)

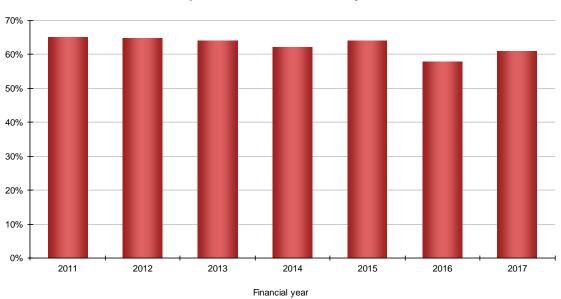


We have only received data on the number of active claims at the end of each year since 2010.

From 2010 to 2012, the number of active claims at the end of each financial year was stable at just over 1,400 active claims. From 2012 to 2016, there has been a slight increasing trend. From 2016 to 2017, there has been a decrease from 1,730 to 1,624, a 6% decrease due to a faster finalisation in the financial year.

E1.5 Proportion of claims finalised

2017 finalisation rate was 61%, which is higher than 58% in 2016 but still below the range of prior years



Proportion of claims finalised in year

Probabilities of claim finalisation is defined as:

Number of claims finalised in year

(Number of outstanding at beginning of the year plus number reported during the year)

Since we only received data on active claims from the 2010 financial year, we can only present the finalisation rate from 2011 onwards.

From 2011 to 2015, the finalisation rate was stable between 62% and 65%. In 2016, there was a significant decrease in finalisation rate to 58%. In 2017, the finalisation rate is 60.8%, which is slightly higher than 2016.

E1.6 Claims incurred in 2016/17

There were 2,141 claims reported to 30 June 2017 for the 2016/17 accident year and the projected number of incurred claims is 2,438. This is 3.7% lower than the 2,530 projected incurred for the 2015/16 accident year. This decrease is despite the increase in wages.

The expected number of open claims for the 2016/17 accident year at 30 June 2017 is $2,141 \times (1-0.6132) = 828$. The actual number of open claims for the 2016/17 accident year at 30 June 2017 is 912, which is 10.1% higher than expected.

The 30 June 2016 projection basis lead to an expected $8,108 \times (1.035 \, ^\circ 0.5 \times 1.016) = \$8,383$ to be paid on each of the 2016/17 accident year claims in the year of claim. The actual amount paid per claim was \$9,598 i.e. $\$1,215 \, (14.5\%)$ more in real values.

85

The 2016/17 accident year shows unfavourable experience with higher than expected open claims and payments compared to 2015/16, but favourable experience in relation to a lower number of claims incurred.

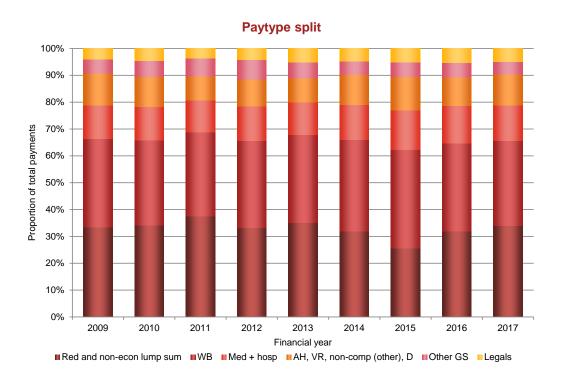
For details of the claims experience over 2016/17 for claims incurred up to 30 June 2016 see appendix C2.

E 2 Analysis by payment group

The purpose of this section is to investigate trends in the composition of incurred costs by benefit type. We use higher level groups to explore the relative movement of periodic and lump sum benefits. We have performed this analysis based on the claim payment data and our outstanding claims valuation results.

E2.1 Distribution by financial year

The following chart shows how the actual payments made in a financial year are split between the payment groups over the past nine years.



Payment type split	2009	2010	2011	2012	2013	2014	2015	2016	2017
Legals	4%	5%	4%	4%	5%	5%	5%	5%	5%
Other GS	5%	6%	7%	7%	6%	5%	6%	5%	5%
AH, VR, non-comp (other), D	12%	11%	9%	10%	9%	11%	12%	11%	12%
Med + hosp	13%	13%	12%	13%	12%	13%	15%	14%	13%
WB	33%	32%	31%	32%	33%	34%	37%	33%	32%
Red and non-econ lump sum	33%	34%	38%	33%	35%	32%	26%	32%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Over the last nine years, the split of payments by type have been variable, but there has been no maintained increase or decrease in any group. The key trends have been:

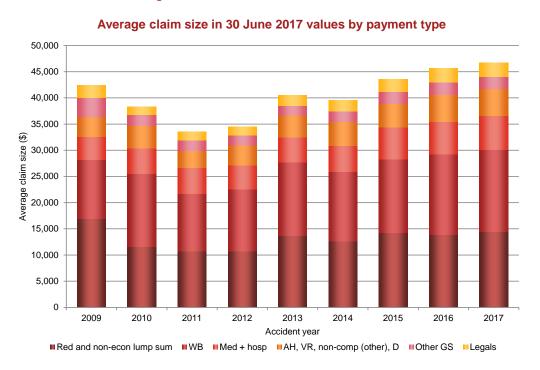
 Redemptions had a notable increase between 2009 and 2011 from 33% to 38%. It has since ranged from 32% to 35%, except for the low in 2015 of 26%

- Any increases or decreases in redemptions payments have been matched by decreases or increases in
 weekly benefits payments, such that in total the proportion of total payments which are weekly benefits or
 redemptions has been relatively stable between 64% and 66%, except 2015 which is lower at 63% and
 2011 at 69%
- The proportion of payments attributable to the other payment types has been stable over the last nine
 years.

This sort of analysis is important as it gives an indication of the cost drivers for the scheme and how these are changing, whether there is more use of periodic type payments, such as *weekly benefits*, or more lump sum payments, such as *redemptions and non-economic lump sum*. The dominance of one payment type over another will influence other cost drivers such as the total aggregate superimposed inflation.

E2.2 Gross average claim size by payment group

Mix by payment type is relatively stable with weekly benefits and redemptions and non-economic lump sum combined around two thirds of the total



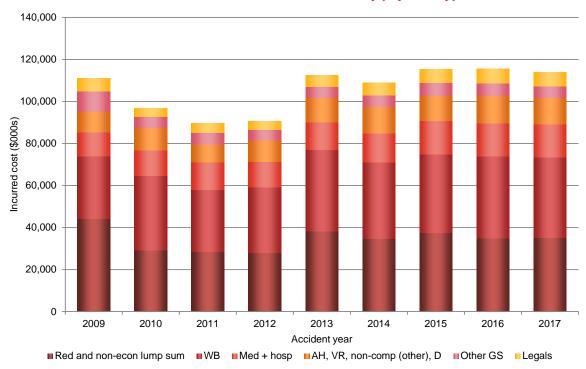
Average claim size (exclude large 2009 2010 2011 2012 2013 2014 2015 2016 2017 claims) WR 11,281 13,939 11,034 11,852 14.012 13,254 14,095 15,405 15.708 4,868 4,914 4,569 4,698 5,045 6,042 6,200 6,435 Med + hosp 4.426 AH, VR, non-comp (other), D 3,868 5,170 3.817 4.261 3.250 4.205 4.583 4.491 5.155 Other GS 3,592 2,085 2,025 1,901 1,849 2,001 2,314 2,356 2.289 Legals 2,420 1,574 1,662 1,625 1,989 2,121 2,415 2,731 2,730 13,734 Red and non-econ lump sum 16.898 11.593 10.695 10.703 12.594 14.219 13.835 14.420 Total 42,434 38,321 33,580 34,518 40,488 39,597 43,575 45,681 46,751

The mix of payment types across the accident years has remained fairly stable. Redemptions and non-economic lump sums and weekly benefits are the two largest payment types. These two groups combined account for two thirds of total payments.

E2.3 Gross incurred cost by payment group

Stable distribution by payment type across accident years

Incurred cost in 30 June 2017 values by payment type



Incurred cost in current values									
(exclude explicit large claims)									
(\$000s)	2009	2010	2011	2012	2013	2014	2015	2016	2017
Legals	6,339	3,977	4,431	4,270	5,527	5,832	6,390	6,910	6,656
Other GS	9,408	5,270	5,397	4,995	5,140	5,503	6,123	5,960	5,580
AH, VR, non-comp (other), D	9,999	10,770	8,663	10,164	11,686	12,606	11,884	13,044	12,603
Med + hosp	11,591	12,304	13,098	12,006	13,056	13,876	15,991	15,688	15,686
WB	29,547	35,227	29,413	31,144	38,941	36,451	37,302	38,980	38,292
Red and non-econ lump sum	44,258	29,298	28,508	28,125	38,167	34,636	37,632	35,006	35,153
Total	111,142	96,847	89,510	90,705	112,517	108,904	115,323	115,588	113,970

Percentage of incurred cost by									
paytype	2009	2010	2011	2012	2013	2014	2015	2016	2017
Legals	6%	4%	5%	5%	5%	5%	6%	6%	6%
Other GS	8%	5%	6%	6%	5%	5%	5%	5%	5%
AH, VR, non-comp (other), D	9%	11%	10%	11%	10%	12%	10%	11%	11%
Med + hosp	10%	13%	15%	13%	12%	13%	14%	14%	14%
WB	27%	36%	33%	34%	35%	33%	32%	34%	34%
Red and non-econ lump sum	40%	30%	32%	31%	34%	32%	33%	30%	31%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

The table above shows that the proportion of the incurred cost attributable to each payment group has been variable between accident years, though with more stability between the accident years than the percentage by financial year in E2.1. *Redemptions and non-economic lump sum* payment group in particular is more stable as a percentage of the incurred cost, except for the high 40% for the 2009 accident year.

Appendix F Self-insurer outstanding claims valuation

F1 Data used in the valuation

F1.1 Numbers of claims reported

		NT Wo	rkSafe self	-insurers -	- Incremen	tal Claims	Reported				10	
Year to 30 June	0	1	2	3	4	5	6	7	8	9 on	wards	Total
2009	110	8	0	0	0	0	0	0	0	0	0	118
2010	139	6	0	1	0	0	0	0	0	0	0	146
2011	180	10	0	1	0	0	0	0	0	0	0	191
2012	153	23	1	1	0	0	0	0	0	0	0	178
2013	121	22	2	1	0	0	0	0	0	0	0	146
2014	114	26	0	0	0	0	0	0	0	0	0	140
2015	114	12	1	0	0	0	0	0	0	0	0	127
2016	104	19	0	1	0	0	1	0	0	0	0	125
2017	76	17	0	0	0	0	1	0	0	0	0	94

Note: Data extracted from the WIMS system up to 30 June 2017

F1.2 Cumulative claims reported

		NT W	orkSafe se	elf-insurers	s - Cumula	tive Claim	s Reported				10	
Year to 30 June	0	1	2	3	4	5	6	7	8	9 o	nwards	Total
2009	110	114	122	123	117	92	102	89	23	0	0	892
2010	139	116	114	123	123	117	92	102	89	23	0	1,038
2011	180	149	116	115	123	123	117	92	102	89	23	1,229
2012	153	203	150	117	115	123	123	117	92	102	112	1,407
2013	121	175	205	151	117	115	123	123	117	92	214	1,553
2014	114	147	175	205	151	117	115	123	123	117	306	1,693
2015	114	126	148	175	205	151	117	115	123	123	423	1,820
2016	104	133	126	149	175	205	152	117	115	123	546	1,945
2017	76	121	133	126	149	175	206	152	117	115	669	2,039

Note: Cumulative claim reports from table above.

F1.3 Active claims

	NT WorkSafe self-insurers - Active Claims											
Year to 30 June	0	1	2	3	4	5	6	7	8	9	10	Total
2016	43	15	3	0	1	2	0	0	0	0	0	64
2017	33	11	4	3	0	0	2	0	0	0	0	53

Note: From the self-insurers' reports as at 30 June 2017.

F1.4 Claim payments

	N	Γ WorkSafe	self-insur	ers - Incre	mental Ac	tual Claim	Payments	(\$000s)			10	
Year to 30 June	0	1	2	3	4	5	6	7	8	9 or	wards	Total
2009	383	437	222	106	147	0	0	0	0	0	0	1,297
2010	358	256	138	170	92	470	0	1	1	0	0	1,485
2011	401	740	496	236	318	0	349	0	7	5	15	2,566
2012	646	754	80	189	205	0	0	0	0	82	0	1,955
2013	379	1,145	184	72	8	170	0	16	0	0	195	2,169
2014	334	1,029	565	99	0	61	24	0	2	0	0	2,115
2015	425	430	622	574	86	0	5	189	0	12	0	2,343
2016	706	464	178	728	233	3	2	5	0	0	0	2,320
2017	555	544	474	77	0	0	4	3	4	0	0	1,662

Note: Data extracted from the WIMS system up to 30 June 2017.

F1.5 Case estimates

	NT WorkSafe self-insurers - Case Estimates Outstanding (\$000s)											
Year to 30 June	0	1	2	3	4	5	6	7	8	9	10	Total
2013	333	406	373	4	40	199	14	0	0	0	0	1,369
2014	349	525	461	45	4	20	192	0	0	0	0	1,596
2015	340	216	482	239	50	4	58	0	0	0	0	1,389
2016	565	274	79	3	15	40	33	0	0	0	0	1,009
2017	540	319	143	85	6	0	14	0	0	0	0	1,108

Note: From the self-insurers' reports as at 30 June 2017 and prior years.

F 2 Actual and projected claims experience during 2016/17

F2.1 Numbers of claims reported

Accident year								
ended 30 June	Actual	Projected (a)	projected %					
2009	0	0	0.0%					
2010	0	0	0.0%					
2011	1	0	0.0%					
2012	0	0	0.0%					
2013	0	0	0.0%					
2014	0	0	0.0%					
2015	0	0	0.0%					
2016	17	16	103.9%					
Total	18.0	16.5	109.3%					

Note: (a) From previous scheme report dated 16 June 2017.

F2.2 Claim payments

Accident year ended 30 June	Actual payments (\$000s)	Expected Payments (\$000s) (a)	Actual / expected %
2009	4	3	134.5%
2010	3	9	29.1%
	_		
2011	4	12	33.2%
2012	0	15	0.0%
2013	0	12	0.0%
2014	77	124	61.8%
2015	474	251	188.8%
2016	544	643	84.6%
Total	1,107	1,070	103.4%

Note: (a) From previous scheme report dated 16 June 2017.

F 3 Analysis and projection models

F3.1 Payment per claim incurred model

Claim notification pattern

Financial year			10							
ending 30 June	1	2	3	4	5	6	7	8	9 o	nwards
2009	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
2010	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
2011	1.07	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2012	1.13	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2013	1.14	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2014	1.21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2015	1.11	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2016	1.17	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00
2017	1.16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adopted (b)	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Notes: (a) Using cumulative claim report numbers from data

(b) Calculated using a two year weighted average for development year (DY) 1, and a five year weighted average for DYs 2 to 9. It is assumed there is no more development for DY10+

Numbers of claims incurred

	Number of claims						
Accident year ending 30 June	Reported to 30 Jun 2017 (a)	IBNR at 30 Jun 2017 (b)	Incurred (c)				
2009	117	0	117				
2010	152	0	152				
2011	206	0	206				
2012	175	0	175				
2013	149	0	149				
2014	126	0	126				
2015	133	1	134				
2016	121	1	122				
2017	76	13	89				

Notes: (a) from number reported in appendix F1.1

(b) from pattern in chain ladder ratio table above

(c) = (a) + (b)

Average real payment per claim incurred

Financial year		Average R	eal Payme	nt Per Cla	im Incurre	d (a) for d	evelopmer	t year:			10	
ending 30 June	0	1	2	3	4	5	6	7	8	9	onwards	Total
2009	4,674	5,428	2,581	1,233	1,799	1	0	0	8	0	0	15,725
2010	3,200	2,971	1,632	1,874	1,019	5,466	0	16	10	0	0	16,189
2011	2,486	6,219	5,415	2,626	3,299	0	3,807	0	83	69	807	24,810
2012	4,335	4,308	620	1,903	2,099	0	0	0	0	944	0	14,209
2013	2,879	7,418	1,014	538	74	1,684	0	152	0	0	2,178	15,936
2014	2,985	7,779	3,636	545	0	592	236	0	21	0	0	15,795
2015	3,508	3,752	4,594	3,607	458	0	49	1,809	0	111	0	17,889
2016	6,042	3,621	1,473	5,091	1,389	16	13	42	0	0	0	17,687
2017	6,218	4,463	3,552	609	0	0	20	17	36	0	0	14,914
Adopted (b)	6,117	5,611	2,775	2,057	433	536	403	301	221	168	627	19,249

Notes: (a) In 30 June 2017 values

(b) Calculated using a two year weighted average for DYs 0, a five year weighted average for DY1 to 4, and a proportion of the insurers' average real PPCI, weighted by a factor of 27% to account for the size of the self-insurers compared to the insurers average claim size. A decay factor of 79% is applied from DY10 onwards.

F 4 Adopted estimates of outstanding claims

F4.1 Gross central estimates from models in current values

Accident year	Estimates of Outstanding Claims (\$000s) at 30 June 2017 (a)(b)							
ending 30 June	PPCI	Case estimates						
2009 & earlier	393	0						
2010	167	0						
2011	293	14						
2012	326	0						
2013	363	6						
2014	368	85						
2015	674	143						
2016	969	319						
2017	1,229	540						
Total	4,782	1,108						

Notes: (a) From models described in appendix F3

(b) In 30 June 2017 values and includes superimposed inflation and excluding 2015 legislative changes

F4.2 Average claim sizes

Accident year	Average Claim Size (\$000s) at 30 June 2017 (a)(b)							
ending 30 June	PPCI	Case estimates						
2009	17	16						
2010	12	11						
2011	10	9						
2012	22	20						
2013	23	20						
2014	12	9						
2015	16	12						
2016	18	13						
2017	20	12						

Note: (a) In 30 June 2017 values, from results in appendix F4.1, includes superimposed inflation and excluding 2015 legislative changes

F4.3 Adopted estimates in 30 June 2017 values

Accident year ending 30 June	Estimate of o/s claims (\$000s)(a)(b)	Estimate of o/s claims (\$000s)(b)(c)	Average claim size (\$000s)(b)(c)	Ratio to case estimates (b)(c)
0000 0	40	40		00/
2009 & earlier	10	10		0%
2010	17	17	11	0%
2011	42	42	9	299%
2012	33	33	21	0%
2013	42	42	21	695%
2014	142	142	10	167%
2015	356	356	13	249%
2016	839	788	17	247%
2017	1,229	1,186	19	219%
Total	2,708	2,614		236%

Notes: (a) in 30 June 2017 values, including superimposed inflation and excluding 2015 legislative changes

⁽c) The adopted model is a composite weighted average of the statistical models. The weights attached to the models reflect the extent to which they are considered to appropriately project the experience of each accident year. We have used the PPCI method, except where the result is less than the case estimates.

Accident year	Weights Adopted For Estimates (a)(b) Method		
ending 30 June	PPCI	Case estimates	Total
2009 & earlier	0.10	0.90	1.00
2010	0.10	0.90	1.00
2011	0.10	0.90	1.00
2012	0.10	0.90	1.00
2013	0.10	0.90	1.00
2014	0.20	0.80	1.00
2015	0.40	0.60	1.00
2016	0.80	0.20	1.00
2017	1.00	0.00	1.00

⁽b) in 30 June 2017 values, including superimposed inflation and including 2015 legislative changes

F4.4 Gross adopted estimates including expenses

NT WorkSafe self-in Estimates (\$000s) a					
Accident year	30 June 2017 values	Inflated values	Inflated & discntd	Case estimates	Ratio %
ending 30 June	(a)	(b)	values (b)	(c)	(d)
2009 & earlier	10	12	11	0	_
2010	17	20	18	0	-
2011	42	51	46	14	299%
2012	33	39	35	0	-
2013	42	51	45	6	695%
2014	142	175	155	85	167%
2015	356	426	386	143	249%
2016	788	918	853	319	247%
2017	1,186	1,357	1,281	540	219%
Total	2,614	3,048	2,830	1,108	236%

Note:

- (a) In 30 June 2017 values, includes superimposed inflation
- (b) includes 7% claims handling expenses, inflation and discounting assumptions in Appendix B 1
- (c) as at 30 June 2017 as provided by the self-insurers
- (d) = (a) / (c)

F4.5 Net outstanding claims provision

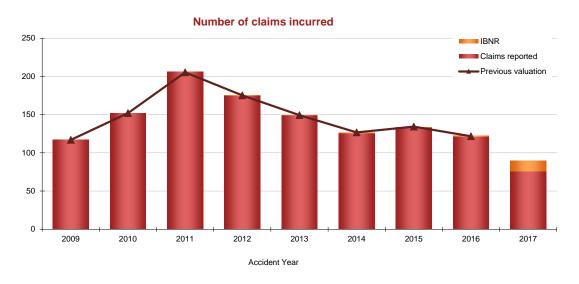
Estimates at 30 Jur	ne 2017 (\$000s)					
Gross o/s	Reinsurance	Net o/s	Claims handling	Net central	Risk	Net
liability (a)	recoveries (b)	liability (c)	expenses (d)	estimate (e)	margin (f)	Provision (g)
2,644	0	2,644	185	2,830	651	3,480

Notes: (a)	from table above
(b)	there are no expected reinsurance recoveries in the self-insurers actuary's valuations
(c)	= (a) - (b)
(d)	(c) x 7%
(e)	= (c) + (d)
(f)	= (e) x 23.0%
(g)	= (e) + (f)

Appendix G Self-insurer claims statistics

G1 Number of claims incurred

Decreasing trend from 2011 peak to 2017

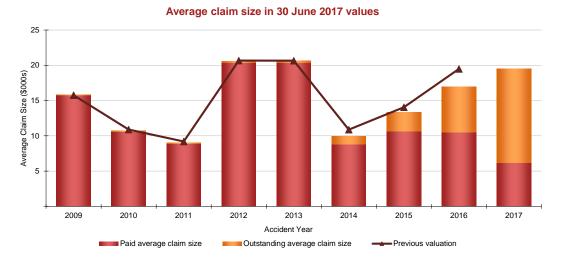


The main points to highlight from this chart are:

- There were strong increases in the number of incurred claims from the 2009 to 2011 accident years,
 from 117 to 206 claims. We are unaware of the drivers of this increase
- Since the high in 2011, the number of claims has reduced each year to a level of 126 claims in 2014.
 From a review of the self-insurer reports, we understand that one self-insurer has changed its management and recording of small claims, which has contributed to the decrease
- The number of claims was fairly stable over 2014 to 2016 at around 130 claims.
- For 2017, the total estimated claims is 89, significantly lower than all prior years shown. Of this estimate,
 13 claims are IBNR
- The number of claims is similar to estimates at the previous valuation.

G 2 Gross average claim size

2017 average claim size just under \$19,500 which is \$2,500 (15%) higher than 2016



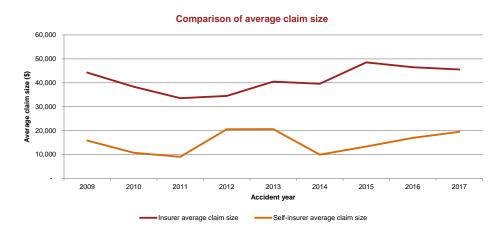
The average claim size has been volatile between accident years and there has been no discernible trend. Since 2009 the average claim size has ranged been between \$9,000 and \$20,600, with lows in 2010, 2011 and 2014 surrounding highs in 2012 and 2013. This implies that the spike in incurred claim numbers in 2011 shown in 3.2.1 is related to smaller claims.

Our estimated average claim size for the 2014, 2015 and 2016 accident years is significantly lower than our previous valuation due to lower than expected payments and development for these accident years over the 2017 financial year.

Our estimated average claim size for the 2017 accident year is \$19,500 which is \$2,500 (15%) higher than the 2016 accident year. The 2017 estimate is high compared with recent years due to fewer claims incurred and allowance for large claims to develop based on historical experience.

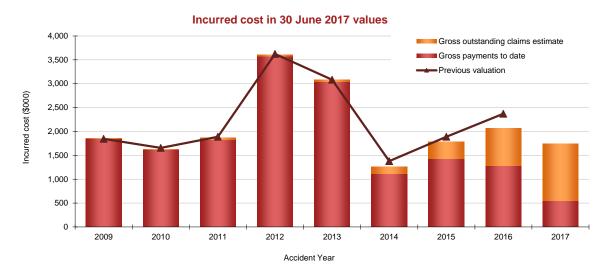
The uncertainty about the future development means that the ultimate level and our estimates may differ from that projected for recent accident years. This is especially true for the 2017 accident year, where a high proportion (68%) of the average claim size consists of the uncertain future estimate.

The chart below compares the average claim size of self-insurers to insurers.



G3 Incurred cost

2017 incurred cost is \$1.7 million, which is lower than 2016 and all other years except for 2010 and 2014



Between 2009 and 2011 the gross incurred cost in 30 June 2017 values is less volatile than the average claim size graph and is between \$1.6 million to \$2.2 million for each accident year. For 2010 and 2011, the higher number of claims is offset by a lower average claim size. The increase in the incurred cost for 2012 is due to a higher average claim size compared to 2010 and 2011, and higher incurred claims relative to the 2009 and prior accident years.

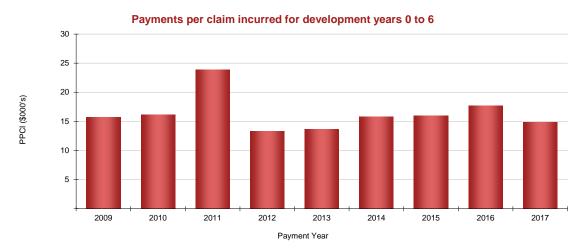
Compared to our previous valuation, there has been a decrease in the incurred costs for the 2014, 2015 and 2016 accident years due to lower than expected payments and claim development.

The incurred cost for 2017 is \$1.7 million, which is \$0.3 million (16%) lower than the 2016 accident year incurred cost of \$2.1 million.

Over the period shown in the graph, the proportion outstanding increases from 0% of the total incurred cost to 68% of the total incurred cost for 2017.

G 4 Payment per claim incurred

2012 to 2016 exhibits an increasing trend, but 2017 is lower than 2016



Payments per claim incurred for development years 0 to 6 spiked to \$23,900 in 2011 due to multiple large claim payments. After this spike, there was a sharp reduction to \$13,200 in 2012, but since then there has been an increasing trend, to \$17,600 in 2016.

In 2017, the payment per claim incurred for development years 0 to 6 decreased to just over \$14,800, a \$2,800 (16%) decrease compared to the 2016 financial year.

Appendix H Insurer break-even premium rate

H1 Calculation of discounted gross incurred cost

The following tables present the data and assumptions we have used to calculate the discounted gross incurred cost, which when combined with the actual expenses give a break-even premium to compare to the actual premium rates charged.

H1.1 Actual claim payments

Accident				Clair	n payments	(\$000s) (a)	for develop	ment year:				
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2005	9,859	12,254	7,372	8,179	5,625	3,518	1,695	2,350	726	476	2,263	54,315
2006	10,364	12,610	7,253	6,702	6,034	7,050	2,406	661	1,958	1,546	2,086	58,669
2007	10,102	13,046	10,637	10,416	7,329	6,525	2,519	4,773	1,704	2,208	1,975	71,234
2008	12,608	17,178	11,438	9,562	6,019	3,794	3,421	2,818	4,170	2,446	0	73,454
2009	13,725	17,104	13,739	9,217	16,149	5,760	3,315	2,253	1,629	0	0	82,891
2010	14,500	18,979	12,681	7,730	6,857	4,418	3,152	2,998	0	0	0	71,316
2011	15,305	19,102	11,430	10,478	3,884	4,980	5,830	0	0	0	0	71,008
2012	16,961	22,429	9,756	9,393	5,214	5,063	0	0	0	0	0	68,816
2013	18,495	24,303	15,560	14,458	7,274	0	0	0	0	0	0	80,091
2014	19,207	24,873	15,273	12,545	0	0	0	0	0	0	0	71,897
2015	19,207	24,695	20,576	0	0	0	0	0	0	0	0	64,479
2016	21,198	30,706	0	0	0	0	0	0	0	0	0	51,904
2017	23,374	0	0	0	0	0	0	0	0	0	0	23,374

Notes: (a) from data extracted from the WIMS system as at 30 June 2017

Note that the data in the table presented above is in a different form to the claim payments data in Appendix C1. Each row in the table shows the payments relating to that specific accident year, i.e. development year 1 for 2012 shows the actual payments made in 2013 financial year in relation to incidents, which occurred in 2012. In the previously presented table, this same cell represented payments made in 2012 financial year for incidents, which occurred in 2011.

H1.2 Historic one-year forward rates

One year forward rate for the year to 30 June												
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Forward rate	1.63%	1.96%	2.47%	2.54%	2.79%	4.76%	4.48%	3.44%	7.07%	6.50%	6.00%	5.32%

These rates are the one year forward rate, projected from one year prior, e.g. the rate to 30 June 2017 is the one year forward rate from the Commonwealth Bond yield curve as at 30 June 2016.

H1.3 Discounted claim payments

Accident	Claim payments (\$000s) (a) for development year:											
Year	0	1	2	3	4	5	6	7	8	9	10	Total
2005	9,604	11,331	6,450	6,754	4,374	2,620	1,203	1,587	471	297	1,293	45,984
2006	10,099	11,629	6,315	5,496	4,740	5,280	1,715	453	1,291	981	1,244	49,243
2007	9,812	11,925	9,127	8,535	5,706	4,821	1,783	3,241	1,110	1,384	1,192	58,636
2008	12,217	15,588	9,888	7,837	4,670	2,813	2,428	1,915	2,718	1,532	0	61,608
2009	13,264	15,706	11,929	7,556	12,620	4,296	2,360	1,536	1,064	0	0	70,332
2010	14,257	17,950	11,522	6,811	5,867	3,671	2,551	2,366	0	0	0	64,994
2011	14,973	17,863	10,315	9,135	3,273	4,066	4,619	0	0	0	0	64,244
2012	16,571	21,118	8,863	8,236	4,423	4,163	0	0	0	0	0	63,374
2013	18,242	23,348	14,565	13,219	6,507	0	0	0	0	0	0	75,881
2014	18,967	23,962	14,390	11,578	0	0	0	0	0	0	0	68,898
2015	18,974	23,867	19,486	0	0	0	0	0	0	0	0	62,327
2016	20,993	29,871	0	0	0	0	0	0	0	0	0	50,864
2017	23,186	0	0	0	0	0	0	0	0	0	0	23,186

Notes: (a) payments from I1.1 above, discounted using the rates in I1.2

H1.4 Discounted gross incurred cost

	Discounted gross claim payments (a)	Discounted gross outstanding claims (b)	Discounted gross incurred cost (c)
Underwriting year	(\$000s)	(\$000s)	(\$000s)
2017	23,186	87,056	110,242
2016	50,864	63,365	114,229
2015	62,327	57,919	120,246
2014	68,898	29,147	98,045
2013	75,881	22,104	97,986
2012	63,374	11,527	74,900
2011	64,244	6,103	70,347
2010	64,994	8,328	73,323
2009	70,332	9,171	79,504

Notes: (a) from I1.3 above

(b) outstanding claims inflated/discounted from Appendix C4, discounted to the start of the underwriting year using rates in Appendix H1.2 above

(c) = (a) + (b)

H 2 Estimated historic break-even premium rate

			Calculated brea	k even premium	Actual premium						
			Discounted		Discounted			Reported	Developed		
	Reported	Developed	gross incurred	Commission in	other		Estimated	earned	earned	Actual	Difference
	earned wages	earned wages	cost (c)	financial year	expenses in	Premium (f)	premium rate	premium (h)	premium (i)	premium rate	(break even -
Accident year	(a) (\$000s)	(b) (\$000s)	(\$000s)	(d) (\$000s)	the fin year (e)	(\$000s)	(g)	(\$000s)	(\$000s)	charged (j)	actual)
2017	6,986,708	7,371,290	110,242	4,489	20,653	135,933	1.8%	124,137	130,910	1.8%	-5,023
2016	6,748,792	6,910,925	114,229	4,163	20,086	139,152	2.0%	126,416	129,432	1.9%	-9,720
2015	6,571,269	6,618,084	120,246	4,558	20,288	145,981	2.2%	135,220	135,220	2.0%	-10,761
2014	5,930,754	5,930,754	98,045	4,775	17,098	120,672	2.0%	139,234	139,234	2.3%	18,562
2013	5,199,017	5,199,017	97,986	3,697	15,016	117,505	2.3%	124,240	124,240	2.4%	6,734
2012	4,633,724	4,633,724	74,900	2,864	14,015	92,853	2.0%	99,113	99,113	2.1%	6,261
2011	4,138,004	4,138,004	70,347	2,863	11,998	86,146	2.1%	86,936	86,936	2.1%	790
2010	3,576,580	3,576,580	73,323	2,624	10,680	87,362	2.4%	75,252	75,252	2.1%	-12,111
2009	3,829,000	3,829,000	79,504	2,544	11,837	95,501	2.5%	83,089	83,089	2.2%	-12,412

Notes: (a) earned wages provided by insurers

(b) (a) x development factors in Appendix B7

(c) calculated in Appendix H1

(d) actual commission, from the consolidated Form A returns

(e) other expenses, from the consolidated Form A returns, discounted by half a year

(f) = $(c) + (d) + (e) \times (1 + one \text{ year historical interest rate}) \wedge (3/12)$ to allow for the fact that premiums are received 3 months after the commencement of the underwriting period

(g) = (f) / (b)

(h) earned premium, including earned but not yet reported premium provided by insurers

(i) (h) x development factors in Appendix B7

(j) = (i) / (b)

H 3 Calculation of break-even premium rate for 2016/17

H3.1 Discounted incurred cost for 2016/17

We selected the number of incurred claims and average claim size for 2016/17 based on the experience over the last five years, and allowing for future inflation and superimposed inflation. The following table shows the number of incurred claims, claim frequency and average claim size over the last five years and our adopted values.

	Accident year					
	2017	2016	2015	2014	2013	Adopted
Number of claims incurred (a) Claim frequency per \$84,923 of	2,438	2,530	2,647	2,750	2,779	2,552
wages (b) Average claim size (in	2.8%	3.0%	3.1%	3.5%	4.0%	2.9%
30 June 2017 values) (c)	45,582	46,507	48,510	39,597	40,488	46,511

Notes: (a) The adopted number of claims incurred is based on the adopted claim frequency in (b) times the projected wages.

- (b) The adopted claim frequency is a three year average
- (c) The adopted average claim size is a five year average (2016 excluding the 2015 legislative amendments), with a reduction of 2.8% due to the 2015 legislative amendments

Allowing for inflation of 1.70%, superimposed inflation of 1.90% and an inflation/discount factor to allow for the timing of payments of 0.9926 the discounted incurred cost for 2017/18 can be calculated as:

 $2,552 \times [46,511 \times (1 + 1.70\%) \times (1 + 1.90\%) \times 0.9926] = $122.1 \text{ million}.$

H3.2Expense loadings

To calculate the break-even premium rate the discounted incurred cost must be loaded for expenses. To calculate an appropriate allowance for expenses in the premium rate we have analysed the commission rate and the other expenses (including claims handling) separately over a five year period.

This analysis is shown in the following table.

(\$000s)	Underwriting year					
	2017	2016	2015	2014	2013	Adopted
Gross written premium (a)	134,286	114,332	140,232	156,328	126,743	
Earned premium (b)	126,442	119,514	141,354	137,054	106,715	
Commission paid (c)	4,489	4,163	4,558	4,775	3,697	
Other expenses (d)	20,821	20,282	20,537	17,314	15,224	
Commission rate (e)	3.6%	3.5%	3.2%	3.5%	3.5%	3.4%
Other expense rate (f)	15.5%	17.7%	14.6%	11.1%	12.0%	15.9%

Notes: (a), (b), (c), (d) from the consolidated Form A returns

- (e) commission / earned premium, the adopted value uses a three year average
- (f) other expenses / gross written premium, the adopted value uses a three year average

H3.3Projected break-even premium for 2016/17

Using the analysis above, the projected break-even premium rate for 2016/17 is:

Underwriting year	Actual wages (a) (\$000s)	Discounted gross incurred cost (b) (\$000s)	Expenses (c) (\$000s)	Premium (d) (\$000s)	Calculated premium rate (e)
2018	7,496,602	122,085	29.127	151.802	2.0%

Notes: (a) 2017 developed earned wages, inflated for one year's wage inflation at 1.70%

- (b) from H3.1 above
- (c) = (b) / (1 commission rate (3.4%) other expense rate (15.9%)) (b)
- (d) = (b) / $(1 \text{commission rate } (3.4\%) \text{other expense rate } (15.9\%)) \times (1 + \text{interest rate } (1.6\%)) ^ (3/12)$ to allow for the fact that premiums are received 3 months after the commencement of the underwriting period
- (e) = (d) / (a)

This break-even premium rate allows for the same timing aspects as the historic calculations of the break-even rate.

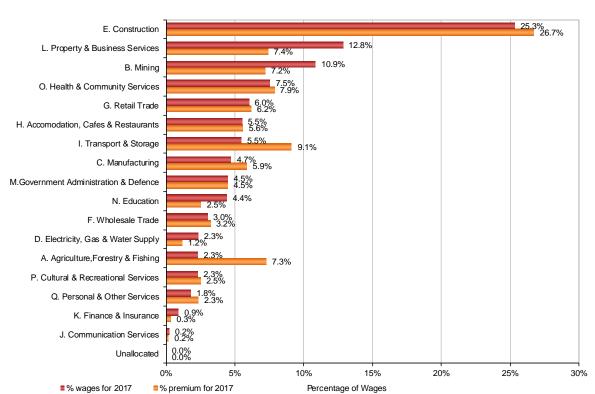
H 4 Historical rates by industry

The following tables show the historical premium rates charged by industry (excluding self-insurers) on an underwriting/earned year basis.

The underwriting year basis should be more accurate than the processing year previously used as it aligns with the claims data. The data on a processed year basis includes premium and wages adjustments for historical years, which may distort the results.

Underwriting year basis						Difference
Premium rate by ANZSIC division	2013	2014	2015	2016	2017 2	017 / 2016
A. Agriculture, Forestry & Fishing	6.43%	6.51%	6.32%	5.69%	5.58%	-1.9%
B. Mining	2.57%	2.01%	1.54%	1.32%	1.17%	-11.1%
C. Manufacturing	3.05%	3.15%	2.85%	2.35%	2.20%	-6.6%
D. Electricity, Gas & Water Supply	1.19%	0.90%	0.84%	0.83%	0.88%	5.7%
E. Construction	2.96%	2.78%	2.26%	1.99%	1.86%	-6.2%
F. Wholesale Trade	2.04%	2.09%	2.22%	1.97%	1.89%	-3.9%
G. Retail Trade	2.08%	2.16%	2.09%	1.84%	1.81%	-1.4%
H. Accomodation, Cafes & Restaurants	2.36%	2.21%	2.08%	1.85%	1.79%	-3.2%
I. Transport & Storage	3.36%	3.66%	3.01%	2.97%	2.95%	-0.5%
J. Communication Services	2.00%	1.83%	1.64%	1.52%	1.41%	-7.1%
K. Finance & Insurance	1.01%	1.12%	0.91%	0.74%	0.65%	-12.1%
L. Property & Business Services	1.47%	1.46%	1.14%	1.06%	1.02%	-3.7%
M.Government Administration & Defence	2.25%	2.41%	2.32%	2.05%	1.76%	-14.0%
N. Education	1.05%	1.15%	1.09%	1.03%	1.01%	-1.3%
O. Health & Community Services	2.40%	2.37%	2.21%	2.03%	1.84%	-9.5%
P. Cultural & Recreational Services	2.82%	2.92%	1.67%	1.96%	1.92%	-2.1%
Q. Personal & Other Services	2.40%	2.48%	2.46%	2.53%	2.32%	-8.5%
Unallocated	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	2.39%	2.34%	2.05%	1.86%	1.76%	-4.9%

The percentage of wages and premium by industry, on an underwriting year basis for the current year are:



Percentage of wages and premium by industry for the 2016/17 accident year only

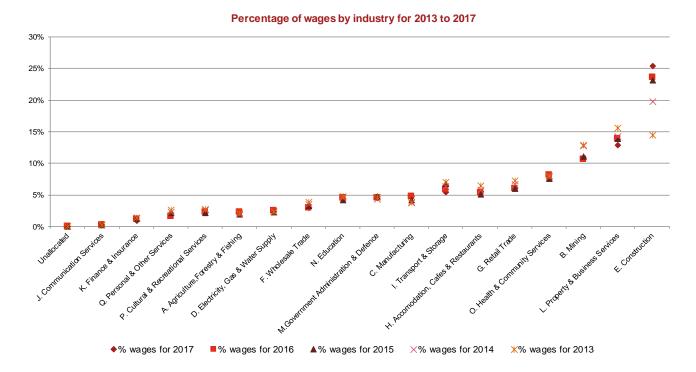
This shows that the sectors with significantly higher premium rate than the scheme average are:

- Transport and storage
- Agriculture, forestry and fishing

Meanwhile the sectors with significantly lower premium rate than the scheme average are:

- Property and business services
- Mining
- Education
- · Electricity, gas and water supply
- Finance and insurance.

The chart below shows wages by ANZSIC class on an underwriting year basis. This split requires insurers to split wages and premium across the years that a multi-year policy is in force for.



Presenting the information in this way acts to smooth the variation in wages by industry from one year to the next. Of note is the strong increase in Construction over the last five years, driven by the Inpex project.

Appendix I Glossary

AASB

Australian Accounting Standards Board

ABS

Australian Bureau of Statistics

Accident year

The financial year ending 30 June, in which the accident event leading to a claim occurs, irrespective of when the claim is reported, paid and finalised.

APRA

Australian Prudential Regulation Authority

Break-even premium rate

This is the expected cost for policies, including an allowance for associated expenses and timing of premium payments. It is calculated as:

Break-even premium rate = Discounted incurred cost / $(1 - \text{commission rate} - \text{other expense rate}) \times (1 + \text{interest rate}) ^ 3 / 12$

Central estimate

Unbiased actuarial estimate, which has 50% probability of being sufficient. It is the median of the range of possible outcomes. The central estimate is inflated and discounted and includes claims handling expenses (unless where specified) and does not include a risk margin.

Development year

The number of completed years since the end of the accident year. Development year zero refers to the financial year ending 30 June in which the accident event occurs. Development year is also abbreviated to DY in this report.

EBNYR premium

Earned but not yet raised premium.

The earned but not yet raised premium is the aggregate of the burner policy premium adjustments where the estimated claims experience suggests that either more premium will need to be collected or some premium will be refunded.

PwC Glossary

Funding ratio

The funding ratio is measuring the liabilities held by the insurers or self-insurers (the notional assets) compared to the aggregate outstanding claims liability calculated by the scheme actuary. The funding ratio is as defined by the Comparative Monitoring Committee.

For the insurers this is calculated as: <u>inflated and discounted provision (including risk margin)</u>

inflated and discounted central estimate (excluding risk margin)

For the self-insurers this is calculated as: bank guarantee provision (1.5 x central estimate)

inflated and discounted central estimate (excluding risk margin)

Inflated and discounted values

The estimates in current values are inflated to the dollar values in the estimated future year of payment. These values are discounted to 30 June 2017 values to allow for future investment income that will be earned until the claim is paid. The inflation and discount rates are outlined in appendix B1.

NT

Northern Territory

Provision

The central estimate plus the risk margin.

Risk margin

The margin added to the central estimate to increase its level of adequacy to above 50%.

Risk premium

The risk premium is an estimate of the pure risk cost of claims and does not include allowance for expenses or margins.

Risk Premium = estimated incurred cost of the risk covered i.e. of the claims with

dates of occurrence in the risk/cover period

= number of claims x average claim size

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