

# ***NT WorkSafe***

Actuarial review of  
Northern Territory  
workers compensation  
scheme as at  
30 June 2018

February 2019





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NT WorkSafe  
Department of Attorney-General and Justice  
Northern Territory Government  
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28 February 2019

Dear Mel

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 2018 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 2018, 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 2018/19 underwriting year.

Yours sincerely

A handwritten signature in black ink that reads 'Lisa Simpson'.

Lisa Simpson

A handwritten signature in black ink that reads 'Kathryn Cannon'.

Kathryn Cannon

Fellows of the Institute of Actuaries of Australia

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# 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 or 'Form A' basis is variable with the most recent four out of five financial years incurring a loss. The insurer funding ratio has increased slightly this year to 102% from 99% at the previous valuation, so in aggregate the insurers' reserves may be 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 2018 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 provisions (a) | PwC central estimate (b) | Difference (\$000) (b) - (a) | Funding ratio (a) / (b) |
| Insurers               | 383,662               | 377,281                  | -6,381                       | 102%                    |
| Self-insurers          | 5,385                 | 3,721                    | -1,664                       | 145%                    |
| Total                  | 389,046               | 381,002                  | -8,045                       | 102%                    |

**Notes:** see section 2 of this report

As at 30 June 2018, the insurers' funding ratio was 102% while the self-insurers' funding ratio was 145%. The insurers' funding ratio increased from 99% as at 30 June 2017 and the self-insurers' funding ratio decreased from 161%.

The increase in the insurers' funding ratio was due to the insurers' provisions increasing by \$24.3 million while our central estimate increased by \$12.8 million compared to 30 June 2017. We are not provided with a reconciliation for the insurers' provisions, so cannot identify the drivers of the insurers' increase.

The decrease in the self-insurer funding ratio is due to the self-insurers' provisions increasing by less than our central estimate compared to 30 June 2017. 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 increased to slightly above 100%. We make the following comments which should be borne in mind when considering the funding ratio:

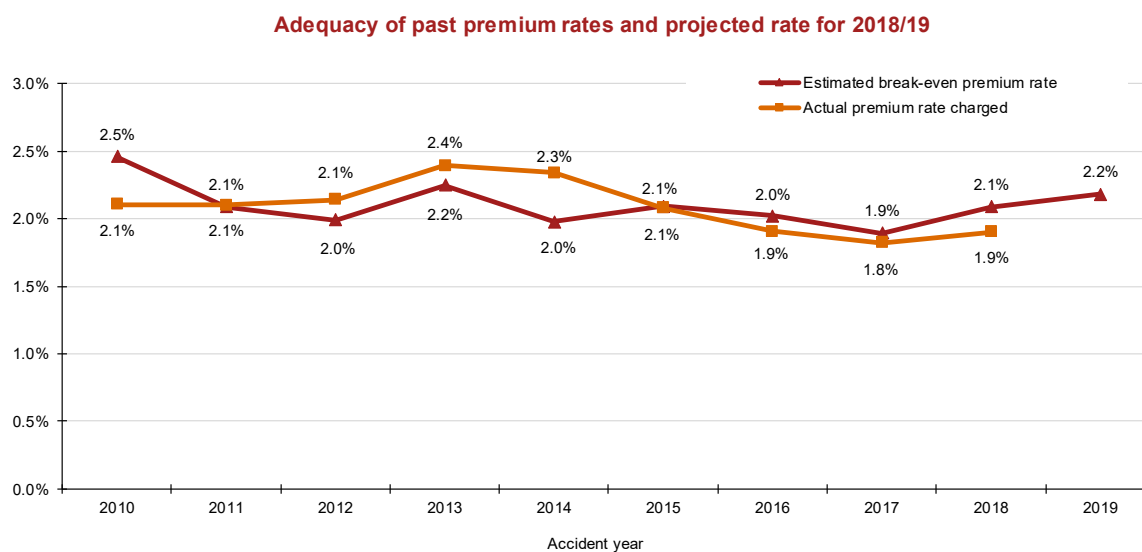
- The insurers' actuaries have access to more detailed claims data than we have to estimate the liabilities
- Insurers hold assets in excess of liabilities due to APRA capital requirements and their own risk appetite
- Some insurers may be holding greater than 100% of our notional allocation to them,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

## Key findings

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 2017 and 2018 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 2018/19.



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 2010 to 2018 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 2015, but were not sufficient to cover the estimated break-even cost for accident years ending 2010 and 2016 to 2018.

We estimate that the 2018 developed premiums charged of \$143.1 million were \$13.8 million (8.8%) lower than the estimated break even premiums of \$156.9 million. The 2018 developed premiums charged are also less than the estimated break-even premium rate in last year's report of \$151.8 million, but above the 2017 developed premium charged. Therefore, insurers' increased their premium rates between 2017 and 2018 and are responding in a moderate fashion to the increasing costs in the scheme, indicating that competitive pressures in the market are active to curb large annual premium increases in aggregate.

The pattern demonstrated in the actual premium rate charged could be driven by changes in the underwriting or economic cycle. The start of a new upwards trend in a cycle could potentially drive an increase in the actual premium charged in 2019.

Our projected break-even premium rate for 2019 is 2.2%, which is higher than the estimated break-even premium rates and actual premium rates charged over the most recent five years, of between 1.8% and 2.1%.

## Key findings

The increase in the projected break-even premium rate has been driven by a high estimated average claim size, due to high payments and case estimates for the 2018 accident year.

The estimated break-even premium rates for accident years 2016 to 2019 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, 2010 continues 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***

| <b>Claim statistic</b>    | <b>Insurer</b>                                                                                                                                                                                                                                                                                                                                | <b>Self-insurers</b>                                                                                                                                        |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of claims incurred | Decreasing trend in claim numbers since peak in 2013, 2018 claim numbers (2,442) are expected to be similar to 2017 (2,420).<br><br>Similar to claim numbers, the claim frequency demonstrated a decreasing trend from 2013 to 2017 with a slight increase in 2018. Frequency is estimated to be 3.0% in 2016, 2.7% in 2017 and 2.8% in 2018. | Decreasing trend from high 2011 to 2017. This trend reversed in 2018 with incurred claims estimated to be 97, 12 more than the 85 claims incurred for 2017. |
| Average claim size        | 2018 average claim size is \$54,000, which is significantly higher than all prior years, driven by high payments and case estimates to 30 June 2018.                                                                                                                                                                                          | Significantly lower than insurers, at \$23,000 for the 2018 accident year.                                                                                  |
| Incurred cost             | 2018 incurred cost is \$132.0 million, which is higher than all prior years.                                                                                                                                                                                                                                                                  | The incurred cost for 2018 of \$2.2 million, which is lower than the incurred cost for 2017 but higher than 2014 to 2016.                                   |
| Gross loss ratio          | 2018 is 91%, which is the highest loss ratio for all accident years since 2011 where we first received earned premium information.                                                                                                                                                                                                            | n/a                                                                                                                                                         |

| Claim statistic              | Insurer                                                                                                                                                                                                                                                         | Self-insurers |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Distribution by payment type | Redemption and non-economic lump sums and weekly benefits combined account for approximately two-thirds of the total incurred cost and payments each financial year.<br><br>The distribution of payments for the last eight accident years has remained stable. | n/a           |

## ***Risks and uncertainties***

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

- **Inpex project**

Significant increases in wages have been driven by the Inpex project and the associated contracts. Up to and including the 2017 year, the number of claims incurred and claims cost have not reflected the increase in wages, causing the claim frequency and premium rate to reduce. In 2018, the average claim size and incurred cost increased. We understand that over the 2018 financial year the construction phase wound down with production starting in October 2018. Therefore, the number of workers is expected to 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 and may be increasing the 2018 average claim size, as there are fewer jobs for people to return to.

- **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. 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, particularly as it relates to the high average claim size for insurers for the 2018 accident year due to higher payments and outstanding case estimates to 30 June 2018.

- **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 increased slightly 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 to 2017/18 accident years and the future costs for the 2018/19 accident year. In separate advice, PwC estimated that there would be a 2.8% reduction in respect of the most significant benefit changes (excluding death benefit increases). In this valuation, we have also allowed for the increase in death and funeral benefits, so the net reduction is 2.4%. 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 no unintended consequences. See Appendix B6 for more information.

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# *Contents*

|                                                       |    |
|-------------------------------------------------------|----|
| Key findings                                          | i  |
| 1 About this report                                   | 1  |
| 1.1 Context for our review                            | 2  |
| 1.2 Disclaimer                                        | 3  |
| 1.3 Compliance with standards                         | 3  |
| 2 Insurer outstanding claims liabilities              | 5  |
| 2.1 Outstanding claims liability                      | 6  |
| 2.2 Claims statistics                                 | 9  |
| 2.3 Actual vs expected claims experience over 2017/18 | 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 2017/18 | 17 |
| 3.4 Reconciliation of central estimates               | 17 |
| 4 Break-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             | 25 |
| 5.4 Projection methods for outstanding claims         | 26 |
| 5.5 Approach to estimate break-even premium rates     | 28 |
| 6 Assumptions                                         | 30 |
| 6.1 Financial assumptions                             | 31 |

|     |                                                      |     |
|-----|------------------------------------------------------|-----|
| 6.2 | Superimposed inflation                               | 31  |
| 6.3 | Expenses                                             | 32  |
| 6.4 | Reinsurance                                          | 33  |
| 6.5 | 2015 legislative amendments                          | 33  |
| 7   | Uncertainty                                          | 35  |
| 7.1 | Uncertainty in the estimates                         | 36  |
| 7.2 | Determination of provisions                          | 36  |
| 7.3 | Key risks for NT WorkSafe scheme                     | 39  |
|     | Appendix A Detailed data description                 | 43  |
|     | Appendix B Assumptions                               | 49  |
|     | Appendix C Insurer outstanding claim valuation       | 59  |
|     | Appendix D Insurer claims statistics                 | 76  |
|     | Appendix E Insurer financial year claims experience  | 83  |
|     | Appendix F Self-insurer outstanding claims valuation | 90  |
|     | Appendix G Self-insurer claims statistics            | 99  |
|     | Appendix H Insurer break-even premium rate           | 103 |
|     | Appendix I Glossary                                  | 110 |



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# ***1 About this report***

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## **Key points of this section**

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- NT WorkSafe have engaged us to value the outstanding claims liability for the scheme as at 30 June 2018 and review the adequacy of premium rates charged by insurers
  - We have complied with the relevant actuarial and accounting standards when performing this review.
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## ***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 2018 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 2018, 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 2018/19 based on historic data and future inflation assumptions.

This is the sixth time we have prepared this report for the NT workers compensation scheme. Our previous valuation was conducted using data as at 30 June 2017, the findings of which are detailed in our 13 June 2018 report titled *Actuarial review of Northern Territory workers compensation scheme as at 30 June 2017*.

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 self-insurers 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.

## ***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 2018 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.



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## ***2 Insurer outstanding claims liabilities***

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### **Key points of this section**

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- Our estimate of the net outstanding claims provision as at 30 June 2018 is \$422.8 million, which is \$5.3 million (1.3%) higher than the provision as at 30 June 2017
  - This provision is \$39.2 million (10.2%) higher than insurers' own provisions of \$383.7 million.
  - The funding ratio is 102% which is higher than 99% last year
  - The number of claims incurred had decreased since the peak in 2013 before stabilising between 2017 and 2018. Over the same period claim frequency decreased, except for a slight increase from 2017 to 2018. In 2018, the number of claims incurred is 2,442
  - Average claim size for 2018 is expected to be significantly higher than all previous years at \$54,000 due to high payments and case estimates to 30 June 2018
  - The reconciliation of our gross estimates, excluding claims handling expenses, to our estimates as at 30 June 2017 shows a release of reserves of \$6.5 million, which is 1.7% 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 2018 (\$000s) (a) (b) |                 |                      |                                                                     |                          |               |                                       |                               |                |  |
|------------------------------------------------------------------|-----------------|----------------------|---------------------------------------------------------------------|--------------------------|---------------|---------------------------------------|-------------------------------|----------------|--|
| Accident year ending 30 June                                     | Weekly Benefits | Medical And Hospital | Vocational Rehabilitation, Non-Compensation Payments (Other), Death | Other Goods And Services | Legals        | Redemptions And Non-Economic Lump Sum | Active large claims allowance | Total          |  |
| 2018                                                             | 32,599          | 9,586                | 10,905                                                              | 3,747                    | 6,581         | 41,329                                | 0                             | 104,748        |  |
| 2017                                                             | 14,549          | 3,562                | 5,031                                                               | 1,735                    | 4,882         | 34,028                                | 0                             | 63,787         |  |
| 2016                                                             | 8,515           | 1,796                | 2,683                                                               | 1,035                    | 3,308         | 26,160                                | 4,668                         | 48,166         |  |
| 2015                                                             | 7,349           | 1,786                | 1,843                                                               | 1,032                    | 2,760         | 18,174                                | 5,949                         | 38,894         |  |
| 2014                                                             | 4,608           | 1,187                | 1,153                                                               | 711                      | 1,686         | 11,393                                | 0                             | 20,738         |  |
| 2013                                                             | 5,009           | 1,186                | 1,188                                                               | 778                      | 1,552         | 11,585                                | 0                             | 21,298         |  |
| 2012                                                             | 2,697           | 609                  | 551                                                                 | 405                      | 746           | 5,832                                 | 0                             | 10,840         |  |
| 2011                                                             | 1,723           | 361                  | 336                                                                 | 267                      | 388           | 3,858                                 | 0                             | 6,933          |  |
| 2010                                                             | 2,334           | 431                  | 441                                                                 | 346                      | 511           | 5,064                                 | 0                             | 9,127          |  |
| 2009 & earlier                                                   | 9,171           | 1,950                | 1,699                                                               | 1,252                    | 2,123         | 20,927                                | 25,516                        | 62,637         |  |
| <b>Total</b>                                                     | <b>88,555</b>   | <b>22,454</b>        | <b>25,831</b>                                                       | <b>11,308</b>            | <b>24,538</b> | <b>178,350</b>                        | <b>36,133</b>                 | <b>387,169</b> |  |

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 (46% 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 2018 excluding expenses (\$000s) |                     |                 |                  |
|-------------------------------------------------------------|---------------------|-----------------|------------------|
| Accident year ending 30 June                                | 30 June 2018 values | Inflated values | Infl/disc values |
| 2018                                                        | 104,748             | 111,399         | 103,394          |
| 2017                                                        | 63,787              | 68,405          | 62,868           |
| 2016                                                        | 48,166              | 52,283          | 47,401           |
| 2015                                                        | 38,894              | 42,580          | 38,231           |
| 2014                                                        | 20,738              | 22,903          | 20,344           |
| 2013                                                        | 21,298              | 23,544          | 20,893           |
| 2012                                                        | 10,840              | 12,054          | 10,624           |
| 2011                                                        | 6,933               | 7,697           | 6,797            |
| 2010                                                        | 9,127               | 10,094          | 8,953            |
| 2009 & earlier                                              | 62,637              | 67,785          | 61,723           |
| <b>Total</b>                                                | <b>387,169</b>      | <b>418,744</b>  | <b>381,228</b>   |

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:

| Estimates at 30 June 2018 (\$000s) |                         |                            |                       |                              |                          |                 |                   |
|------------------------------------|-------------------------|----------------------------|-----------------------|------------------------------|--------------------------|-----------------|-------------------|
|                                    | Gross o/s liability (a) | Reinsurance recoveries (b) | Net o/s liability (c) | Claims handling expenses (d) | Net central estimate (e) | Risk margin (f) | Net Provision (g) |
| Total                              | 381,228                 | 25,303                     | 355,925               | 21,356                       | 377,281                  | 45,544          | 422,825           |

**Notes:**

|     |                                                                           |
|-----|---------------------------------------------------------------------------|
| (a) | from table above                                                          |
| (b) | based on the reinsurance information provided by insurers on large claims |
| (c) | = (a) – (b)                                                               |
| (d) | = (c) x 6%, see section 6.3 for details of the claims handling expenses   |
| (e) | = (c) + (d)                                                               |
| (f) | = (e) x 12.07%, see section 7.2.2 for details on the risk margin          |
| (g) | = (e) + (f)                                                               |

The inflated and discounted gross central estimate of \$381.2 million is \$8.1 million (2.2%) higher than the equivalent estimate as at 30 June 2017. This increase is driven by the high outstanding liability for the 2018 accident year due to the high average claim size partially offset by increases in the real rates of returns.

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 2018 is \$422.8 million, which is \$5.3 million (1.3%) higher than 30 June 2017. The increase in the net provision is less than the increase in the gross central estimate, due to a lower risk margin adopted in this year's valuation and partially offset by a decrease in the expected reinsurance recoveries.

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

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 2018 excluding expenses (\$000s) |                        |                  |                              |                              |
|-------------------------------------------------------------|------------------------|------------------|------------------------------|------------------------------|
|                                                             | Insurers' estimate (a) | PwC estimate (b) | Difference (\$000) (b) - (a) | Difference (%) (b) / (a) - 1 |
| Total                                                       | 363,854                | 381,228          | 17,374                       | 4.8%                         |

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

| Net provision at 30 June 2018 (\$000s) |                          |                   |                              |                              |
|----------------------------------------|--------------------------|-------------------|------------------------------|------------------------------|
|                                        | Insurers' provisions (a) | PwC provision (b) | Difference (\$000) (b) - (a) | Difference (%) (b) / (a) - 1 |
| Total                                  | 383,662                  | 422,825           | 39,163                       | 10.2%                        |

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

As at 30 June 2018, our gross estimate is \$17.4 million (4.8%) higher than that of the insurers. This compares to our estimate being \$24.2 million (6.9%) higher than that of the insurers at 30 June 2017. 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 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 provisions (a) | PwC central estimate (b) | Difference (\$000) (b) - (a) | Funding ratio (a) / (b) |
| Insurers               | 383,662               | 377,281                  | -6,381                       | 102%                    |

**Notes:** (a) as per table above, net provision including risk margin  
(b) net central estimate, excluding risk margin

The aggregate funding ratio is 102%, which is an increase from 99% last year. Compared to the valuation result at 30 June 2017 our central estimate increased by \$12.8 million while the insurers' provisions increased by \$24.3 million, which is why the funding ratio increased. 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 increased from 99% to 102%. We make the following comments which should be borne in mind when considering the funding ratio:

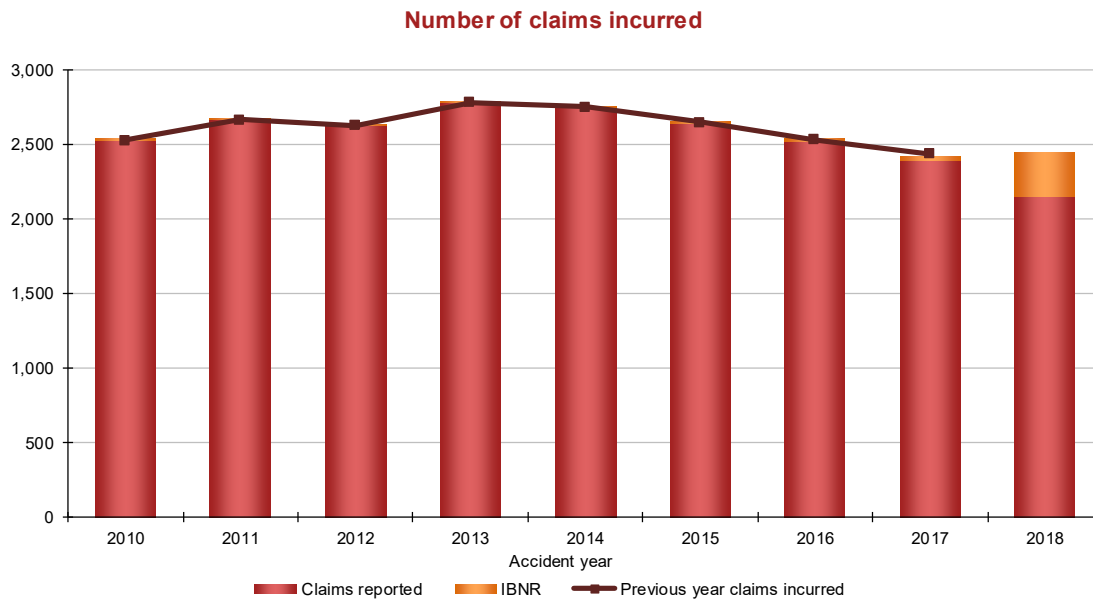
- The insurers' actuaries have access to more detailed claims data than we have to estimate the liabilities
- Insurers hold assets in excess of their liabilities due to APRA capital requirements and their own risk appetite
- Some insurers may be holding greater than 100% of our notional allocation to 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, stabilising in 2018*

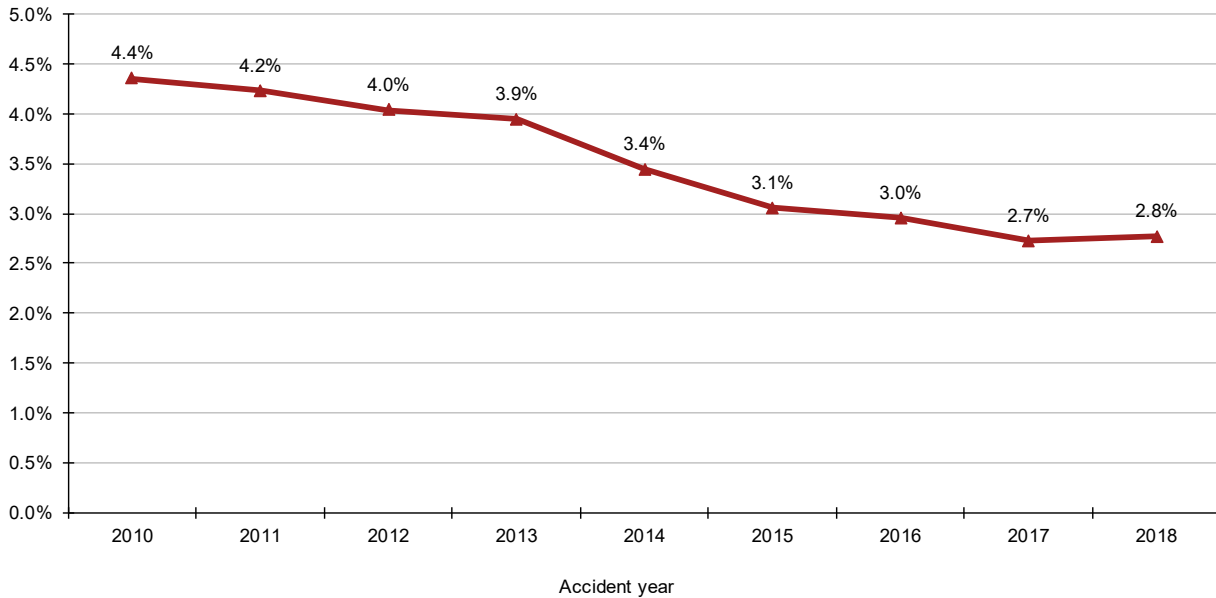


The main points to highlight from this chart are:

- For the 2010 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, however 2017 and 2018 are very similar
- Incurred claims estimated for the 2018 accident year are 2,442 which is 23 (0.9%) more than 2017.

*Declining claim frequency due to significant increases in wages up to 2015 and more recently reducing numbers of claims incurred, slightly increasing from 2017 to 2018*

**Claim frequency per \$86,525 of real wages**

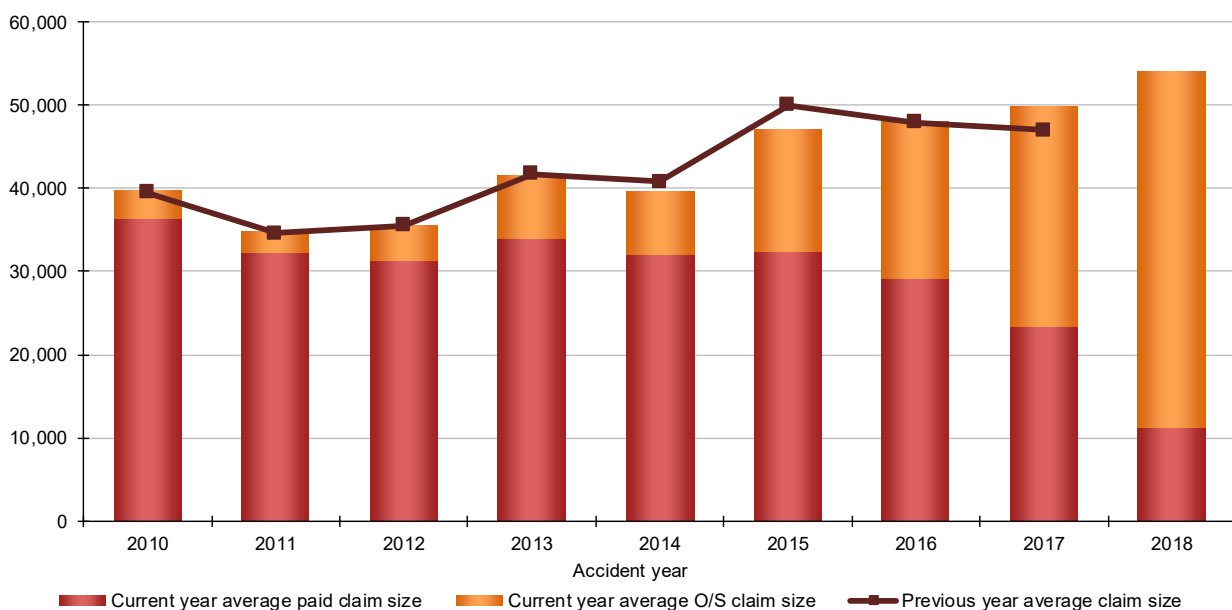


See Appendix D1 for the formula to calculate the claim frequency.

### 2.2.2 Gross average claim size

*Average claim size for 2018 is estimated to be significantly higher than all prior years due to high payments and case estimates at 30 June 2018*

**Gross average claim size in 30 June 2018 values**



Since 2010 the gross average claim size (in 2018 values):

- Exhibited volatility due in part to large claims
- Dropped to a low of around \$34,800 in 2011, caused by lower than average redemption payments
- Exhibited a broadly increasing trend from around \$34,800 in 2011 to around \$49,700 in 2017
- Increased significantly to \$54,000 in 2018 due to high payments and case estimates to 30 June 2018

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 2018 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 2015, where estimates decreased. This was mainly due to a decrease in the size of one large claim. 2017 has increased due to an increase in claims experience.

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

## ***2.3 Actual vs expected claims experience over 2017/18***

### ***2.3.1 Claims incurred up to 30 June 2017***

Actual experience compared to the expected experience over 2017/18 for claims incurred up to 30 June 2017 showed:

- Claim reports were lower than expected (284 actual compared to 299 expected)
- The proportion of claims finalised was on par with expected (63.7% compared to 63.5%)
- Claim payments were lower than expected (\$93.9 million actual compared to \$98.3 million expected).

Expected experience is taken from the previous scheme report dated 13 June 2018. 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 2017/18***

The actual experience for claims incurred over 2017/18 compared to expected showed:

- The number of incurred claims was 0.9% higher than the 2017 accident year
- There were 1,011 claims active as at 30 June 2018, which is 5.1% higher than the 886 expected
- The average payment per claim was \$11,159, which is 18.5% higher than the \$9,585 expected.

The expected experience is based on the adopted parameters used for our 30 June 2017 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 2017.

| Reconciliation of gross actuarial estimates, excluding expenses (\$000s) |                                                                       |        |        |        |        |        |        |                   |        |         |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|-------------------|--------|---------|
| Accident year ending 30 June                                             | 2017                                                                  | 2016   | 2015   | 2014   | 2013   | 2012   | 2011   | 2010<br>& earlier | Total  |         |
| <b>A.</b>                                                                | Gross estimates at 30 June 2017 (a)                                   | 88,477 | 65,664 | 61,503 | 31,737 | 24,741 | 13,516 | 7,476             | 79,969 | 373,083 |
| <b>B.</b>                                                                | Gross payments 1 July 2017 to 30 June 2018                            | 31,689 | 19,247 | 15,764 | 8,160  | 3,474  | 2,473  | 1,127             | 11,941 | 93,875  |
| <b>C.</b>                                                                | Assumed investment return (b)                                         | 1,142  | 881    | 843    | 435    | 362    | 193    | 109               | 1,163  | 5,127   |
| <b>D.</b>                                                                | = A - B + C                                                           | 57,930 | 47,298 | 46,582 | 24,012 | 21,629 | 11,236 | 6,458             | 69,191 | 284,336 |
|                                                                          | Updated gross estimates at 30 June 2018                               |        |        |        |        |        |        |                   |        |         |
| <b>E.</b>                                                                | Revised gross estimates at 30 June 2018 (c)                           | 62,868 | 47,401 | 38,231 | 20,344 | 20,893 | 10,624 | 6,797             | 70,676 | 277,835 |
| <b>F.</b>                                                                | = E - D                                                               | 4,938  | 103    | -8,351 | -3,667 | -735   | -612   | 339               | 1,485  | -6,501  |
|                                                                          | Change 01 July 2017 to 30 June 2018                                   |        |        |        |        |        |        |                   |        |         |
| <b>G.</b>                                                                | Proportion of change attributable to                                  |        |        |        |        |        |        |                   |        |         |
|                                                                          | Changes in real rates of return                                       | -4,692 | -4,363 | -1,152 | -659   | -684   | -368   | -232              | -2,007 | -14,158 |
|                                                                          | Change in experience                                                  | 7,492  | 3,179  | -5,862 | -2,520 | -919   | -901   | 92                | -3,092 | -2,531  |
|                                                                          | Change in actuarial assumptions                                       | 2,138  | 1,287  | -1,338 | -489   | 867    | 657    | 480               | 6,584  | 10,187  |
| <b>H.</b>                                                                | Gross amount incurred and outstanding for 2017/18 accident year (e)   |        |        |        |        |        |        |                   |        | 103,394 |
| <b>I.</b>                                                                | = E + H                                                               |        |        |        |        |        |        |                   |        | 381,228 |
|                                                                          | Total gross outstanding liability, excluding expenses at 30 June 2018 |        |        |        |        |        |        |                   |        |         |

- Notes :**
- (a) from section 2.1 of our previous report dated 13 June 2018
  - (b) calculated using 1.6% p.a. being the one year forward rate from section 6.1 of our previous report dated 13 June 2018
  - (c) from appendix C4 of this report.

The table shows that:

- Overall estimates show a release of reserves of \$6.5 million, which is 1.7% of the opening 30 June 2017 estimates. This increase is made up:
  - \$14.2 million decrease (3.8% of opening estimates) due to the increase in the real rates of return
  - \$2.5 million decrease (0.7%) due to changes in experience
  - Partially offset by a \$10.2 million strain (2.7%) 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 release in 2015, from the decrease in the size of a large claim and hence the reduction of the large claim allowance
  - A strain for the 2017 accident year arising from an increase in the average claim size
- The strain due to actuarial assumptions is due to higher factors to reflect recent experience. The biggest impact is a \$6.6 million strain on the 2010 and earlier accident years, which reflect higher payments per active claim in the tail.



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## ***3 Self-insurer outstanding claims liabilities***

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### **Key points of this section**

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- Our estimate of the net outstanding claims provision as at 30 June 2018 is \$4.7 million, which is \$1.2 million (33.6%) higher than the 30 June 2017 provision of \$3.5 million
  - Our inflated and discounted central estimate, including claims handling expenses, is \$3.7 million. This is \$0.1 million (3.6%) higher than self-insurers' combined central estimate of \$3.6 million
  - The funding ratio is 145%, which is lower than 161% last year
  - Claim incurred numbers exhibited a strong declining trend since 2011 to 85 claims in 2017. 2018 has 97 claims which is higher than 2017 but below 2016 and earlier years
  - The reconciliation of our central estimates, excluding expenses, to our previous valuation as at 30 June 2017 shows a strain on reserves of \$0.7 million, which is 26% of the opening estimates. This is due to an increase in the 2017 accident year due to higher claims development than expected.
-

### 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 June 2018 (\$000s) |                         |                            |                       |                              |                          |                 |                   |
|------------------------------------|-------------------------|----------------------------|-----------------------|------------------------------|--------------------------|-----------------|-------------------|
| Accident year ending 30 Jun        | Gross o/s liability (a) | Reinsurance recoveries (b) | Net o/s liability (c) | Claims handling expenses (d) | Net central estimate (e) | Risk margin (f) | Net Provision (g) |
| Total                              | 3,477                   | 0                          | 3,477                 | 243                          | 3,721                    | 930             | 4,651             |

- 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 25.0%
  - (g) = (e) + (f)

The inflated and discounted net provision at 30 June 2018 is \$4.7 million, which is \$1.2 million (33.6%) higher than the \$3.5 million provision as at 30 June 2017.

#### 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 2018 (\$000s) |                             |                  |                               |                              |  |
|------------------------------------|-----------------------------|------------------|-------------------------------|------------------------------|--|
| Accident year ending 30 Jun        | Self-insurers' estimate (a) | PwC estimate (b) | Difference (\$000s) (b) - (a) | Difference (%) (b) / (a) - 1 |  |
| 2012 & earlier                     | 42                          | 39               | -4                            | -8.8%                        |  |
| 2013                               | 30                          | 13               | -17                           | -55.8%                       |  |
| 2014                               | 50                          | 70               | 20                            | 40.3%                        |  |
| 2015                               | 154                         | 130              | -23                           | -15.1%                       |  |
| 2016                               | 510                         | 502              | -8                            | -1.6%                        |  |
| 2017                               | 1,214                       | 1,193            | -21                           | -1.7%                        |  |
| 2018                               | 1,591                       | 1,774            | 183                           | 11.5%                        |  |
| <b>Total</b>                       | <b>3,590</b>                | <b>3,721</b>     | <b>131</b>                    | <b>3.6%</b>                  |  |

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

This comparison shows that our net central estimate is higher than the self-insurers' estimate by \$0.131 million (3.6%). This is largely due to the 2018 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                  | 5,385                        | 3,721                    | -1,664                        | 145%                         |

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

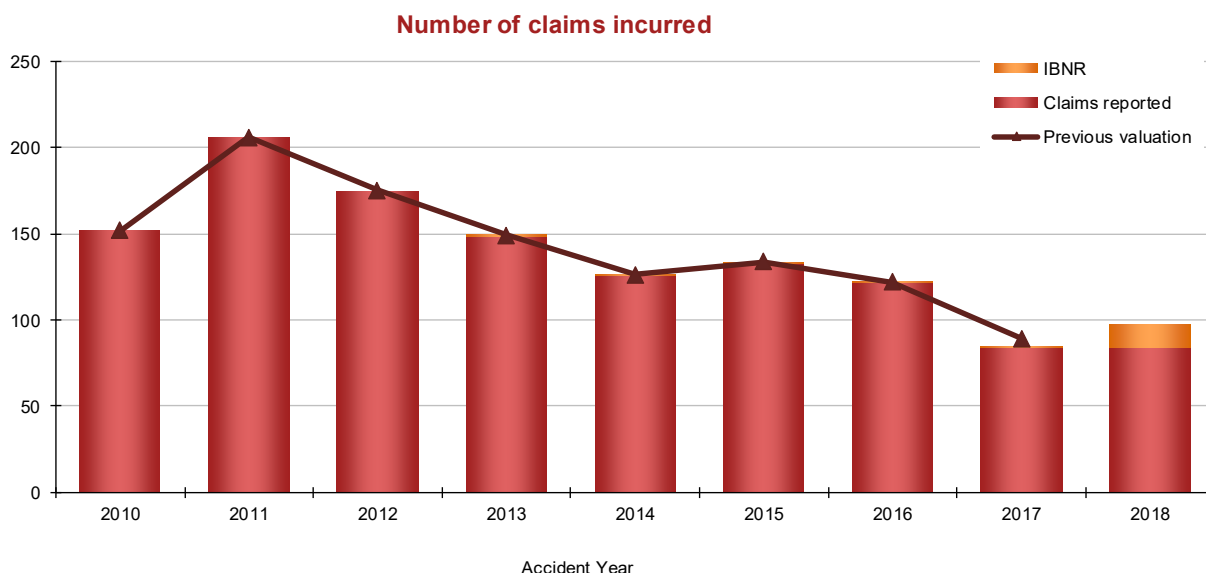
The aggregate funding ratio is 145%, which is lower than 161% as at 30 June 2017. This indicates that the current bank guarantee provisions held by self-insurers in aggregate are likely to be adequate to cover future claims costs.

## 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, 2018 incurred claims of 97 are higher than 2017 but below 2016 and earlier years*



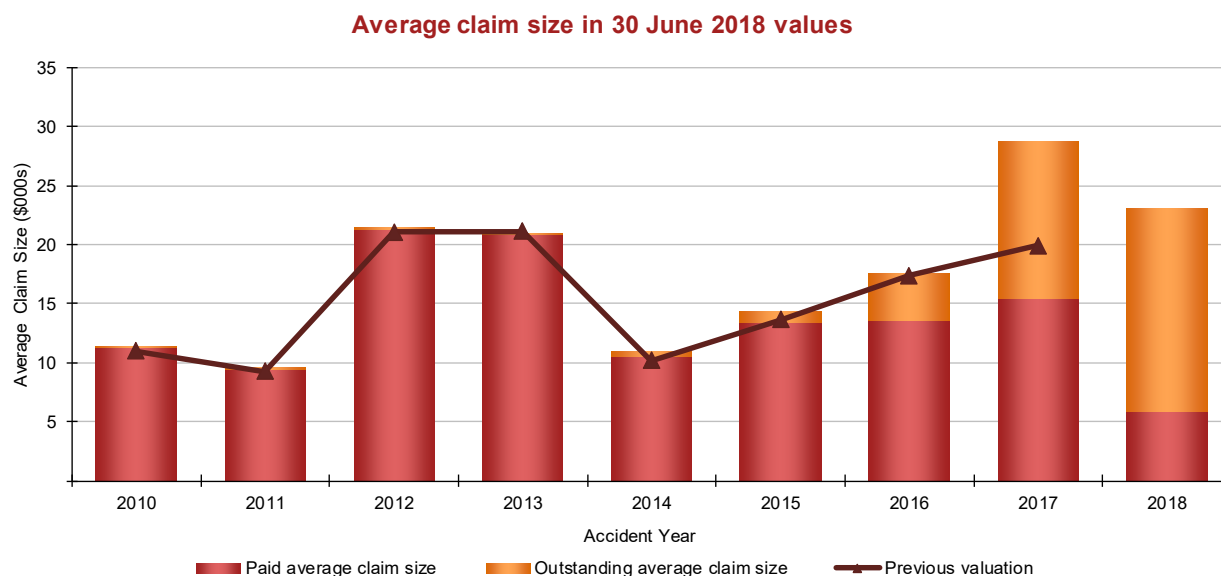
The main points to highlight from this chart are:

- The number of incurred claims peaked in the 2011 accident year at 206 claims
- 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 85, significantly lower than all prior years shown
- The number of claims incurred increased to 97 for the 2018 year, of which 13 are IBNR claims
- The number of claims is similar to estimates at the previous valuation, however 2017 is slightly lower.

### 3.2.2 Gross average claim size

*2018 average claim size is just over \$23,000, \$5,600 (20%) lower than 2017*



The average claim size has been volatile between accident years and there has been no discernible trend. From 2009 to 2016, the average claim size has ranged between \$9,000 and \$21,500, 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 2017 accident year is significantly higher than our previous valuation due to higher than expected payments and high case estimates as at 30 June 2018.

Our estimated average claim size for the 2018 accident year is just over \$23,000, which is \$5,600 (20%) lower than the 2017 accident year.

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 2018 accident year, where a high proportion (74%) of the average claim size consists of the uncertain future estimate.

### 3.3 Actual vs expected claims experience over 2017/18

Actual experience compared to the expected experience over 2017/18 for claims incurred up to 30 June 2017 showed:

- Claim reports were lower than expected (9 actual compared to 12.6 expected)
- Claim payments were significantly higher than expected (\$1.54 million actual compared to \$0.98 million expected).

The expected experience is taken from our previous report dated 13 June 2018. 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 2017.

| Reconciliation of gross actuarial estimates, excluding expenses (\$000s)            |       |      |      |      |      |      |      |                |       |
|-------------------------------------------------------------------------------------|-------|------|------|------|------|------|------|----------------|-------|
| Accident year ending 30 June (\$000s)                                               | 2017  | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 & earlier | Total |
| A. Gross estimates at 30 Jun 2017 (a)                                               | 1,197 | 797  | 361  | 145  | 42   | 33   | 43   | 27             | 2,644 |
| B. Gross payments 1 July 2017 to 30 June 2018                                       | 724   | 323  | 300  | 178  | 0    | 0    | 2    | 17             | 1,544 |
| C. Expenses (b)                                                                     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0              | 0     |
| C. Assumed investment return (b)                                                    | 13    | 10   | 3    | 1    | 1    | 1    | 1    | 0              | 29    |
| D. = A - B + C<br>Updated gross estimates at 30 June 2018                           | 486   | 484  | 64   | -32  | 43   | 34   | 41   | 11             | 1,130 |
| E. Revised gross estimates at 30 June 2018 (c)                                      | 1,115 | 469  | 122  | 66   | 12   | 28   | 6    | 2              | 1,819 |
| F. = E - D<br>Change 1 July 2017 to 30 June 2018                                    | 629   | -15  | 58   | 98   | -31  | -6   | -35  | -9             | 690   |
| G. Proportion of change attributable to                                             |       |      |      |      |      |      |      |                |       |
| Changes in real rates of return                                                     | -16   | -38  | -11  | -6   | -1   | -2   | -1   | 0              | -75   |
| Change in experience                                                                | 224   | 123  | 119  | 133  | -13  | 13   | -17  | 11             | 593   |
| Change in actuarial assumptions                                                     | 420   | -99  | -51  | -29  | -16  | -16  | -17  | -20            | 171   |
| H. Gross amount incurred and outstanding for 2017/18 accident year (c)              |       |      |      |      |      |      |      |                | 1,658 |
| I. = E + H<br>Total gross outstanding liability, excluding expenses at 30 June 2018 |       |      |      |      |      |      |      |                | 3,477 |

- Notes :**
- (a) from section 3.1 of our previous report dated 13 June 2018
  - (b) calculated using 1.6% p.a. being the one year forward rate from section 6 of our previous report dated 13 June 2018
  - (c) from appendix F4.4 of this report.

The table shows that:

- Overall estimates show a strain on reserves of \$0.69 million, which is 26.1% of the opening 30 June 2017 estimates. This strain is made up of:
  - \$0.59 million strain (22.4% of opening estimates) due to changes in experience
  - \$0.17 million strain (6.5%) due to changes in actuarial assumptions
  - \$0.07 million release (2.8%) due to increase in the real rates of return.
- The biggest cause of the strain was the 2017 accident year. The key driver of this result was the higher than expected payments and case estimates at 30 June 2018.

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## ***4 Break-even premium rates***

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### **Key points of this section**

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- Actual premium rates charged by insurers have been similar but slightly below the break-even cost for the three most recent accident years to 2018
  - For 2018, the actual premium rate of 1.9% is lower than the estimated break-even premium rate of 2.1%
  - Our projected break-even premium rate for 2018 is 2.2%, which is above the break-even premium rates and actual premium rates charged over the previous four years, of between 1.8% and 2.1%.
-

## 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.

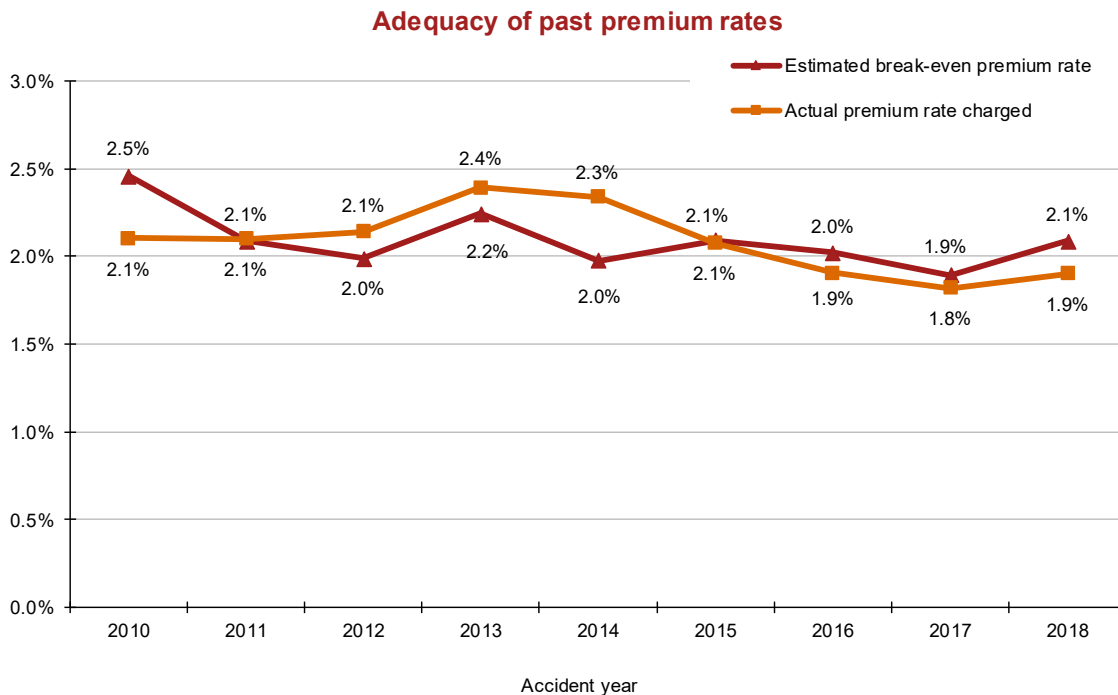
The following table shows our estimated break-even premium rates and the actual rates charged by insurers:

| Accident year | Calculated break even premium      |                                     |                                             |                                           |                                                        |                      |                            | Actual premium                |                                |                                 |         | Difference (break even - actual) |
|---------------|------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|--------------------------------------------------------|----------------------|----------------------------|-------------------------------|--------------------------------|---------------------------------|---------|----------------------------------|
|               | 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 premium (h) (\$000s) | Developed premium (i) (\$000s) | Actual premium rate charged (j) |         |                                  |
| 2018          | 7,115,731                          | 7,521,791                           | 128,097                                     | 5,534                                     | 22,548                                                 | 156,912              | 2.1%                       | 133,760                       | 143,092                        | 1.9%                            | -13,820 |                                  |
| 2017          | 7,282,923                          | 7,441,415                           | 115,098                                     | 4,489                                     | 20,653                                                 | 140,809              | 1.9%                       | 131,723                       | 135,462                        | 1.8%                            | -5,347  |                                  |
| 2016          | 6,845,215                          | 6,884,745                           | 114,169                                     | 4,163                                     | 20,086                                                 | 139,092              | 2.0%                       | 131,222                       | 131,222                        | 1.9%                            | -7,870  |                                  |
| 2015          | 6,594,270                          | 6,594,270                           | 112,262                                     | 4,558                                     | 20,288                                                 | 137,948              | 2.1%                       | 136,945                       | 136,945                        | 2.1%                            | -1,003  |                                  |
| 2014          | 5,929,595                          | 5,929,595                           | 94,595                                      | 4,775                                     | 17,098                                                 | 117,200              | 2.0%                       | 138,725                       | 138,725                        | 2.3%                            | 21,524  |                                  |
| 2013          | 5,199,017                          | 5,199,017                           | 97,232                                      | 3,697                                     | 15,016                                                 | 116,746              | 2.2%                       | 124,326                       | 124,326                        | 2.4%                            | 7,580   |                                  |
| 2012          | 4,633,724                          | 4,633,724                           | 74,233                                      | 2,864                                     | 14,015                                                 | 92,177               | 2.0%                       | 99,113                        | 99,113                         | 2.1%                            | 6,936   |                                  |
| 2011          | 4,138,004                          | 4,138,004                           | 70,554                                      | 2,863                                     | 11,998                                                 | 86,356               | 2.1%                       | 86,936                        | 86,936                         | 2.1%                            | 580     |                                  |
| 2010          | 3,576,580                          | 3,576,580                           | 73,860                                      | 2,624                                     | 10,680                                                 | 87,904               | 2.5%                       | 75,252                        | 75,252                         | 2.1%                            | -12,652 |                                  |

- 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) x (1+ one year historical interest rate) ^ (3/12) to allow for the fact that premiums are on average 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)

We estimate that the 2018 developed premiums charged of \$143.1 million were \$13.8 million (8.8%) lower than the estimated break even premiums of \$156.9 million.

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, 2010 continues 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 2010 the actual premium rate charged by insurers of 2.1% was significantly lower than the estimated break-even premium rate of 2.5%
- The actual premium rate charged from 2010 to 2015, ranges between 2.1% 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. The actual premium rate charged was 1.9% in 2016, 1.8% in 2017 and 1.9% in 2018
- With hindsight, the actual premium rate charged was more than sufficient to cover the break-even cost for accident years 2012 to 2014, were similar to estimates of break-even rates in 2011 and 2015, but less than sufficient for all other years
- In the previous valuation there was an estimated 9.8% increase required in the best estimate premium rate from 2017 to 2018 (1.84% to 2.02%). This is higher than the actual increase applied by the insurers of 4.5% from the actual premium rates charged of 1.82% in 2017 to 1.90% in 2018.

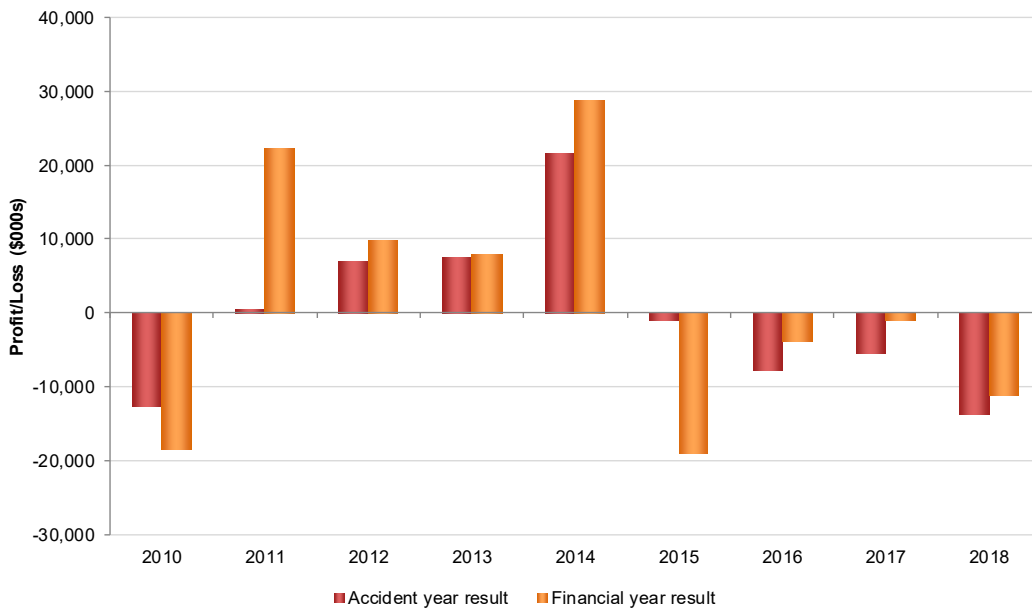
Historically, the actual rate has fluctuated around the estimated break-even premium rate. However, we would expect the premium charged by insurers to be consistently higher than the break-even premium, to incorporate an appropriate profit margin. Insurers' will likely use a higher discount rate than 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.

**Insurer performance by accident year and financial year**



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 2010 and 2015 to 2018 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)<br>(\$000s) | Discounted gross incurred cost (b)<br>(\$000s) | Expenses (c)<br>(\$000s) | Premium (d)<br>(\$000s) | Calculated premium rate (e) |
|-------------------|------------------------------|------------------------------------------------|--------------------------|-------------------------|-----------------------------|
| 2019              | 7,612,053                    | 131,687                                        | 33,513                   | 165,975                 | 2.2%                        |
| 2018              | 7,521,791                    | 128,097                                        | 28,082                   | 156,912                 | 2.1%                        |
| 2017              | 7,441,415                    | 115,098                                        | 25,142                   | 140,809                 | 1.9%                        |
| 2016              | 6,884,745                    | 114,169                                        | 24,248                   | 139,092                 | 2.0%                        |
| 2015              | 6,594,270                    | 112,262                                        | 24,846                   | 137,948                 | 2.1%                        |
| 2014              | 5,929,595                    | 94,595                                         | 21,873                   | 117,200                 | 2.0%                        |

- Notes:**
- (a) 2018 = developed waggeroll for 2017 x (1 + 1.2%)
  - (b) 2018 = adopted claims incurred x adopted average claim size in 30 June 2018 values x (1 + wage inflation) x (1 + superimposed inflation) x inflation/discounting factor  
2,417 x 54,049 x (1 + 1.2%) x (1 + 2.7%) x 0.9704
  - (c) = (b) / (1 – commission rate (3.7%) – other expense rate (16.6%)) – (b)
  - (d) = (b) / (1 – commission rate (3.7%) – other expense rate (16.6%)) x (1 + interest rate (1.9%)) ^ (3/12) to allow for the fact that premiums are received on average 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 1.20%, 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 2018 values, commission rate and other expense rate) are shown in Appendix H.

The adopted average claim size includes an allowance for a 2.4% reduction for the 2015 legislative changes (including death benefit increases). See Appendix B for more details.

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# ***5 Data and methods***

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## **Key points of this section**

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- 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 break-even premium rate are the same as those used for the previous valuation.
-

## 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.

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 2018
  - *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.

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 Allianz purchased it.

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 broadly consistent.

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

## ***5.3 Data enhancements and additional data***

To enhance the quality of future reviews we suggest the following data enhancements:

- For self-insurers, extend the number of separate historical accident years on the Form B. This will help us understand if there has been any movement for underwriting years older than five years

- For report 4, split the total payments triangle into different payment types. Currently we estimate what proportion of payments relate to each payment type based on the proportions paid in development year's seven to nine.

## ***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 the reinsurance recovery information provided by insurers on large claims.

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 2018. We have used the PPCI method for our analysis and compared this to projected case estimates based on past development of case estimates for both insurers and self-insurers. For accident years where the PPCI result was insufficient, we have adopted the projected case estimates (PCE) or for older years, we have adopted a blend of PPCI and projected case estimates.

The PPCI method is defined above.

#### **Projected case estimates method**

We used details of case estimates established at the end of each accounting period, subdivided by accident period. We brought each of these estimates to current values and examined them in comparison with payments made in the subsequent accounting period and the case estimates established at the end of the period (also in current values). Using this we derived an average pattern of the extent to which past case estimates had proven to be too high or too low in relation to the claim payments subsequently made. We used this pattern to

project the future development of the case estimates held at 30 June 2018, and to project the future claim payments corresponding to these estimates.

We then used the same method applied to insurers to calculate the future claim payments, allowing for (a) to (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 2018/19, we take the following steps:

- a From historical data, estimate the incurred number of claims using average claim frequency and projected wages, 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 2017/18 developed wages inflated by one year. Also, allow for the timing adjustment, as premiums will be received one quarter after policy commencement.

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# 6 *Assumptions*

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## **Key points of this section**

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- The real rate of return has increased for all future years since the previous valuation, predominantly due to a decrease in the inflation rate across all future years.
  - Overall, the adopted superimposed inflation rate has increased since the previous valuation, from 1.9% p.a. to 2.7% 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 2016 onwards. In total, the commission and other expense rates make up 20.2% of the break-even premium rate, which is higher than the 19.2% adopted for the 30 June 2017 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 ahead  | Interest rate | Inflation rate | Real rate   |             |
|--------------|---------------|----------------|-------------|-------------|
|              | 30 Jun 2018   | 30 Jun 2018    | 30 Jun 2018 | 30 Jun 2017 |
| 1            | 1.89%         | 1.20%          | 0.69%       | -0.13%      |
| 2            | 2.09%         | 1.70%          | 0.39%       | -0.78%      |
| 3            | 2.37%         | 2.30%          | 0.07%       | -0.61%      |
| 4            | 2.61%         | 2.80%          | -0.19%      | -0.71%      |
| 5            | 2.79%         | 2.72%          | 0.07%       | -0.40%      |
| 6            | 2.92%         | 2.64%          | 0.28%       | -0.17%      |
| 7            | 2.99%         | 2.56%          | 0.44%       | 0.00%       |
| 8            | 3.02%         | 2.47%          | 0.54%       | 0.11%       |
| 9            | 3.04%         | 2.39%          | 0.64%       | 0.20%       |
| 10           | 3.09%         | 2.31%          | 0.78%       | 0.32%       |
| 11           | 3.18%         | 2.23%          | 0.95%       | 0.48%       |
| 12           | 3.27%         | 2.15%          | 1.12%       | 0.67%       |
| 13           | 3.34%         | 2.07%          | 1.28%       | 0.91%       |
| 14           | 3.41%         | 1.99%          | 1.42%       | 1.19%       |
| 15           | 3.47%         | 1.91%          | 1.56%       | 1.50%       |
| 16           | 3.49%         | 1.82%          | 1.67%       | 1.69%       |
| 17 & onwards | 3.49%         | 1.74%          | 1.75%       | 1.75%       |

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  $((1 + 1.89\%)^{0.25} - 1) = 0.47\%$  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.

## 6.2 Superimposed inflation

The superimposed assumptions for each payment category are as follows:

| Superimposed Inflation |                 |                      |                                                                              |                          |        |                                       |       |  |
|------------------------|-----------------|----------------------|------------------------------------------------------------------------------|--------------------------|--------|---------------------------------------|-------|--|
|                        | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), | Other Goods And Services | Legals | Redemptions And Non-Economic Lump Sum | Total |  |
| 30 Jun 18              | 2.4%            | 4.5%                 | 2.4%                                                                         | 1.2%                     | 4.0%   | 2.5%                                  | 2.7%  |  |
| 30 Jun 17              | 2.1%            | 2.1%                 | 1.0%                                                                         | 0.0%                     | 4.4%   | 1.6%                                  | 1.9%  |  |

In total, our superimposed inflation estimate of 2.7% p.a. is 0.8% more than the 1.9% 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 Legals.

Due to the volatility for redemptions and non-economic lump sums, we excluded claims with cumulative payments over \$1 million when calculating the superimposed inflation assumption. This approach reduces the volatility, in order to better assess the underlying superimposed inflation rate for the payment group.

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

We had previously adopted a 0% superimposed inflation rate for payment categories, which had a calculated negative superimposed inflation rate. There are no categories with a negative superimposed rate this time.

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.

### *Commission and other expenses<sup>1</sup>*

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 a two year average for the other expense rate, as a proportion of written premium, as follows:

| (\$000s)                  | Underwriting year |         |         |         |         | Adopted |
|---------------------------|-------------------|---------|---------|---------|---------|---------|
|                           | 2018              | 2017    | 2016    | 2015    | 2014    |         |
| Gross written premium (a) | 135,842           | 134,286 | 114,332 | 140,232 | 156,328 |         |
| Earned premium (b)        | 146,280           | 126,442 | 119,514 | 141,354 | 137,054 |         |
| Commission paid (c)       | 5,534             | 4,489   | 4,163   | 4,558   | 4,775   |         |
| Other expenses (d)        | 22,760            | 20,821  | 20,282  | 20,537  | 17,314  |         |
| Commission rate (e)       | 3.8%              | 3.6%    | 3.5%    | 3.2%    | 3.5%    | 3.7%    |
| Other expense rate (f)    | 16.8%             | 15.5%   | 17.7%   | 14.6%   | 11.1%   | 16.6%   |

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

<sup>1</sup> Other expenses include claims handling expenses

$$(e) = (c) / (b)$$

$$(f) = (d) / (a)$$

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 increased from 3.4% to 3.7%, and the other expense rate has increased from 15.9% to 16.6%. The increase in the other expense rate is due to high expense ratios for 2016 and 2018.

In total, the commission and other expense rate make up 20.2% of the break-even premium rate, which is higher than the 19.2% adopted for the 30 June 2017 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 7% 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.

## **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. We have also allowed for a 0.4% increase due to higher death benefits. Therefore, the combined allowance included in this valuation is a 2.4% reduction. This has been allowed for in our calculations of the outstanding claims liabilities as at 30 June 2018 for the 2015/16 to 2017/18 accident years and the future costs for the 2018/19 accident year. There is no allowance for the

2015 legislative changes in the outstanding claims liability as at 30 June 2018 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 no unintended consequences.

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# 7 *Uncertainty*

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## **Key points of this section**

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- A sufficient risk margin to increase the level of reserving adequacy from 50% to 75% is 12.1% for insurers, which is lower than the 14.5% adopted in the 2017 valuation, and 25.0% for self-insurers, which is higher than the 23.0% adopted in the 2017 valuation. The risk margin is higher for self-insurers than 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***

This valuation is not required to comply with any accounting standards. However, we have considered the requirements of Accounting Standard AASB 1023 on General Insurance Contracts which insurers are required to comply with for their annual valuation.

AASB1023 requires the determination of a central estimate of the present value of the expected future payments for claims incurred with an additional prudential margin to allow for the inherent uncertainty in the central estimate.



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.

Determination of a 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 20% 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 was reduced for insurers from 25% in the previous valuation due to a reduction in the assumed independent risk following an analysis of past payments.

The risk margin applied for self-insurers increased from 23% to 25% as for this valuation we set the risk margin subject to a minimum of half the co-efficient of variation in line with the 'APRA Risk Margin Analysis' paper.

The coefficient of variation calculated as described above is taken as 20% for insurers and 50% for self-insurers. This leads to the following prudential margins.

|                             | Level of sufficiency and risk margins |        |        |
|-----------------------------|---------------------------------------|--------|--------|
| Level of sufficiency        | 75%                                   | 80%    | 85%    |
| Risk margin (insurers)      | 12.07%                                | 15.84% | 20.40% |
| Risk margin (self-insurers) | 25.00%                                | 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 - sensitivity analysis |                                         |                             |
|---------------------------------------------|-----------------------------------------|-----------------------------|
| Assumption varied                           | Variation                               | % Change in total provision |
| Future interest rates                       | 1% increase                             | -3.37%                      |
|                                             | 1% decrease                             | 3.66%                       |
| Future inflation rates                      | 1% increase                             | 3.64%                       |
|                                             | 1% decrease                             | -3.41%                      |
| Adopted claim reporting rates               | DY0 rate decreased from 12.15% to 6.08% | -1.81%                      |
| Superimposed inflation                      | 1% increase                             | 3.49%                       |
|                                             | 1% decrease                             | -3.26%                      |
| PPCI and PPAC values                        | 10% increase                            | 9.19%                       |
| Finalisation rate                           | 10% decrease                            | 9.69%                       |

The increase in PPCI and PPAC factors illustrates a potential impact of an increase in the average claim size either due to claims remaining on benefits for longer or an increase in the frequency of large claims. The decrease in the finalisation rate illustrates a potential impact if claims remain on benefits for longer.

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

| NT WorkSafe self-insurers - sensitivity analysis |                             |                             |
|--------------------------------------------------|-----------------------------|-----------------------------|
| Assumption Varied                                | Variation                   | % Change in total provision |
| Future interest rates                            | 1% increase                 | -1.52%                      |
|                                                  | 1% decrease                 | 1.58%                       |
| Future inflation rates                           | 1% increase                 | 1.57%                       |
|                                                  | 1% decrease                 | -1.54%                      |
| Incurred claims                                  | 10% increase in IBNR claims | 0.44%                       |
|                                                  | 10% decrease in IBNR claims | -0.44%                      |
| Superimposed inflation                           | 1% increase                 | 0.87%                       |
|                                                  | 1% decrease                 | -0.85%                      |

The percentage change in the outstanding claim provisions as at 30 June 2018 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 have been driven by the Inpex project and the associated contracts. Up to and including the 2017 year, the number of claims incurred and claims cost have not reflected the increase in wages, causing the claim frequency and premium rate to reduce. In 2018, the average claim size and incurred cost increased. We understand that over the 2018 financial year the construction phase wound down with production starting in October 2018. Therefore, the number of workers is expected to 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 and may be increasing the 2018 average claim size as there are fewer jobs for people to return to.

- **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. 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, particularly as it relates to the high average claim size for insurers for the 2018 accident year due to higher payments and outstanding case estimates to 30 June 2018.

- **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 increased slightly 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 to 2017/18

accident years and the future costs for the 2018/19 accident year. In separate advice, PwC estimated that there would be a 2.8% reduction in respect of the most significant benefit changes (excluding death benefit increases). In this valuation, we have also allowed for the increase in death and funeral benefits, so the net reduction is 2.4%. 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 no unintended consequences. See Appendix B6 for more information.

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# *Appendices*

|            |                                                       |    |
|------------|-------------------------------------------------------|----|
| Appendix A | Detailed data description                             | 43 |
| A 1        | Data supplied by NT WorkSafe                          | 43 |
| A 2        | Data quality                                          | 47 |
| Appendix B | Assumptions                                           | 49 |
| B 1        | Financial assumptions                                 | 49 |
| B 2        | Superimposed inflation                                | 51 |
| B 3        | Expenses                                              | 53 |
| B 4        | Reinsurance                                           | 55 |
| B 5        | GST                                                   | 56 |
| B 6        | 2015 legislative amendments                           | 56 |
| B 7        | Wage and premium development factors                  | 58 |
| Appendix C | Insurer outstanding claim valuation                   | 59 |
| C 1        | Data used in the valuation                            | 59 |
| C 2        | Actual and projected claims experience during 2017/18 | 61 |
| C 3        | Analysis and projection models                        | 62 |
| C 4        | Adopted estimates of outstanding claims               | 72 |
| Appendix D | Insurer claims statistics                             | 76 |
| D 1        | Number of claims incurred                             | 76 |
| D 2        | Gross average claim size                              | 78 |
| D 3        | Gross incurred cost                                   | 79 |
| D 4        | Gross loss ratios                                     | 80 |
| D 5        | Payment per claim incurred                            | 81 |
| Appendix E | Insurer financial year claims experience              | 83 |
| E 1        | Aggregate claims experience during 2017/18            | 83 |
| E 2        | Analysis by payment group                             | 87 |
| Appendix F | Self-insurer outstanding claims valuation             | 90 |

|             |                                                       |     |
|-------------|-------------------------------------------------------|-----|
| Uncertainty |                                                       | PwC |
| F 1         | Data used in the valuation                            | 90  |
| F 2         | Actual and projected claims experience during 2017/18 | 91  |
| F 3         | Analysis and projection models                        | 92  |
| F 4         | Adopted estimates of outstanding claims               | 95  |
| Appendix G  | Self-insurer claims statistics                        | 99  |
| G 1         | Number of claims incurred                             | 99  |
| G 2         | Gross average claim size                              | 100 |
| G 3         | Incurred cost                                         | 101 |
| G 4         | Payment per claim incurred                            | 101 |
| Appendix H  | Insurer break-even premium rate                       | 103 |
| H 1         | Calculation of discounted gross incurred cost         | 103 |
| H 2         | Estimated historic break-even premium rate            | 105 |
| H 3         | Calculation of break-even premium rate for 2018/19    | 105 |
| H 4         | Historical rates by industry                          | 107 |
| Appendix I  | Glossary                                              | 110 |

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# ***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.

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. For this valuation, the absolute difference was 0.25%.

## *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 2009. 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.



### ***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***

Insurers 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 a shortened version of 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 2018 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 minor queries with some 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 year | Payments (\$000s) |                |               |                | Reports       |               |             |                |  |  |
|---------------|-------------------|----------------|---------------|----------------|---------------|---------------|-------------|----------------|--|--|
|               | Form B            | WIMS           | Difference    | Difference (%) | Form B        | WIMS          | Difference  | Difference (%) |  |  |
| 2018          | 27,381            | 26,874         | -508          | -1.9%          | 2,151         | 2,105         | -46         | -2.1%          |  |  |
| 2017          | 55,572            | 55,319         | -253          | -0.5%          | 2,390         | 2,349         | -41         | -1.7%          |  |  |
| 2016          | 71,667            | 70,916         | -751          | -1.0%          | 2,520         | 2,480         | -40         | -1.6%          |  |  |
| 2015          | 80,845            | 80,193         | -652          | -0.8%          | 2,642         | 2,633         | -9          | -0.3%          |  |  |
| 2014          | 78,638            | 79,856         | 1,218         | 1.5%           | 2,994         | 2,773         | -221        | -7.4%          |  |  |
| 2013          | 82,350            | 83,534         | 1,184         | 1.4%           | 2,700         | 2,801         | 101         | 3.8%           |  |  |
| 2012          | 72,765            | 71,245         | -1,520        | -2.1%          | 2,530         | 2,642         | 112         | 4.4%           |  |  |
| 2011          | 70,920            | 72,066         | 1,146         | 1.6%           | 2,624         | 2,709         | 85          | 3.2%           |  |  |
| 2010          | 73,634            | 73,678         | 43            | 0.1%           | 2,739         | 2,520         | -219        | -8.0%          |  |  |
| 2009          | 85,474            | 84,026         | -1,448        | -1.7%          | 2,478         | 2,608         | 130         | 5.2%           |  |  |
| <b>Total</b>  | <b>699,246</b>    | <b>697,706</b> | <b>-1,540</b> | <b>-0.2%</b>   | <b>25,767</b> | <b>25,620</b> | <b>-147</b> | <b>-0.6%</b>   |  |  |

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

This is the fourth year for which self-insurers have completed Form B. Previously they completed 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 year  | Payments (\$000s) |              |            |                | Reports   |           |            |                |  |  |
|----------------|-------------------|--------------|------------|----------------|-----------|-----------|------------|----------------|--|--|
|                | Form B            | WIMS         | Difference | Difference (%) | Form B    | WIMS      | Difference | Difference (%) |  |  |
| 2018           | 551               | 573          | 22         | 3.9%           | 84        | 84        | 0          | 0.0%           |  |  |
| 2017           | 706               | 724          | 19         | 2.7%           | 6         | 8         | 2          | 33.3%          |  |  |
| 2016           | 328               | 323          | -5         | -1.4%          | 1         | 1         | 0          | 0.0%           |  |  |
| 2015           | 299               | 300          | 1          | 0.3%           | 0         | 0         | 0          | 0.0%           |  |  |
| 2014           | 177               | 178          | 1          | 0.4%           | 0         | 0         | 0          | 0.0%           |  |  |
| 2013           | 0                 | 0            | 0          | 0.0%           | 0         | 0         | 0          | 0.0%           |  |  |
| 2012 & earlier | 8                 | 19           | 11         | 139.7%         | 0         | 0         | 0          | 0.0%           |  |  |
| <b>Total</b>   | <b>2,068</b>      | <b>2,117</b> | <b>49</b>  | <b>2.4%</b>    | <b>91</b> | <b>93</b> | <b>2</b>   | <b>2.2%</b>    |  |  |

The information from Form B for the 2018 financial year reconciles fairly well with the WIMS.

We relied upon the WIMS data for this valuation as per previous valuations.

# Appendix B Assumptions

## B 1 Financial assumptions

### Future inflation and interest rates

| Years ahead  | Interest rate<br>30 Jun 2018 | Inflation rate<br>30 Jun 2018 | Real rate<br>30 Jun 2018 | 30 Jun 2017 |
|--------------|------------------------------|-------------------------------|--------------------------|-------------|
| 1            | 1.89%                        | 1.20%                         | 0.69%                    | -0.13%      |
| 2            | 2.09%                        | 1.70%                         | 0.39%                    | -0.78%      |
| 3            | 2.37%                        | 2.30%                         | 0.07%                    | -0.61%      |
| 4            | 2.61%                        | 2.80%                         | -0.19%                   | -0.71%      |
| 5            | 2.79%                        | 2.72%                         | 0.07%                    | -0.40%      |
| 6            | 2.92%                        | 2.64%                         | 0.28%                    | -0.17%      |
| 7            | 2.99%                        | 2.56%                         | 0.44%                    | 0.00%       |
| 8            | 3.02%                        | 2.47%                         | 0.54%                    | 0.11%       |
| 9            | 3.04%                        | 2.39%                         | 0.64%                    | 0.20%       |
| 10           | 3.09%                        | 2.31%                         | 0.78%                    | 0.32%       |
| 11           | 3.18%                        | 2.23%                         | 0.95%                    | 0.48%       |
| 12           | 3.27%                        | 2.15%                         | 1.12%                    | 0.67%       |
| 13           | 3.34%                        | 2.07%                         | 1.28%                    | 0.91%       |
| 14           | 3.41%                        | 1.99%                         | 1.42%                    | 1.19%       |
| 15           | 3.47%                        | 1.91%                         | 1.56%                    | 1.50%       |
| 16           | 3.49%                        | 1.82%                         | 1.67%                    | 1.69%       |
| 17 & onwards | 3.49%                        | 1.74%                         | 1.75%                    | 1.75%       |

The 30 June 2018 real rates are higher than the 30 June 2017 rates for all future years, which decreases the liabilities. This is predominantly due to a decrease in our estimate of future wage inflation compared to our 30 June 2017 valuation.

The real rate is estimated to be negative, i.e. interest earned is less than wage inflation, for the fourth projection years and positive for all other projection years. In our previous valuation, the first six projection years had real rates of return, which were negative.

The interest rate for one quarter of the first year ahead  $(((1 + 1.89\%)^{\wedge} 0.25 - 1) = 0.47\%)$  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 2018.

The interest rates are obtained by fitting a curve to the 30 June 2018 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 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, consistent with the previous valuation. Adopting based on Deloitte Access Economics forecast for the first four projection years i.e. 1.2% inflation rate for 2018 (i.e. one year ahead), up to 2.8% 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:

| Year to<br>30-Jun | Mid<br>Quarter<br>AWE | End<br>Quarter<br>AWE | Claims escalation factors |                 |                       |
|-------------------|-----------------------|-----------------------|---------------------------|-----------------|-----------------------|
|                   |                       |                       | % Change<br>p.a.          | For<br>payments | For case<br>estimates |
| 2004              | 934.7                 | 942.1                 |                           | 1.826           | 1.778                 |
| 2005              | 1,000.2               | 1,003.8               | 6.5%                      | 1.720           | 1.669                 |
| 2006              | 1,016.0               | 1,016.9               | 1.3%                      | 1.653           | 1.647                 |
| 2007              | 1,043.0               | 1,052.0               | 3.4%                      | 1.629           | 1.592                 |
| 2008              | 1,107.4               | 1,114.0               | 5.9%                      | 1.544           | 1.503                 |
| 2009              | 1,150.9               | 1,158.6               | 4.0%                      | 1.473           | 1.446                 |
| 2010              | 1,224.2               | 1,235.3               | 6.6%                      | 1.403           | 1.356                 |
| 2011              | 1,289.3               | 1,311.1               | 6.1%                      | 1.318           | 1.277                 |
| 2012              | 1,408.6               | 1,410.8               | 7.6%                      | 1.215           | 1.187                 |
| 2013              | 1,449.3               | 1,449.2               | 2.7%                      | 1.173           | 1.156                 |
| 2014              | 1,417.2               | 1,426.3               | -1.6%                     | 1.166           | 1.174                 |
| 2015              | 1,513.5               | 1,523.3               | 6.8%                      | 1.138           | 1.100                 |
| 2016              | 1,569.7               | 1,586.6               | 4.2%                      | 1.078           | 1.056                 |
| 2017              | 1,616.5               | 1,624.3               | 2.4%                      | 1.033           | 1.031                 |
| 2018              | 1,668.5               | 1,674.9               | 3.1%                      | 1.014           | 1.000                 |

## B 2 Superimposed inflation

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

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

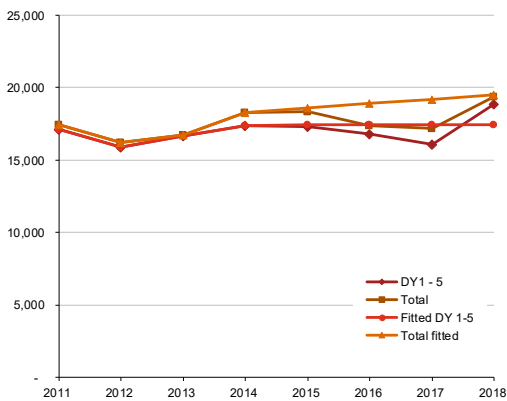
The recent trends in real growth, i.e. superimposed inflation, are shown in the charts below.

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

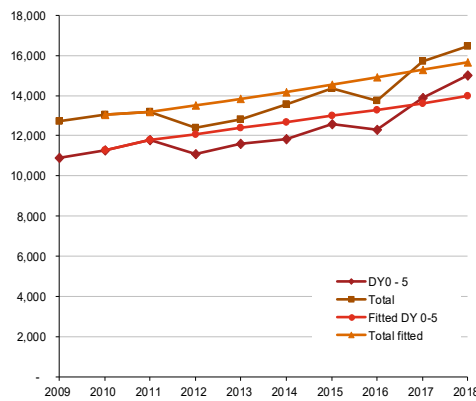
| Superimposed Inflation - averaging periods (years) |                 |                      |                                                                                    |                          |        |                                       |  |
|----------------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------------|--------------------------|--------|---------------------------------------|--|
|                                                    | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death | Other Goods And Services | Legals | Redemptions And Non-Economic Lump Sum |  |
| PPAC/PPCF                                          | 5               | 4                    | 5                                                                                  | 5                        | 6      | 5                                     |  |
| PPCI                                               | 8               | 8                    | 9                                                                                  | 5                        | 9      | 5                                     |  |

### Weekly benefits

#### PPAC

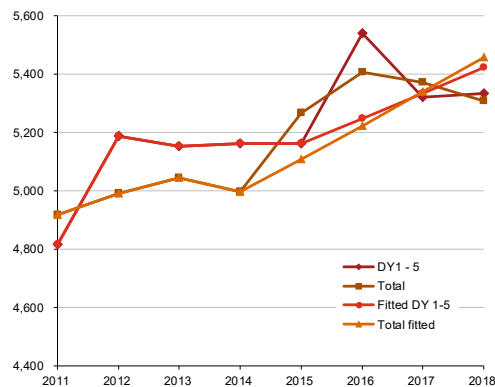


#### PPCI

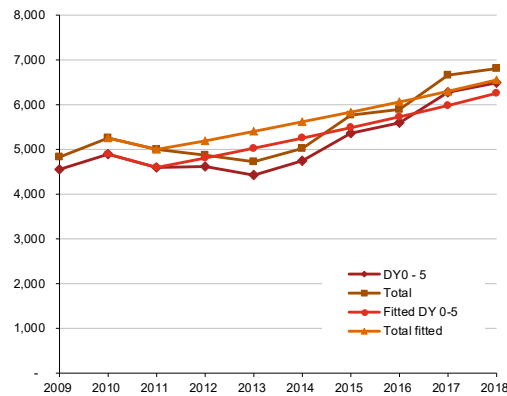


### Medical and hospital

#### PPAC

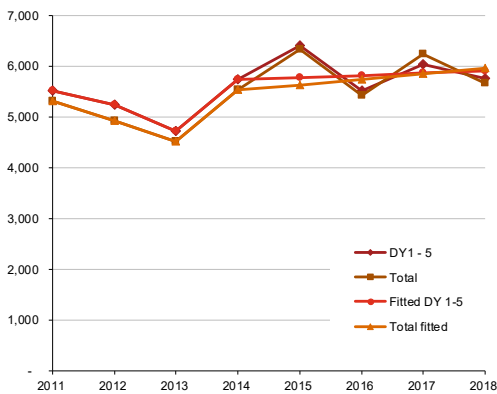


#### PPCI

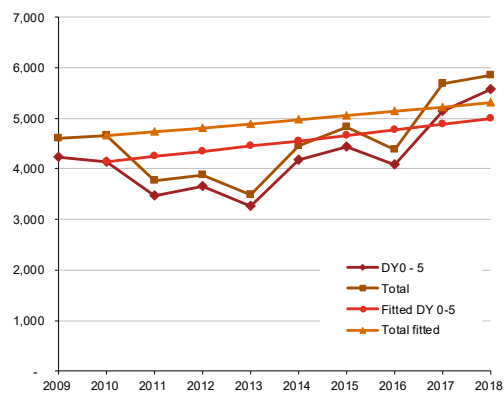


*Allied health, vocational rehabilitation, non-compensation other and death*

**PPAC**

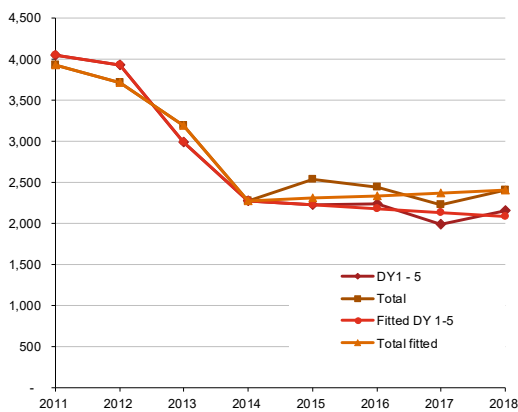


**PPCI**

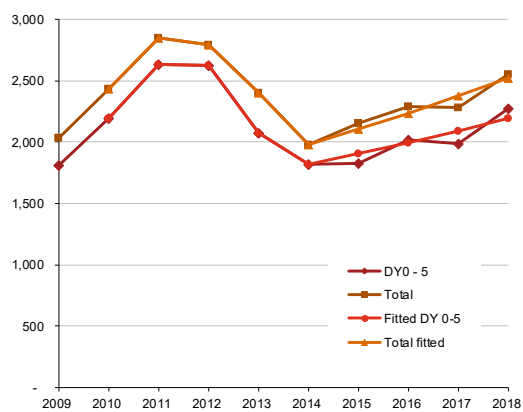


*Other goods and services*

**PPAC**

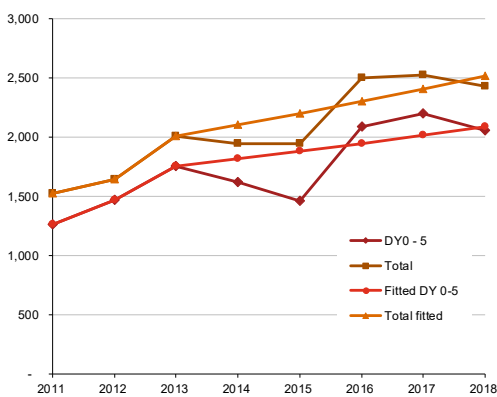


**PPCI**

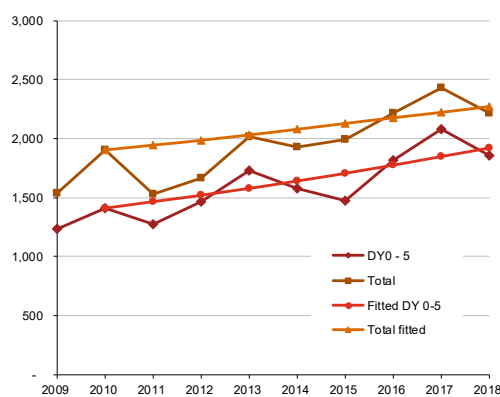


*Legal*

**PPCF**



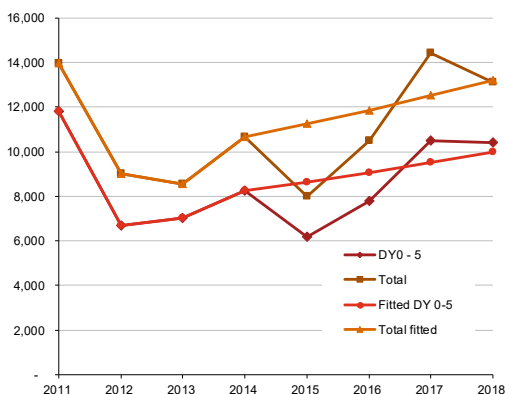
**PPCI**



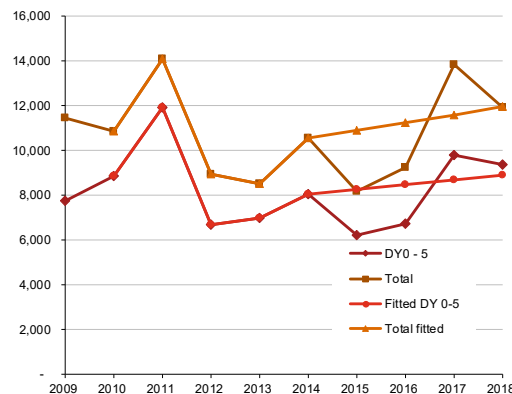


## Redemptions and non-economic lump sum

### PPCF



### PPCI



The above graphs for *Redemptions and Non-Economic Lump Sum* payment group we have excluded claims with cumulative payments to date over \$1 million. 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 Inflation |                 |                      |                                                                                    |                          |        |                                       |       |
|------------------------|-----------------|----------------------|------------------------------------------------------------------------------------|--------------------------|--------|---------------------------------------|-------|
|                        | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death | Other Goods And Services | Legals | Redemptions And Non-Economic Lump Sum | Total |
| PPAC/PPCF              | 2.4%            | 4.5%                 | 2.4%                                                                               | 0.0%                     | 4.0%   | 2.5%                                  |       |
| PPCI                   | 2.4%            | 4.5%                 | 2.4%                                                                               | 4.7%                     | 4.0%   | 2.5%                                  |       |
| 30 Jun 18              | 2.4%            | 4.5%                 | 2.4%                                                                               | 1.2%                     | 4.0%   | 2.5%                                  | 2.7%  |
| 30 Jun 17              | 2.1%            | 2.1%                 | 1.0%                                                                               | 0.0%                     | 4.4%   | 1.6%                                  | 1.9%  |

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, except for other goods and services, we adopted the PPCI superimposed inflation for the PPAC/PPCF methods.

In total, our superimposed inflation estimate of 2.7% p.a. is a 0.8% increase on the 1.9% p.a. adopted for the previous valuation. Our estimate of superimposed inflation is higher than the previous valuation for all payment type, with the exception of Legals.

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

## B 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:

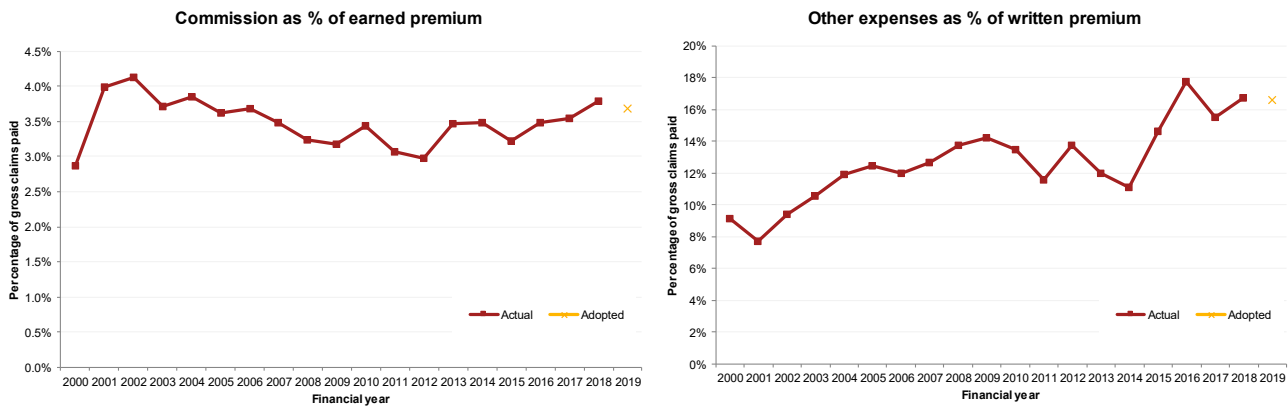
- 6% of projected future claim payments for insurers

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

These are the same as the previous valuation.

**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 2012, it increased to 3.5% in 2013 and has been stable since. 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 two 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 |         |         |         |         |         |
|---------------------------|-------------------|---------|---------|---------|---------|---------|
|                           | 2018              | 2017    | 2016    | 2015    | 2014    | Adopted |
| Gross written premium (a) | 135,842           | 134,286 | 114,332 | 140,232 | 156,328 |         |
| Earned premium (b)        | 146,280           | 126,442 | 119,514 | 141,354 | 137,054 |         |
| Commission paid (c)       | 5,534             | 4,489   | 4,163   | 4,558   | 4,775   |         |
| Other expenses (d)        | 22,760            | 20,821  | 20,282  | 20,537  | 17,314  |         |
| Commission rate (e)       | 3.8%              | 3.6%    | 3.5%    | 3.2%    | 3.5%    | 3.7%    |
| Other expense rate (f)    | 16.8%             | 15.5%   | 17.7%   | 14.6%   | 11.1%   | 16.6%   |

**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 determine 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 increased from 3.4% to 3.7%, and the adopted other expense rate has increased from 15.9% to 16.6%. The increases are due to higher rates in 2018 than historical years.

The actual 2018 commission and other expenses rates are higher than we had adopted in our projections last year.

In total, the commission and other expense rate make up 20.2% of the break-even premium rate, which is higher than the 19.2% adopted for the 30 June 2017 valuation.

## ***B 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 7% of all claims, which is less than the 8% 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.

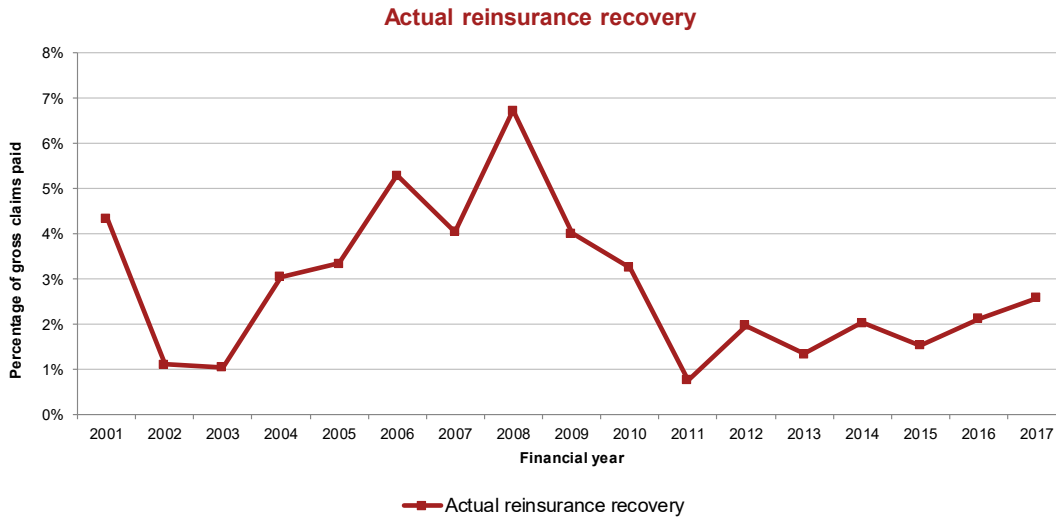
We reviewed the self-insurers' reports and as none of them allowed for any reinsurance recoveries, we have not allowed for any reinsurance recoveries for self-insurers.

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.

| Financial year | Gross claims paid (a) (\$000s) | Reinsurance recoveries (b) (\$000s) | Reinsurance 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%                         |
| 2018           | 121,156                        | 5,542                               | 4.6%                         |

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

(c) = (b) / (a)



## ***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.

Our 2014 report, estimated cost of the two first changes above as a 2.8% reduction. In this valuation, we have also allowed for the increase in death and funeral benefits, so the net reduction is 2.4%. This has been allowed for in our calculations of the outstanding claims liabilities as at 30 June 2018 for the 2015/16 to 2017/18 accident years and the future costs for the 2018/19 accident year. There is no allowance for the 2015 legislative changes in the outstanding claims liability as at 30 June 2018 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 no unintended consequences.

## ***B 7 Wage and premium development factors***

This year we have used earned wages and premium for the third 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 three year averages of the development of wages, with development year 3 assuming no more development. The development factor is slightly higher than last year for DY0 but similar for DY1 and 2.

| <b>Earned wages development factors</b> |             |             |
|-----------------------------------------|-------------|-------------|
| <b>Development year</b>                 | <b>2018</b> | <b>2017</b> |
| 0                                       | 1.035       | 1.030       |
| 1                                       | 1.016       | 1.017       |
| 2                                       | 1.006       | 1.007       |
| 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 three year averages of the development of premium, with development years 2 and 3 assuming no more development. The development factor is slightly higher than last year for DY0 and 1.

| <b>Earned premium development factors</b> |             |             |
|-------------------------------------------|-------------|-------------|
| <b>Development year</b>                   | <b>2018</b> | <b>2017</b> |
| 0                                         | 1.040       | 1.030       |
| 1                                         | 1.028       | 1.024       |
| 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

| Accident Year | Number of claims reported (a) for development year: |     |    |   |   |   |   |   |   |   |    | Total |
|---------------|-----------------------------------------------------|-----|----|---|---|---|---|---|---|---|----|-------|
|               | 0                                                   | 1   | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |
| 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 |
| 2018          | 2,151                                               | 249 | 19 | 9 | 2 | 3 | 0 | 0 | 0 | 1 | 1  | 2,435 |

Note: From summary of Form B returns up to 30 June 2018

### C1.2 Cumulative claims reported

| Accident Year | Cumulative number of claims reported (a) for development year: |       |       |       |       |       |       |       |       |       |       |  |
|---------------|----------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|               | 0                                                              | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |  |
| 2006          | 2,483                                                          | 2,735 | 2,560 | 2,860 | 2,890 | 2,864 | 2,963 | 2,920 |       |       |       |  |
| 2007          | 2,224                                                          | 2,697 | 2,745 | 2,566 | 2,861 | 2,893 | 2,864 | 2,964 | 2,920 |       |       |  |
| 2008          | 2,463                                                          | 2,453 | 2,707 | 2,748 | 2,569 | 2,865 | 2,895 | 2,864 | 2,964 | 2,920 |       |  |
| 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 |  |
| 2018          | 2,151                                                          | 2,390 | 2,520 | 2,642 | 2,745 | 2,777 | 2,624 | 2,663 | 2,525 | 2,618 | 2,731 |  |

Note: Cumulative claim reports from table above

### C1.3 Active claims

| Accident Year | Active claims (a) at the end of development year: |     |     |    |    |    |    |    |    |    |    |       |
|---------------|---------------------------------------------------|-----|-----|----|----|----|----|----|----|----|----|-------|
|               | 0                                                 | 1   | 2   | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | Total |
| 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 |
| 2018          | 1,011                                             | 286 | 125 | 74 | 42 | 39 | 19 | 12 | 17 | 12 | 66 | 1,703 |

**Note:** From summary of Form B returns up to 30 June 2018. Active claims were provided for the first time at 30 June 2010

### C1.4 Claim payments

| Accident Year | Claim payments (a) for development year (\$000): |        |        |        |        |       |       |       |       |       |       |         |
|---------------|--------------------------------------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|---------|
|               | 0                                                | 1      | 2      | 3      | 4      | 5     | 6     | 7     | 8     | 9     | 10    | Total   |
| 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 | 83,064  |
| 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                                           | 24,273 | 9,756  | 10,476 | 6,857  | 5,760 | 3,421 | 4,773 | 1,958 | 476   | 5,038 | 92,013  |
| 2015          | 19,207                                           | 24,696 | 15,559 | 9,393  | 3,883  | 4,418 | 3,315 | 2,818 | 1,704 | 1,546 | 5,972 | 92,512  |
| 2016          | 21,252                                           | 24,653 | 15,235 | 14,458 | 5,199  | 4,980 | 3,152 | 2,253 | 4,170 | 2,208 | 4,819 | 102,379 |
| 2017          | 23,630                                           | 30,418 | 20,568 | 12,543 | 7,270  | 5,041 | 5,830 | 2,996 | 1,629 | 2,446 | 9,719 | 122,088 |
| 2018          | 26,874                                           | 31,689 | 19,247 | 15,764 | 8,160  | 3,474 | 2,473 | 1,127 | 2,515 | 1,180 | 8,246 | 120,748 |

**Note:** Data extracted from the WIMS system up to 30 June 2018

### C1.5 Case estimates

| Accident Year | Case estimates (a) for development 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 |
| 2018          | 66,003                                   | 34,783 | 23,594 | 20,199 | 7,580  | 10,483 | 5,693  | 3,782  | 4,443  | 8,451  | 31,866 | 216,879 |

**Note:** From summary of Form B returns up to 30 June 2018. Case estimates were provided for the first time at 30 June 2014



## ***C 2 Actual and projected claims experience during 2017/18***

This section compares the actual experience over the 2018 financial year with the expected experience based on the previous scheme valuation as at 30 June 2017.

### ***C2.1 Number of claims reported***

| Accident year ended 30 June | Number of claims reported |               | Actual / expected (c) |
|-----------------------------|---------------------------|---------------|-----------------------|
|                             | Actual (a)                | Projected (b) |                       |
| 2017                        | 249                       | 269           | 93%                   |
| 2016                        | 19                        | 16            | 116%                  |
| 2015                        | 9                         | 7             | 138%                  |
| 2014                        | 2                         | 2             | 87%                   |
| 2013                        | 3                         | 1             | 284%                  |
| 2012                        | 0                         | 1             | 0%                    |
| 2011                        | 0                         | 0             | 0%                    |
| 2010                        | 0                         | 0             | 0%                    |
| 2009                        | 1                         | 0             | 253%                  |
| 2008 and earlier            | 1                         | 2             | 54%                   |
| <b>Total</b>                | <b>284</b>                | <b>299</b>    | <b>95%</b>            |

**Notes:** (a) Extracted from the WIMS database to 30 June 2018

(b) Derived using the reporting rates in Appendix C3.1 of our previous scheme report dated 13 June 2018

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

### ***C2.2 Proportion of claims finalised***

| Accident year ended 30 June | Proportion of claims finalised (a) during 2017/18 |               | Actual / expected (c) |
|-----------------------------|---------------------------------------------------|---------------|-----------------------|
|                             | Actual                                            | Projected (b) |                       |
| 2017                        | 75%                                               | 77%           | 98%                   |
| 2016                        | 58%                                               | 52%           | 112%                  |
| 2015                        | 54%                                               | 49%           | 110%                  |
| 2014                        | 40%                                               | 34%           | 119%                  |
| 2013                        | 29%                                               | 35%           | 84%                   |
| 2012                        | 27%                                               | 26%           | 102%                  |
| 2011                        | 14%                                               | 19%           | 74%                   |
| 2010                        | 23%                                               | 19%           | 117%                  |
| 2009                        | 29%                                               | 19%           | 153%                  |
| 2008 and earlier            | 20%                                               | 19%           | 101%                  |
| <b>Total</b>                | <b>63.7%</b>                                      | <b>63.5%</b>  | <b>100%</b>           |

**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 13 June 2018. Total is weighted average using the current year's actual number of claims handled by occurrence year as the weights

## C2.3 Claim payments

| Accident year<br>ended 30 June | Amount of claim payments during 2017/18 |               |                          |
|--------------------------------|-----------------------------------------|---------------|--------------------------|
|                                | Combined total (\$000)                  |               | Actual /<br>expected (c) |
|                                | Actual (a)                              | Projected (b) |                          |
| 2017                           | 31,689                                  | 28,731        | 110%                     |
| 2016                           | 19,247                                  | 17,246        | 112%                     |
| 2015                           | 15,764                                  | 14,494        | 109%                     |
| 2014                           | 8,160                                   | 8,916         | 92%                      |
| 2013                           | 3,474                                   | 6,825         | 51%                      |
| 2012                           | 2,473                                   | 3,082         | 80%                      |
| 2011                           | 1,127                                   | 1,411         | 80%                      |
| 2010                           | 2,515                                   | 2,111         | 119%                     |
| 2009                           | 1,180                                   | 2,770         | 43%                      |
| 2008 and earlier               | 8,246                                   | 12,748        | 65%                      |
| <b>Total</b>                   | <b>93,875</b>                           | <b>98,336</b> | <b>95%</b>               |

Notes: (a) Extracted from the WIMS database to 30 June 2018

(b) From previous scheme report dated 13 June 2018, in 30 June 2018 values

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

## C 3 Analysis and projection models

### C3.1 All payment types

#### Claim notification pattern

| Accident<br>Year   | Chain ladder ratio (a) for development year: |              |              |              |              |              |              |              |              |              |
|--------------------|----------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                    | 1                                            | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10 onwards   |
| 2006               | 1.102                                        | 1.004        | 1.002        | 1.000        | 1.000        | 1.000        | 1.000        | 1.000        | 1.222        | 1.571        |
| 2007               | 1.086                                        | 1.004        | 1.002        | 1.000        | 1.001        | 1.000        | 1.000        | 1.000        | 1.000        | 1.364        |
| 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        |
| 2018               | 1.116                                        | 1.008        | 1.003        | 1.001        | 1.001        | 1.000        | 1.000        | 1.000        | 1.000        | 1.000        |
| <b>Adopted (b)</b> | <b>1.122</b>                                 | <b>1.007</b> | <b>1.002</b> | <b>1.001</b> | <b>1.001</b> | <b>1.000</b> | <b>1.000</b> | <b>1.000</b> | <b>1.000</b> | <b>1.001</b> |

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

(b) Adopted for 30 June 2018 valuation

### Numbers of claims incurred

| Accident Year | Number of claims             |                          |              |
|---------------|------------------------------|--------------------------|--------------|
|               | Reported to 30 June 2018 (a) | IBNR at 30 June 2018 (b) | Incurred (c) |
| 2006          | 2,714                        | 0                        | 2,714        |
| 2007          | 2,474                        | 0                        | 2,474        |
| 2008          | 2,731                        | 0                        | 2,731        |
| 2009          | 2,618                        | 2                        | 2,620        |
| 2010          | 2,525                        | 2                        | 2,527        |
| 2011          | 2,663                        | 2                        | 2,665        |
| 2012          | 2,624                        | 3                        | 2,627        |
| 2013          | 2,777                        | 4                        | 2,781        |
| 2014          | 2,745                        | 5                        | 2,750        |
| 2015          | 2,642                        | 8                        | 2,650        |
| 2016          | 2,520                        | 13                       | 2,533        |
| 2017          | 2,390                        | 30                       | 2,420        |
| 2018          | 2,151                        | 291                      | 2,442        |

- 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

| Accident Year      | Finalisation rate (a) for development year: |              |              |              |              |              |              |              |              |              |              |
|--------------------|---------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                    | 0                                           | 1            | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10 onwards   |
| 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        |
| 2018               | 0.530                                       | 0.754        | 0.583        | 0.540        | 0.400        | 0.291        | 0.269        | 0.143        | 0.227        | 0.294        | 0.195        |
| <b>Adopted (b)</b> | <b>0.553</b>                                | <b>0.759</b> | <b>0.547</b> | <b>0.512</b> | <b>0.345</b> | <b>0.352</b> | <b>0.271</b> | <b>0.165</b> | <b>0.219</b> | <b>0.198</b> | <b>0.215</b> |

- Notes:** (a) Defined as: Number of claims finalised / number of claims handled  
 (b) Adopted for 30 June 2018 valuation

## C3.2 Weekly benefits

### Claim payments

| Accident Year | Claim payments (a) for development year: |            |           |           |           |           |           |         |         |         |            | Total      |
|---------------|------------------------------------------|------------|-----------|-----------|-----------|-----------|-----------|---------|---------|---------|------------|------------|
|               | 0                                        | 1          | 2         | 3         | 4         | 5         | 6         | 7       | 8       | 9       | 10 onwards |            |
| 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          | 8,763,241                                | 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  | 33,692,725 |
| 2017          | 9,888,087                                | 13,191,879 | 5,918,120 | 2,612,577 | 1,987,221 | 649,422   | 520,104   | 627,099 | 441,730 | 423,495 | 2,429,708  | 38,689,442 |
| 2018          | 9,535,510                                | 14,918,084 | 5,975,439 | 3,766,731 | 1,572,990 | 998,863   | 612,951   | 296,451 | 460,635 | 390,855 | 2,061,607  | 40,590,116 |

- Notes:** (a) Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

### Average real payment per active claim

| Accident Year      | Weekly Benefits PPAC (a) for development year: |               |               |               |               |               |               |               |               |               |
|--------------------|------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                    | 1                                              | 2             | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10 onwards    |
| 2011               | 14,505                                         | 15,269        | 22,189        | 26,187        | 41,692        | 19,852        | 24,631        | 41,127        | 24,240        | 12,269        |
| 2012               | 11,839                                         | 20,243        | 19,565        | 22,064        | 45,846        | 25,194        | 14,665        | 26,197        | 30,435        | 13,473        |
| 2013               | 13,143                                         | 19,609        | 26,070        | 19,533        | 32,758        | 33,385        | 240           | 29,149        | 27,311        | 12,887        |
| 2014               | 14,370                                         | 17,161        | 25,233        | 34,640        | 29,202        | 38,249        | 30,438        | 27,858        | 32,458        | 15,785        |
| 2015               | 13,449                                         | 21,780        | 28,602        | 28,095        | 31,388        | 24,171        | 32,734        | 42,012        | 34,381        | 19,994        |
| 2016               | 13,487                                         | 20,663        | 23,706        | 25,305        | 23,738        | 20,540        | 20,450        | 24,488        | 38,536        | 18,816        |
| 2017               | 13,531                                         | 21,226        | 19,276        | 25,341        | 13,975        | 22,384        | 23,990        | 24,014        | 23,023        | 32,593        |
| 2018               | 16,588                                         | 21,564        | 25,130        | 23,458        | 19,479        | 23,907        | 21,473        | 21,233        | 24,772        | 25,810        |
| <b>Adopted (b)</b> | <b>16,990</b>                                  | <b>21,912</b> | <b>23,616</b> | <b>24,710</b> | <b>18,701</b> | <b>22,091</b> | <b>22,115</b> | <b>23,228</b> | <b>30,362</b> | <b>22,386</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Average real payment per claim incurred

| Accident Year      | Weekly Benefits PPCI (a) for development year: |              |              |              |            |            |            |            |            |            | Total      |               |
|--------------------|------------------------------------------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|---------------|
|                    | 0                                              | 1            | 2            | 3            | 4          | 5          | 6          | 7          | 8          | 9          |            | 10 onwards    |
| 2006               | 2,907                                          | 3,002        | 995          | 997          | 504        | 349        | 0          | 0          | 0          | 0          | 170,360    | 179,114       |
| 2007               | 3,044                                          | 3,316        | 1,368        | 821          | 933        | 378        | 359        | 0          | 0          | 0          | 84,847     | 95,067        |
| 2008               | 3,348                                          | 3,671        | 1,575        | 929          | 790        | 610        | 412        | 322        | 0          | 0          | 43,596     | 55,250        |
| 2009               | 3,502                                          | 3,590        | 2,358        | 683          | 445        | 345        | 454        | 203        | 195        | 0          | 947        | 12,723        |
| 2010               | 3,584                                          | 3,507        | 1,770        | 1,409        | 767        | 237        | 289        | 392        | 197        | 300        | 603        | 13,058        |
| 2011               | 3,473                                          | 4,362        | 1,405        | 1,072        | 783        | 707        | 245        | 268        | 315        | 117        | 428        | 13,175        |
| 2012               | 3,541                                          | 3,456        | 1,906        | 836          | 566        | 778        | 288        | 154        | 193        | 233        | 460        | 12,412        |
| 2013               | 3,722                                          | 3,968        | 1,567        | 1,269        | 500        | 588        | 459        | 2          | 159        | 138        | 445        | 12,816        |
| 2014               | 3,434                                          | 4,361        | 1,509        | 1,041        | 987        | 490        | 518        | 320        | 154        | 165        | 569        | 13,550        |
| 2015               | 3,536                                          | 4,553        | 2,295        | 1,089        | 548        | 559        | 249        | 336        | 425        | 139        | 617        | 14,345        |
| 2016               | 3,728                                          | 4,347        | 2,096        | 1,236        | 549        | 330        | 284        | 195        | 206        | 296        | 478        | 13,745        |
| 2017               | 4,221                                          | 5,378        | 2,307        | 981          | 738        | 255        | 202        | 256        | 174        | 160        | 1,014      | 15,688        |
| 2018               | 3,959                                          | 6,252        | 2,392        | 1,442        | 580        | 364        | 237        | 113        | 185        | 151        | 766        | 16,441        |
| <b>Adopted (b)</b> | <b>4,189</b>                                   | <b>6,404</b> | <b>2,405</b> | <b>1,229</b> | <b>678</b> | <b>398</b> | <b>300</b> | <b>243</b> | <b>226</b> | <b>180</b> | <b>684</b> | <b>16,936</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Estimates from models

| Accident Year  | Weekly Benefits                     |               |               |           |      |
|----------------|-------------------------------------|---------------|---------------|-----------|------|
|                | Estimated outstanding claims        |               |               | Weighting |      |
|                | claims at 30 June 2018 (\$000s) (a) |               |               | PPAC      | PPCI |
|                | PPAC                                | PPCI          | Adopted       |           |      |
| 2018           | 35,910                              | 33,000        | 35,037        | 70%       | 30%  |
| 2017           | 16,951                              | 16,615        | 16,850        | 70%       | 30%  |
| 2016           | 9,563                               | 10,967        | 10,686        | 20%       | 80%  |
| 2015           | 7,349                               | 7,985         | 7,349         | 100%      | 0%   |
| 2014           | 4,608                               | 6,254         | 4,608         | 100%      | 0%   |
| 2013           | 5,009                               | 5,083         | 5,009         | 100%      | 0%   |
| 2012           | 2,697                               | 3,911         | 2,697         | 100%      | 0%   |
| 2011           | 1,723                               | 3,235         | 1,723         | 100%      | 0%   |
| 2010           | 2,334                               | 2,431         | 2,334         | 100%      | 0%   |
| 2009 & earlier | 9,171                               | 9,877         | 9,171         | 100%      | 0%   |
| <b>Total</b>   | <b>95,315</b>                       | <b>99,358</b> | <b>95,464</b> |           |      |

Notes: (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments

### C3.3 Medical and hospital

#### Claim payments

| Accident Year | Claim payments (a) for development year: |           |           |         |         |         |         |         |         |         |            | Total      |
|---------------|------------------------------------------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
|               | 0                                        | 1         | 2         | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10 onwards |            |
| 2006          | 2,749,613                                | 2,074,713 | 419,634   | 386,572 | 296,048 | 62,150  | 0       | 0       | 0       | 0       | 219,576    | 6,208,306  |
| 2007          | 2,585,463                                | 1,646,653 | 687,767   | 394,179 | 316,294 | 147,263 | 83,368  | 0       | 0       | 0       | 151,281    | 6,012,268  |
| 2008          | 3,579,319                                | 2,209,555 | 540,753   | 606,722 | 187,383 | 220,673 | 65,565  | 69,104  | 0       | 0       | 175,053    | 7,654,127  |
| 2009          | 3,741,213                                | 2,808,425 | 909,690   | 424,545 | 117,673 | 143,441 | 118,315 | 55,304  | 46,632  | 0       | 364,266    | 8,729,504  |
| 2010          | 4,117,880                                | 2,539,692 | 1,039,031 | 655,342 | 466,859 | 170,986 | 145,452 | 112,152 | 150,648 | 66,583  | 248,493    | 9,713,118  |
| 2011          | 4,550,111                                | 2,725,107 | 722,979   | 478,082 | 334,251 | 318,953 | 124,344 | 65,743  | 323,875 | 142,187 | 180,324    | 9,965,956  |
| 2012          | 4,665,246                                | 3,373,754 | 928,296   | 474,053 | 265,961 | 250,060 | 137,885 | 60,493  | 51,395  | 158,574 | 212,586    | 10,578,303 |
| 2013          | 4,663,542                                | 3,602,423 | 1,043,761 | 442,068 | 197,289 | 183,961 | 255,237 | 28,860  | 19,463  | 157,285 | 210,699    | 10,804,588 |
| 2014          | 5,381,289                                | 3,835,811 | 764,401   | 626,585 | 321,885 | 213,159 | 120,997 | 185,779 | 39,070  | 17,751  | 243,937    | 11,750,664 |
| 2015          | 6,208,390                                | 4,174,934 | 1,174,615 | 357,453 | 435,689 | 299,445 | 148,729 | 174,226 | 296,992 | 34,874  | 289,140    | 13,594,487 |
| 2016          | 6,477,554                                | 4,973,677 | 1,201,820 | 423,421 | 200,775 | 253,076 | 183,046 | 125,883 | 95,932  | 50,978  | 233,346    | 14,219,508 |
| 2017          | 7,119,441                                | 5,342,626 | 1,788,321 | 411,454 | 349,532 | 162,219 | 232,516 | 102,941 | 108,095 | 27,720  | 470,585    | 16,115,450 |
| 2018          | 8,084,686                                | 4,685,969 | 1,502,615 | 802,869 | 341,625 | 372,351 | 121,715 | 110,074 | 136,226 | 25,397  | 399,291    | 16,582,818 |

Note: Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

#### Average real payment per active claim

| Accident Year      | Medical And Hospital PPAC (a) for development year: |              |              |              |              |              |              |              |              |              |
|--------------------|-----------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                    | 1                                                   | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10 onwards   |
| 2011               | 4,725                                               | 3,953        | 4,773        | 5,952        | 9,137        | 4,819        | 3,094        | 19,400       | 13,383       | 2,376        |
| 2012               | 5,270                                               | 4,740        | 5,143        | 4,617        | 7,235        | 5,405        | 2,535        | 3,287        | 8,759        | 2,609        |
| 2013               | 5,328                                               | 5,747        | 4,215        | 3,453        | 4,403        | 8,804        | 1,538        | 1,522        | 14,189       | 2,496        |
| 2014               | 5,297                                               | 3,857        | 6,639        | 5,211        | 5,647        | 3,812        | 8,328        | 3,036        | 1,478        | 3,057        |
| 2015               | 5,105                                               | 4,564        | 4,069        | 9,538        | 7,575        | 6,271        | 7,084        | 13,524       | 3,609        | 3,872        |
| 2016               | 6,276                                               | 4,642        | 3,147        | 3,796        | 7,371        | 5,636        | 5,426        | 4,495        | 2,891        | 3,644        |
| 2017               | 5,480                                               | 6,414        | 3,036        | 4,457        | 3,491        | 10,007       | 3,938        | 5,877        | 1,507        | 6,313        |
| 2018               | 5,210                                               | 5,423        | 5,356        | 5,095        | 7,261        | 4,747        | 7,973        | 6,279        | 1,610        | 4,999        |
| <b>Adopted (b)</b> | <b>5,637</b>                                        | <b>5,502</b> | <b>4,378</b> | <b>4,485</b> | <b>6,227</b> | <b>5,847</b> | <b>6,404</b> | <b>7,085</b> | <b>2,148</b> | <b>4,336</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

#### Average real payment per claim incurred

| Accident Year      | Medical And Hospital PPCI (a) for development year: |              |            |            |            |            |           |           |           |           |            |              |
|--------------------|-----------------------------------------------------|--------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|------------|--------------|
|                    | 0                                                   | 1            | 2          | 3          | 4          | 5          | 6         | 7         | 8         | 9         | 10 onwards | Total        |
| 2006               | 1,675                                               | 1,245        | 269        | 223        | 169        | 36         | 0         | 0         | 0         | 0         | 32,995     | 36,612       |
| 2007               | 1,703                                               | 989          | 407        | 249        | 180        | 83         | 47        | 0         | 0         | 0         | 16,433     | 20,091       |
| 2008               | 2,023                                               | 1,379        | 308        | 340        | 112        | 119        | 35        | 37        | 0         | 0         | 8,444      | 12,796       |
| 2009               | 2,104                                               | 1,515        | 542        | 230        | 63         | 82         | 61        | 28        | 24        | 0         | 183        | 4,832        |
| 2010               | 2,286                                               | 1,360        | 534        | 372        | 241        | 87         | 79        | 55        | 73        | 33        | 117        | 5,237        |
| 2011               | 2,250                                               | 1,421        | 364        | 231        | 178        | 155        | 59        | 34        | 149       | 65        | 83         | 4,987        |
| 2012               | 2,158                                               | 1,538        | 446        | 220        | 118        | 123        | 62        | 27        | 24        | 67        | 89         | 4,873        |
| 2013               | 1,967                                               | 1,608        | 459        | 205        | 88         | 79         | 121       | 12        | 8         | 72        | 86         | 4,706        |
| 2014               | 2,280                                               | 1,608        | 339        | 274        | 148        | 95         | 52        | 88        | 17        | 8         | 110        | 5,018        |
| 2015               | 2,667                                               | 1,728        | 481        | 155        | 186        | 135        | 65        | 73        | 137       | 15        | 120        | 5,760        |
| 2016               | 2,755                                               | 2,023        | 471        | 164        | 82         | 102        | 78        | 52        | 38        | 22        | 93         | 5,880        |
| 2017               | 3,039                                               | 2,178        | 697        | 155        | 130        | 64         | 90        | 42        | 43        | 10        | 196        | 6,645        |
| 2018               | 3,357                                               | 1,964        | 601        | 307        | 126        | 136        | 47        | 42        | 55        | 10        | 148        | 6,793        |
| <b>Adopted (b)</b> | <b>3,507</b>                                        | <b>2,166</b> | <b>679</b> | <b>210</b> | <b>134</b> | <b>106</b> | <b>66</b> | <b>59</b> | <b>56</b> | <b>13</b> | <b>133</b> | <b>7,131</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

## Estimates from models

| Medical And Hospital |                                                                  |               |               |           |      |
|----------------------|------------------------------------------------------------------|---------------|---------------|-----------|------|
| Accident Year        | Estimated outstanding claims claims at 30 June 2018 (\$000s) (a) |               |               | Weighting |      |
|                      | PPAC                                                             | PPCI          | Adopted       | PPAC      | PPCI |
| 2018                 | 10,372                                                           | 9,617         | 10,146        | 70%       | 30%  |
| 2017                 | 4,081                                                            | 3,993         | 4,055         | 70%       | 30%  |
| 2016                 | 2,189                                                            | 2,319         | 2,293         | 20%       | 80%  |
| 2015                 | 1,786                                                            | 1,777         | 1,786         | 100%      | 0%   |
| 2014                 | 1,187                                                            | 1,404         | 1,187         | 100%      | 0%   |
| 2013                 | 1,186                                                            | 1,070         | 1,186         | 100%      | 0%   |
| 2012                 | 609                                                              | 797           | 609           | 100%      | 0%   |
| 2011                 | 361                                                              | 621           | 361           | 100%      | 0%   |
| 2010                 | 431                                                              | 424           | 431           | 100%      | 0%   |
| 2009 & earlier       | 1,950                                                            | 1,167         | 1,950         | 100%      | 0%   |
| <b>Total</b>         | <b>24,152</b>                                                    | <b>23,188</b> | <b>24,003</b> |           |      |

**Notes:** (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments

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

### Claim payments

| Accident Year | Claim payments (a) for development year: |           |           |         |         |         |         |         |         |         |            | Total      |
|---------------|------------------------------------------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|------------|------------|
|               | 0                                        | 1         | 2         | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10 onwards |            |
| 2006          | 1,326,485                                | 2,025,411 | 873,541   | 573,235 | 263,167 | 148,520 | 0       | 0       | 0       | 0       | 210,469    | 5,420,828  |
| 2007          | 1,589,128                                | 1,942,786 | 927,530   | 397,675 | 336,791 | 243,939 | 136,410 | 0       | 0       | 0       | 145,007    | 5,719,266  |
| 2008          | 1,799,554                                | 2,127,851 | 652,592   | 479,144 | 189,028 | 258,609 | 145,286 | 79,879  | 0       | 0       | 167,792    | 5,899,735  |
| 2009          | 2,353,552                                | 3,397,234 | 983,622   | 480,839 | 325,118 | 106,012 | 225,114 | 86,876  | 60,346  | 0       | 349,158    | 8,367,871  |
| 2010          | 2,415,648                                | 2,698,696 | 1,323,850 | 673,720 | 415,171 | 157,705 | 116,269 | 183,296 | 126,476 | 382,779 | 238,186    | 8,731,796  |
| 2011          | 1,619,391                                | 2,841,841 | 969,159   | 764,929 | 342,332 | 321,059 | 136,660 | 81,571  | 145,650 | 70,965  | 172,845    | 7,466,402  |
| 2012          | 2,535,609                                | 2,492,688 | 1,294,681 | 403,986 | 640,432 | 507,062 | 102,063 | 41,001  | 58,384  | 93,257  | 203,769    | 8,372,932  |
| 2013          | 2,450,396                                | 2,841,820 | 1,134,442 | 508,203 | 298,929 | 216,879 | 143,948 | 94,135  | 33,874  | 30,464  | 201,960    | 7,955,050  |
| 2014          | 3,356,598                                | 3,611,302 | 1,485,319 | 731,605 | 355,967 | 214,183 | 243,243 | 65,783  | 62,260  | 39,744  | 233,819    | 10,399,823 |
| 2015          | 2,555,311                                | 4,026,095 | 2,104,207 | 995,769 | 451,970 | 418,317 | 138,582 | 191,187 | 166,531 | 116,635 | 277,148    | 11,441,752 |
| 2016          | 2,992,475                                | 3,909,402 | 1,869,947 | 801,783 | 242,863 | 193,909 | 178,898 | 96,043  | 114,604 | 118,250 | 223,668    | 10,741,842 |
| 2017          | 3,553,151                                | 5,287,125 | 2,373,618 | 867,487 | 397,105 | 205,080 | 482,730 | 195,164 | 65,307  | 121,999 | 451,067    | 13,999,833 |
| 2018          | 5,252,470                                | 4,880,244 | 1,881,737 | 930,973 | 431,194 | 201,224 | 150,669 | 68,631  | 95,422  | 52,431  | 382,731    | 14,327,726 |

**Note:** Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

### Average real payment per active claim

| Accident Year      | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death PPAC (a) for development year: |              |              |              |              |              |              |              |              |              |
|--------------------|-------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                    | 1                                                                                                                 | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10 onwards   |
| 2011               | 4,927                                                                                                             | 5,299        | 7,636        | 6,096        | 9,197        | 5,297        | 3,839        | 8,724        | 6,680        | 2,278        |
| 2012               | 3,893                                                                                                             | 6,610        | 4,383        | 11,118       | 14,671       | 4,001        | 1,718        | 3,734        | 5,151        | 2,501        |
| 2013               | 4,203                                                                                                             | 6,246        | 4,845        | 5,232        | 5,191        | 4,965        | 5,018        | 2,648        | 2,748        | 2,392        |
| 2014               | 4,987                                                                                                             | 7,494        | 7,752        | 5,762        | 5,674        | 7,663        | 2,949        | 4,838        | 3,309        | 2,930        |
| 2015               | 4,923                                                                                                             | 8,176        | 11,336       | 9,895        | 10,582       | 5,843        | 7,773        | 7,583        | 12,071       | 3,712        |
| 2016               | 4,933                                                                                                             | 7,223        | 5,959        | 4,592        | 5,648        | 5,508        | 4,140        | 5,370        | 6,707        | 3,493        |
| 2017               | 5,423                                                                                                             | 8,513        | 6,400        | 5,064        | 4,413        | 20,776       | 7,466        | 3,550        | 6,632        | 6,051        |
| 2018               | 5,427                                                                                                             | 6,791        | 6,211        | 6,430        | 3,924        | 5,877        | 4,971        | 4,398        | 3,323        | 4,792        |
| <b>Adopted (b)</b> | <b>5,425</b>                                                                                                      | <b>7,663</b> | <b>7,250</b> | <b>6,178</b> | <b>5,977</b> | <b>8,627</b> | <b>5,575</b> | <b>5,287</b> | <b>6,148</b> | <b>4,156</b> |

**Notes:** (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Average real payment per claim incurred

| Accident Year      | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death PPCI (a) for development year: |              |            |            |            |            |           |           |           |           |            | Total        |
|--------------------|-------------------------------------------------------------------------------------------------------------------|--------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|------------|--------------|
|                    | 0                                                                                                                 | 1            | 2          | 3          | 4          | 5          | 6         | 7         | 8         | 9         | 10 onwards |              |
| 2006               | 808                                                                                                               | 1,216        | 560        | 330        | 150        | 86         | 0         | 0         | 0         | 0         | 31,627     | 34,777       |
| 2007               | 1,047                                                                                                             | 1,166        | 549        | 251        | 191        | 137        | 78        | 0         | 0         | 0         | 15,752     | 19,171       |
| 2008               | 1,017                                                                                                             | 1,328        | 371        | 269        | 113        | 139        | 77        | 43        | 0         | 0         | 8,093      | 11,451       |
| 2009               | 1,323                                                                                                             | 1,832        | 586        | 261        | 174        | 61         | 116       | 44        | 31        | 0         | 176        | 4,603        |
| 2010               | 1,341                                                                                                             | 1,445        | 680        | 382        | 215        | 80         | 63        | 90        | 61        | 187       | 112        | 4,657        |
| 2011               | 801                                                                                                               | 1,482        | 487        | 369        | 182        | 156        | 65        | 42        | 67        | 32        | 79         | 3,763        |
| 2012               | 1,173                                                                                                             | 1,136        | 623        | 187        | 285        | 249        | 46        | 18        | 28        | 40        | 85         | 3,870        |
| 2013               | 1,033                                                                                                             | 1,269        | 499        | 236        | 134        | 93         | 68        | 41        | 14        | 14        | 83         | 3,484        |
| 2014               | 1,422                                                                                                             | 1,514        | 659        | 320        | 164        | 95         | 104       | 31        | 27        | 17        | 106        | 4,459        |
| 2015               | 1,098                                                                                                             | 1,666        | 861        | 432        | 193        | 188        | 60        | 80        | 77        | 49        | 115        | 4,819        |
| 2016               | 1,273                                                                                                             | 1,590        | 733        | 311        | 100        | 78         | 76        | 40        | 45        | 52        | 89         | 4,386        |
| 2017               | 1,517                                                                                                             | 2,156        | 925        | 326        | 147        | 81         | 187       | 80        | 26        | 46        | 188        | 5,679        |
| 2018               | 2,181                                                                                                             | 2,045        | 753        | 356        | 159        | 73         | 58        | 26        | 38        | 20        | 142        | 5,853        |
| <b>Adopted (b)</b> | <b>1,895</b>                                                                                                      | <b>2,152</b> | <b>861</b> | <b>341</b> | <b>153</b> | <b>102</b> | <b>98</b> | <b>51</b> | <b>42</b> | <b>37</b> | <b>127</b> | <b>5,858</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Estimates from models

| Accident Year  | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death |               |               |           |      |
|----------------|------------------------------------------------------------------------------------|---------------|---------------|-----------|------|
|                | Estimated outstanding claims                                                       |               |               | Weighting |      |
|                | claims at 30 June 2018 (\$000s) (a)                                                |               |               | PPAC      | PPCI |
| 2018           | 11,090                                                                             | 10,130        | 10,802        | 70%       | 30%  |
| 2017           | 5,066                                                                              | 4,658         | 4,944         | 70%       | 30%  |
| 2016           | 2,564                                                                              | 2,608         | 2,599         | 20%       | 80%  |
| 2015           | 1,843                                                                              | 1,772         | 1,843         | 100%      | 0%   |
| 2014           | 1,153                                                                              | 1,382         | 1,153         | 100%      | 0%   |
| 2013           | 1,188                                                                              | 1,084         | 1,188         | 100%      | 0%   |
| 2012           | 551                                                                                | 747           | 551           | 100%      | 0%   |
| 2011           | 336                                                                                | 605           | 336           | 100%      | 0%   |
| 2010           | 441                                                                                | 455           | 441           | 100%      | 0%   |
| 2009 & earlier | 1,699                                                                              | 1,695         | 1,699         | 100%      | 0%   |
| <b>Total</b>   | <b>25,931</b>                                                                      | <b>25,136</b> | <b>25,556</b> |           |      |

Notes: (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments

## C3.5 Other goods and services

### Claim payments

| Accident Year | Claim payments (a) for development year: |           |           |           |         |         |         |         |         |         |            | Total     |
|---------------|------------------------------------------|-----------|-----------|-----------|---------|---------|---------|---------|---------|---------|------------|-----------|
|               | 0                                        | 1         | 2         | 3         | 4       | 5       | 6       | 7       | 8       | 9       | 10 onwards |           |
| 2006          | 868,463                                  | 920,704   | 217,433   | 237,431   | 39,375  | 30,087  | 0       | 0       | 0       | 0       | 171,648    | 2,485,141 |
| 2007          | 1,073,145                                | 800,665   | 358,966   | 160,880   | 185,147 | 44,076  | 46,077  | 0       | 0       | 0       | 118,260    | 2,787,216 |
| 2008          | 1,109,871                                | 827,823   | 275,410   | 182,574   | 85,722  | 183,976 | 20,278  | 23,488  | 0       | 0       | 136,843    | 2,845,985 |
| 2009          | 1,234,445                                | 1,149,196 | 468,962   | 165,602   | 170,877 | 66,805  | 103,871 | 31,142  | 22,987  | 0       | 284,756    | 3,698,643 |
| 2010          | 1,119,511                                | 1,914,284 | 577,979   | 294,112   | 114,282 | 56,387  | 44,834  | 191,069 | 30,123  | 19,473  | 194,253    | 4,556,307 |
| 2011          | 1,357,320                                | 1,419,816 | 1,773,413 | 370,817   | 199,111 | 85,453  | 59,446  | 48,905  | 211,722 | 15,125  | 140,964    | 5,682,092 |
| 2012          | 1,626,314                                | 1,487,961 | 539,124   | 1,014,463 | 182,189 | 779,617 | 49,111  | 41,856  | 18,135  | 118,795 | 166,184    | 6,023,749 |
| 2013          | 1,568,276                                | 1,464,369 | 610,500   | 294,071   | 630,061 | 166,282 | 509,228 | 22,570  | 12,114  | 7,029   | 164,709    | 5,449,209 |
| 2014          | 1,723,246                                | 1,401,922 | 430,785   | 347,657   | 168,785 | 187,116 | 156,222 | -13,833 | 12,821  | 19,453  | 190,691    | 4,624,865 |
| 2015          | 1,547,585                                | 1,614,034 | 452,554   | 202,359   | 316,201 | 191,683 | 154,664 | 240,214 | 135,516 | 14,040  | 226,028    | 5,094,878 |
| 2016          | 2,054,178                                | 1,974,264 | 429,633   | 233,491   | 96,505  | 114,752 | 134,736 | 92,629  | 146,768 | 89,762  | 182,412    | 5,549,130 |
| 2017          | 1,847,320                                | 1,839,750 | 823,543   | 192,966   | 112,408 | 43,362  | 88,568  | 48,689  | 148,294 | 56,237  | 367,868    | 5,569,005 |
| 2018          | 2,434,888                                | 1,760,326 | 762,490   | 344,347   | 117,509 | 122,482 | 44,067  | 56,536  | 37,815  | 290,716 | 312,136    | 6,283,312 |

Note: Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

### Average real payment per active claim

| Accident Year      | Other Goods And Services PPAC (a) for development year: |              |              |              |              |              |              |              |              |              |
|--------------------|---------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                    | 1                                                       | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | 10 onwards   |
| 2011               | 2,462                                                   | 9,697        | 3,702        | 3,546        | 2,448        | 2,304        | 2,302        | 12,682       | 1,424        | 1,858        |
| 2012               | 2,324                                                   | 2,753        | 11,007       | 3,163        | 22,557       | 1,925        | 1,754        | 1,160        | 6,562        | 2,040        |
| 2013               | 2,166                                                   | 3,361        | 2,804        | 11,028       | 3,980        | 17,565       | 1,203        | 947          | 634          | 1,951        |
| 2014               | 1,936                                                   | 2,174        | 3,684        | 2,732        | 4,957        | 4,921        | -620         | 996          | 1,620        | 2,390        |
| 2015               | 1,974                                                   | 1,758        | 2,304        | 6,922        | 4,849        | 6,521        | 9,766        | 6,171        | 1,453        | 3,027        |
| 2016               | 2,491                                                   | 1,659        | 1,735        | 1,824        | 3,342        | 4,148        | 3,993        | 6,877        | 5,091        | 2,849        |
| 2017               | 1,887                                                   | 2,954        | 1,424        | 1,433        | 933          | 3,812        | 1,863        | 8,062        | 3,057        | 4,935        |
| 2018               | 1,957                                                   | 2,752        | 2,297        | 1,752        | 2,389        | 1,719        | 4,095        | 1,743        | 18,426       | 3,908        |
| <b>Adopted (b)</b> | <b>1,920</b>                                            | <b>2,854</b> | <b>2,219</b> | <b>2,715</b> | <b>3,225</b> | <b>4,292</b> | <b>3,143</b> | <b>4,989</b> | <b>6,181</b> | <b>3,389</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Average real payment per claim incurred

| Accident Year      | Other Goods And Services PPCI (a) for development year: |            |            |            |           |           |           |           |           |           |            | Total      |              |
|--------------------|---------------------------------------------------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|--------------|
|                    | 0                                                       | 1          | 2          | 3          | 4         | 5         | 6         | 7         | 8         | 9         | 10 onwards |            |              |
| 2006               | 529                                                     | 553        | 139        | 137        | 22        | 17        | 0         | 0         | 0         | 0         | 0          | 25,793     | 27,191       |
| 2007               | 707                                                     | 481        | 212        | 102        | 105       | 25        | 26        | 0         | 0         | 0         | 0          | 12,846     | 14,504       |
| 2008               | 627                                                     | 516        | 157        | 102        | 51        | 99        | 11        | 13        | 0         | 0         | 0          | 6,601      | 8,177        |
| 2009               | 694                                                     | 620        | 279        | 90         | 91        | 38        | 53        | 16        | 12        | 0         | 0          | 143        | 2,037        |
| 2010               | 622                                                     | 1,025      | 297        | 167        | 59        | 29        | 24        | 93        | 15        | 10        | 0          | 91         | 2,432        |
| 2011               | 671                                                     | 740        | 892        | 179        | 106       | 41        | 28        | 25        | 97        | 7         | 0          | 65         | 2,852        |
| 2012               | 752                                                     | 678        | 259        | 471        | 81        | 383       | 22        | 18        | 9         | 50        | 0          | 70         | 2,794        |
| 2013               | 661                                                     | 654        | 269        | 136        | 282       | 71        | 241       | 10        | 5         | 3         | 0          | 67         | 2,401        |
| 2014               | 730                                                     | 588        | 191        | 152        | 78        | 83        | 67        | -7        | 6         | 8         | 0          | 86         | 1,982        |
| 2015               | 665                                                     | 668        | 185        | 88         | 135       | 86        | 67        | 100       | 62        | 6         | 0          | 93         | 2,156        |
| 2016               | 874                                                     | 803        | 168        | 90         | 40        | 46        | 57        | 38        | 58        | 39        | 0          | 72         | 2,287        |
| 2017               | 789                                                     | 750        | 321        | 72         | 42        | 17        | 34        | 20        | 58        | 21        | 0          | 154        | 2,279        |
| 2018               | 1,011                                                   | 738        | 305        | 132        | 43        | 45        | 17        | 22        | 15        | 113       | 0          | 116        | 2,556        |
| <b>Adopted (b)</b> | <b>891</b>                                              | <b>765</b> | <b>263</b> | <b>107</b> | <b>67</b> | <b>55</b> | <b>49</b> | <b>19</b> | <b>40</b> | <b>37</b> | <b>0</b>   | <b>104</b> | <b>2,395</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Estimates from models

| Accident Year  | Other Goods And Services            |               |               |           |      |
|----------------|-------------------------------------|---------------|---------------|-----------|------|
|                | Estimated outstanding claims        |               |               | Weighting |      |
|                | claims at 30 June 2018 (\$000s) (a) |               |               | PPAC      | PPCI |
|                | PPAC                                | PPCI          | Adopted       | PPAC      | PPCI |
| 2018           | 4,174                               | 4,201         | 4,182         | 70%       | 30%  |
| 2017           | 2,092                               | 2,168         | 2,115         | 70%       | 30%  |
| 2016           | 1,179                               | 1,518         | 1,450         | 20%       | 80%  |
| 2015           | 1,032                               | 1,241         | 1,032         | 100%      | 0%   |
| 2014           | 711                                 | 1,051         | 711           | 100%      | 0%   |
| 2013           | 778                                 | 865           | 778           | 100%      | 0%   |
| 2012           | 405                                 | 656           | 405           | 100%      | 0%   |
| 2011           | 267                                 | 588           | 267           | 100%      | 0%   |
| 2010           | 346                                 | 434           | 346           | 100%      | 0%   |
| 2009 & earlier | 1,252                               | 1,644         | 1,252         | 100%      | 0%   |
| <b>Total</b>   | <b>12,237</b>                       | <b>14,367</b> | <b>12,539</b> |           |      |

Notes: (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments



## C3.6 Legals

### Claim payments

| Accident Year | Claim payments (a) for development year: |           |           |           |           |         |         |         |         |         |            | Total     |
|---------------|------------------------------------------|-----------|-----------|-----------|-----------|---------|---------|---------|---------|---------|------------|-----------|
|               | 0                                        | 1         | 2         | 3         | 4         | 5       | 6       | 7       | 8       | 9       | 10 onwards |           |
| 2006          | 220,962                                  | 521,023   | 630,304   | 568,796   | 234,876   | 237,764 | 0       | 0       | 0       | 0       | 175,360    | 2,589,085 |
| 2007          | 101,442                                  | 499,512   | 688,390   | 786,769   | 365,276   | 216,776 | 139,945 | 0       | 0       | 0       | 120,818    | 2,918,928 |
| 2008          | 102,809                                  | 409,304   | 632,966   | 486,280   | 454,738   | 118,188 | 292,904 | 178,138 | 0       | 0       | 139,802    | 2,815,129 |
| 2009          | 104,263                                  | 553,131   | 459,063   | 465,487   | 473,244   | 166,346 | 146,740 | 72,882  | 86,698  | 0       | 290,914    | 2,818,768 |
| 2010          | 110,485                                  | 572,976   | 563,716   | 752,159   | 321,759   | 303,526 | 171,042 | 341,489 | 66,246  | 222,859 | 198,454    | 3,624,711 |
| 2011          | 119,748                                  | 435,187   | 911,353   | 435,657   | 327,544   | 296,488 | 143,894 | 73,735  | 73,122  | 116,630 | 144,012    | 3,077,370 |
| 2012          | 189,595                                  | 633,460   | 574,349   | 768,389   | 248,978   | 705,228 | 75,826  | 105,448 | 52,297  | 46,709  | 169,778    | 3,570,057 |
| 2013          | 192,251                                  | 592,132   | 775,905   | 604,921   | 1,139,497 | 588,270 | 216,238 | 139,320 | 58,533  | 56,996  | 168,270    | 4,532,333 |
| 2014          | 197,299                                  | 738,137   | 873,295   | 638,026   | 502,451   | 640,462 | 282,056 | 219,827 | 80,257  | 8,704   | 194,815    | 4,375,329 |
| 2015          | 143,327                                  | 907,677   | 880,787   | 499,253   | 660,560   | 392,914 | 344,651 | 349,078 | 114,010 | 181,815 | 230,916    | 4,704,988 |
| 2016          | 419,783                                  | 899,214   | 1,155,054 | 1,163,680 | 445,297   | 450,979 | 209,813 | 497,577 | 66,402  | 13,080  | 186,357    | 5,507,236 |
| 2017          | 388,426                                  | 1,419,215 | 1,561,753 | 1,011,523 | 484,070   | 420,027 | 231,269 | 162,886 | 34,962  | 69,404  | 375,823    | 6,159,358 |
| 2018          | 481,374                                  | 1,099,085 | 1,070,566 | 795,370   | 823,393   | 429,932 | 292,035 | 76,783  | 176,933 | 79,046  | 318,886    | 5,643,403 |

Note: Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

### Average real payment per claim finalised

| Accident Year      | Legals PPCF (a) for development year: |              |              |               |               |               |               |               |               |               |               |
|--------------------|---------------------------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                    | 0                                     | 1            | 2            | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10 onwards    |
| 2011               | 98                                    | 753          | 8,170        | 8,443         | 12,695        | 24,419        | 31,603        | 10,796        | 0             | 76,845        | 11,861        |
| 2012               | 148                                   | 940          | 5,584        | 18,675        | 12,606        | 85,698        | 9,214         | 9,153         | 9,079         | 9,460         | 10,858        |
| 2013               | 143                                   | 849          | 7,844        | 11,824        | 55,681        | 53,069        | 31,699        | 23,341        | 68,644        | 16,710        | 11,608        |
| 2014               | 158                                   | 988          | 6,972        | 11,620        | 18,891        | 43,911        | 36,528        | 128,110       | 18,709        | 5,072         | 9,083         |
| 2015               | 110                                   | 1,047        | 5,933        | 12,093        | 44,234        | 34,407        | 98,087        | 79,478        | 21,631        | 206,978       | 9,388         |
| 2016               | 362                                   | 1,145        | 8,030        | 17,662        | 47,986        | 34,713        | 22,610        | 89,367        | 17,889        | 2,819         | 33,471        |
| 2017               | 326                                   | 1,511        | 10,475       | 13,226        | 15,625        | 19,721        | 19,907        | 33,650        | 12,038        | 23,896        | 27,728        |
| 2018               | 428                                   | 1,274        | 6,204        | 9,271         | 29,821        | 27,249        | 42,307        | 38,932        | 35,885        | 16,032        | 20,211        |
| <b>Adopted (b)</b> | <b>390</b>                            | <b>1,319</b> | <b>7,464</b> | <b>12,694</b> | <b>26,716</b> | <b>31,093</b> | <b>35,291</b> | <b>71,796</b> | <b>22,384</b> | <b>22,384</b> | <b>22,384</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Average real payment per claim incurred

| Accident Year      | Legals PPCL (a) for development year: |            |            |            |            |            |           |            |           |           |            | Total        |
|--------------------|---------------------------------------|------------|------------|------------|------------|------------|-----------|------------|-----------|-----------|------------|--------------|
|                    | 0                                     | 1          | 2          | 3          | 4          | 5          | 6         | 7          | 8         | 9         | 10 onwards |              |
| 2006               | 135                                   | 313        | 404        | 328        | 134        | 137        | 0         | 0          | 0         | 0         | 26,351     | 27,801       |
| 2007               | 67                                    | 300        | 407        | 497        | 208        | 122        | 80        | 0          | 0         | 0         | 13,124     | 14,804       |
| 2008               | 58                                    | 255        | 360        | 273        | 272        | 64         | 156       | 96         | 0         | 0         | 6,743      | 8,277        |
| 2009               | 59                                    | 298        | 273        | 253        | 253        | 95         | 75        | 37         | 45        | 0         | 147        | 1,535        |
| 2010               | 61                                    | 307        | 290        | 427        | 166        | 155        | 93        | 167        | 32        | 109       | 93         | 1,900        |
| 2011               | 59                                    | 227        | 458        | 210        | 174        | 144        | 69        | 38         | 34        | 53        | 66         | 1,533        |
| 2012               | 88                                    | 289        | 276        | 356        | 111        | 346        | 34        | 47         | 25        | 20        | 71         | 1,662        |
| 2013               | 81                                    | 264        | 341        | 281        | 510        | 253        | 103       | 60         | 25        | 26        | 69         | 2,013        |
| 2014               | 84                                    | 309        | 388        | 279        | 232        | 285        | 120       | 104        | 34        | 4         | 88         | 1,926        |
| 2015               | 62                                    | 376        | 361        | 216        | 282        | 177        | 150       | 146        | 52        | 76        | 95         | 1,993        |
| 2016               | 179                                   | 366        | 453        | 451        | 183        | 182        | 89        | 205        | 26        | 6         | 74         | 2,213        |
| 2017               | 166                                   | 579        | 609        | 380        | 180        | 165        | 90        | 67         | 14        | 26        | 157        | 2,431        |
| 2018               | 200                                   | 461        | 429        | 304        | 304        | 157        | 113       | 29         | 71        | 31        | 118        | 2,216        |
| <b>Adopted (b)</b> | <b>192</b>                            | <b>467</b> | <b>497</b> | <b>380</b> | <b>222</b> | <b>168</b> | <b>97</b> | <b>100</b> | <b>36</b> | <b>21</b> | <b>115</b> | <b>2,297</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

## Estimates from models

| Legals         |                                                                   |               |               |           |      |
|----------------|-------------------------------------------------------------------|---------------|---------------|-----------|------|
| Accident Year  | Estimated outstanding claims claims at 30 June 2018 (\$'000s) (a) |               |               | Weighting |      |
|                | PPCF                                                              | PPCI          | Adopted       | PPCF      | PPCI |
| 2018           | 6,885                                                             | 5,872         | 6,581         | 70%       | 30%  |
| 2017           | 5,050                                                             | 4,491         | 4,882         | 70%       | 30%  |
| 2016           | 3,377                                                             | 3,291         | 3,308         | 20%       | 80%  |
| 2015           | 2,760                                                             | 2,327         | 2,760         | 100%      | 0%   |
| 2014           | 1,686                                                             | 1,726         | 1,686         | 100%      | 0%   |
| 2013           | 1,552                                                             | 1,222         | 1,552         | 100%      | 0%   |
| 2012           | 746                                                               | 861           | 746           | 100%      | 0%   |
| 2011           | 388                                                               | 580           | 388           | 100%      | 0%   |
| 2010           | 511                                                               | 440           | 511           | 100%      | 0%   |
| 2009 & earlier | 2,123                                                             | 2,566         | 2,123         | 100%      | 0%   |
| <b>Total</b>   | <b>25,079</b>                                                     | <b>23,375</b> | <b>24,538</b> |           |      |

**Notes:** (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments

## C3.7 Redemptions and non-economic lump sum

### Claim payments

| Accident Year | Claim payments (a) for development year: |           |           |           |            |           |           |           |           |           |            |            |
|---------------|------------------------------------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|------------|------------|
|               | 0                                        | 1         | 2         | 3         | 4          | 5         | 6         | 7         | 8         | 9         | 10 onwards | Total      |
| 2006          | 425,384                                  | 1,572,841 | 1,469,834 | 1,475,560 | 944,031    | 1,104,674 | 0         | 0         | 0         | 0         | 2,624,065  | 9,616,389  |
| 2007          | 131,929                                  | 2,142,270 | 2,382,640 | 2,541,463 | 2,728,467  | 2,072,153 | 135,271   | 0         | 0         | 0         | 1,807,903  | 13,942,096 |
| 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         | 2,091,985  | 16,899,481 |
| 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         | 4,353,200  | 23,602,213 |
| 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    | 2,969,639  | 26,629,849 |
| 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 | 2,154,988  | 31,573,744 |
| 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 | 2,540,533  | 27,611,455 |
| 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   | 2,517,981  | 31,433,498 |
| 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         | 2,915,194  | 29,426,920 |
| 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   | 3,455,400  | 23,677,818 |
| 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 | 2,788,625  | 32,668,635 |
| 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 | 5,623,780  | 41,555,354 |
| 2018          | 1,084,900                                | 4,345,693 | 8,054,010 | 9,123,783 | 4,872,947  | 1,349,024 | 1,251,323 | 518,297   | 1,608,148 | 341,066   | 4,771,777  | 37,320,968 |

**Note:** Data extracted from the WIMS system up to 30 June 2018. DY10+ using the Report 4 payments

### Average real payment per claim finalised

| Accident Year      | Redemptions And Non-Economic Lump Sum PPCF (a) for development year: |              |               |                |                |                |                |                |                |                |                |
|--------------------|----------------------------------------------------------------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                    | 0                                                                    | 1            | 2             | 3              | 4              | 5              | 6              | 7              | 8              | 9              | 10 onwards     |
| 2011               | 519                                                                  | 5,311        | 58,893        | 102,510        | 180,391        | 376,582        | 157,736        | 95,586         | 0              | 1,116,802      | 177,485        |
| 2012               | 227                                                                  | 5,145        | 52,005        | 115,513        | 172,674        | 327,953        | 169,917        | 151,972        | 106,599        | 271,020        | 162,485        |
| 2013               | 593                                                                  | 7,217        | 43,515        | 61,494         | 623,873        | 114,516        | 62,506         | 62,272         | 268,195        | 166,954        | 173,703        |
| 2014               | 370                                                                  | 5,728        | 22,364        | 104,739        | 126,647        | 233,305        | 181,926        | 2,119,378      | 327,520        | 0              | 135,913        |
| 2015               | 401                                                                  | 3,430        | 35,981        | 116,893        | 49,258         | 164,173        | 556,286        | 241,029        | 12,991         | 986,284        | 140,486        |
| 2016               | 469                                                                  | 2,814        | 36,350        | 131,226        | 309,786        | 242,620        | 191,673        | 173,629        | 868,482        | 270,861        | 500,849        |
| 2017               | 700                                                                  | 3,554        | 54,348        | 97,363         | 127,155        | 167,204        | 367,936        | 384,057        | 286,019        | 601,437        | 414,923        |
| 2018               | 965                                                                  | 5,036        | 46,671        | 106,348        | 176,485        | 85,501         | 181,278        | 262,798        | 326,159        | 69,174         | 302,436        |
| <b>Adopted (b)</b> | <b>965</b>                                                           | <b>5,036</b> | <b>45,809</b> | <b>110,806</b> | <b>172,977</b> | <b>162,369</b> | <b>245,638</b> | <b>245,638</b> | <b>245,638</b> | <b>245,638</b> | <b>235,780</b> |

**Notes:** (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Average real payment per claim incurred

| Accident Year      | Redemptions And Non-Economic Lump Sum PPCI (a) for development year: |              |              |              |              |              |            |            |            |              | Total        |               |
|--------------------|----------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|--------------|--------------|---------------|
|                    | 0                                                                    | 1            | 2            | 3            | 4            | 5            | 6          | 7          | 8          | 9 10 onwards |              |               |
| 2006               | 259                                                                  | 944          | 942          | 850          | 538          | 637          | 0          | 0          | 0          | 0            | 394,315      | 398,486       |
| 2007               | 87                                                                   | 1,286        | 1,410        | 1,606        | 1,550        | 1,165        | 77         | 0          | 0          | 0            | 196,387      | 203,568       |
| 2008               | 53                                                                   | 947          | 1,355        | 2,672        | 1,339        | 957          | 827        | 259        | 0          | 0            | 100,907      | 109,314       |
| 2009               | 35                                                                   | 1,400        | 2,279        | 2,121        | 1,982        | 1,158        | 844        | 477        | 278        | 0            | 2,192        | 12,767        |
| 2010               | 156                                                                  | 1,491        | 2,305        | 3,150        | 1,670        | 1,205        | 378        | 1,849      | 224        | 11           | 1,397        | 13,835        |
| 2011               | 313                                                                  | 1,601        | 3,305        | 2,552        | 2,479        | 2,220        | 344        | 334        | 718        | 771          | 990          | 15,627        |
| 2012               | 134                                                                  | 1,581        | 2,572        | 2,205        | 1,517        | 1,326        | 626        | 773        | 289        | 567          | 1,065        | 12,656        |
| 2013               | 337                                                                  | 2,248        | 1,894        | 1,460        | 5,715        | 545          | 202        | 161        | 97         | 259          | 1,030        | 13,947        |
| 2014               | 196                                                                  | 1,794        | 1,243        | 2,515        | 1,554        | 1,514        | 600        | 1,713      | 603        | 0            | 1,318        | 13,049        |
| 2015               | 224                                                                  | 1,231        | 2,187        | 2,092        | 314          | 845          | 849        | 441        | 32         | 363          | 1,428        | 10,006        |
| 2016               | 232                                                                  | 898          | 2,049        | 3,350        | 1,179        | 1,274        | 758        | 398        | 1,272      | 547          | 1,107        | 13,065        |
| 2017               | 356                                                                  | 1,361        | 3,159        | 2,797        | 1,463        | 1,400        | 1,656      | 760        | 328        | 661          | 2,348        | 16,288        |
| 2018               | 450                                                                  | 1,821        | 3,224        | 3,492        | 1,797        | 492          | 483        | 197        | 645        | 132          | 1,772        | 14,506        |
| <b>Adopted (b)</b> | <b>450</b>                                                           | <b>1,821</b> | <b>3,191</b> | <b>3,210</b> | <b>1,484</b> | <b>1,100</b> | <b>870</b> | <b>686</b> | <b>588</b> | <b>338</b>   | <b>1,365</b> | <b>15,104</b> |

Notes: (a) In 30 June 2018 values

(b) Adopted for 30 June 2018 valuation

### Estimates from models

| Accident Year  | Redemptions And Non-Economic Lump Sum<br>Estimated outstanding claims<br>claims at 30 June 2018 (\$000s) (a) |                |                | Weighting |      |
|----------------|--------------------------------------------------------------------------------------------------------------|----------------|----------------|-----------|------|
|                | PPCF                                                                                                         | PPCI           | Adopted        | PPCF      | PPCI |
| 2018           | 42,048                                                                                                       | 39,651         | 41,329         | 70%       | 30%  |
| 2017           | 34,047                                                                                                       | 33,984         | 34,028         | 70%       | 30%  |
| 2016           | 23,837                                                                                                       | 26,741         | 26,160         | 20%       | 80%  |
| 2015           | 18,174                                                                                                       | 18,892         | 18,174         | 100%      | 0%   |
| 2014           | 11,393                                                                                                       | 15,107         | 11,393         | 100%      | 0%   |
| 2013           | 11,585                                                                                                       | 11,886         | 11,585         | 100%      | 0%   |
| 2012           | 5,832                                                                                                        | 8,698          | 5,832          | 100%      | 0%   |
| 2011           | 3,858                                                                                                        | 6,809          | 3,858          | 100%      | 0%   |
| 2010           | 5,064                                                                                                        | 4,833          | 5,064          | 100%      | 0%   |
| 2009 & earlier | 20,927                                                                                                       | 20,929         | 20,927         | 100%      | 0%   |
| <b>Total</b>   | <b>176,764</b>                                                                                               | <b>187,532</b> | <b>178,350</b> |           |      |

Notes: (a) From models described above, in 30 June 2018 values and includes superimposed inflation but excludes the 2015 legislative amendments

### C3.8 Large claims

| Large claims (\$000s) | Case estimates | Development | Current values |
|-----------------------|----------------|-------------|----------------|
|                       | (a)            | factor (b)  | (c)            |
| 2018                  | 3,612          | 0.00        | 0              |
| 2017                  | 1,598          | 0.00        | 0              |
| 2016                  | 4,668          | 1.00        | 4,668          |
| 2015                  | 5,949          | 1.00        | 5,949          |
| 2014                  | 0              | 0.00        | 0              |
| 2013                  | 0              | 0.00        | 0              |
| 2012                  | 1,819          | 0.00        | 0              |
| 2011                  | 1,043          | 0.00        | 0              |
| 2010                  | 0              | 0.00        | 0              |
| 2009 & earlier        | 25,516         | 1.00        | 25,516         |
| <b>Total</b>          | <b>44,205</b>  |             | <b>36,133</b>  |

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) x (b)

## C 4 Adopted estimates of outstanding claims

### C4.1 Gross central estimates from models in 30 June 2018 values, excluding allowance for Act changes

| Estimates of outstanding claims at 30 June 2018 (\$000s) (a) (b) |                 |                      |                                                                              |               |                          |                |                                       |                                   |       |
|------------------------------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------|---------------|--------------------------|----------------|---------------------------------------|-----------------------------------|-------|
| Accident year                                                    | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), |               | Other Goods And Services | Legals         | Redemptions And Non-Economic Lump Sum | Allowance for active large claims | Total |
|                                                                  |                 |                      | Death                                                                        | Death         |                          |                |                                       |                                   |       |
| 2018                                                             | 35,037          | 10,146               | 10,802                                                                       | 4,182         | 6,581                    | 41,329         | 0                                     | 108,077                           |       |
| 2017                                                             | 16,850          | 4,055                | 4,944                                                                        | 2,115         | 4,882                    | 34,028         | 0                                     | 66,874                            |       |
| 2016                                                             | 10,686          | 2,293                | 2,599                                                                        | 1,450         | 3,308                    | 26,160         | 4,668                                 | 51,165                            |       |
| 2015                                                             | 7,349           | 1,786                | 1,843                                                                        | 1,032         | 2,760                    | 18,174         | 5,949                                 | 38,894                            |       |
| 2014                                                             | 4,608           | 1,187                | 1,153                                                                        | 711           | 1,686                    | 11,393         | 0                                     | 20,738                            |       |
| 2013                                                             | 5,009           | 1,186                | 1,188                                                                        | 778           | 1,552                    | 11,585         | 0                                     | 21,298                            |       |
| 2012                                                             | 2,697           | 609                  | 551                                                                          | 405           | 746                      | 5,832          | 0                                     | 10,840                            |       |
| 2011                                                             | 1,723           | 361                  | 336                                                                          | 267           | 388                      | 3,858          | 0                                     | 6,933                             |       |
| 2010                                                             | 2,334           | 431                  | 441                                                                          | 346           | 511                      | 5,064          | 0                                     | 9,127                             |       |
| 2009 & earlier                                                   | 9,171           | 1,950                | 1,699                                                                        | 1,252         | 2,123                    | 20,927         | 25,516                                | 62,637                            |       |
| <b>Total</b>                                                     | <b>95,464</b>   | <b>24,003</b>        | <b>25,556</b>                                                                | <b>12,539</b> | <b>24,538</b>            | <b>178,350</b> | <b>36,133</b>                         | <b>396,583</b>                    |       |

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

(b) In 30 June 2018 values and includes superimposed inflation

### C4.2 Gross central estimates from models in 30 June 2018 values, including allowance for Act changes

| Estimates of outstanding claims at 30 June 2018 (\$000s) (a) (b) |                 |                      |                                                                              |               |                          |                |                                       |                                   |       |
|------------------------------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------|---------------|--------------------------|----------------|---------------------------------------|-----------------------------------|-------|
| Accident year                                                    | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), |               | Other Goods And Services | Legals         | Redemptions And Non-Economic Lump Sum | Allowance for active large claims | Total |
|                                                                  |                 |                      | Death                                                                        | Death         |                          |                |                                       |                                   |       |
| 2018                                                             | 32,599          | 9,586                | 10,905                                                                       | 3,747         | 6,581                    | 41,329         | 0                                     | 104,748                           |       |
| 2017                                                             | 14,549          | 3,562                | 5,031                                                                        | 1,735         | 4,882                    | 34,028         | 0                                     | 63,787                            |       |
| 2016                                                             | 8,515           | 1,796                | 2,683                                                                        | 1,035         | 3,308                    | 26,160         | 4,668                                 | 48,166                            |       |
| 2015                                                             | 7,349           | 1,786                | 1,843                                                                        | 1,032         | 2,760                    | 18,174         | 5,949                                 | 38,894                            |       |
| 2014                                                             | 4,608           | 1,187                | 1,153                                                                        | 711           | 1,686                    | 11,393         | 0                                     | 20,738                            |       |
| 2013                                                             | 5,009           | 1,186                | 1,188                                                                        | 778           | 1,552                    | 11,585         | 0                                     | 21,298                            |       |
| 2012                                                             | 2,697           | 609                  | 551                                                                          | 405           | 746                      | 5,832          | 0                                     | 10,840                            |       |
| 2011                                                             | 1,723           | 361                  | 336                                                                          | 267           | 388                      | 3,858          | 0                                     | 6,933                             |       |
| 2010                                                             | 2,334           | 431                  | 441                                                                          | 346           | 511                      | 5,064          | 0                                     | 9,127                             |       |
| 2009 & earlier                                                   | 9,171           | 1,950                | 1,699                                                                        | 1,252         | 2,123                    | 20,927         | 25,516                                | 62,637                            |       |
| <b>Total</b>                                                     | <b>88,555</b>   | <b>22,454</b>        | <b>25,831</b>                                                                | <b>11,308</b> | <b>24,538</b>            | <b>178,350</b> | <b>36,133</b>                         | <b>387,169</b>                    |       |

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

(b) In 30 June 2018 values and includes superimposed inflation

### C4.3 Average claim sizes

| Average claim size at 30 June 2018 (\$) (a) |                 |                      |                                                                                    |                          |        |                                       |                                   |         |  |
|---------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------------|--------------------------|--------|---------------------------------------|-----------------------------------|---------|--|
| Accident year                               | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death | Other Goods And Services | Legals | Redemptions And Non-Economic Lump Sum | Allowance for active large claims | Adopted |  |
| 2018                                        | 17,307          | 7,282                | 6,646                                                                              | 2,545                    | 2,895  | 17,373                                |                                   | 54,049  |  |
| 2017                                        | 16,487          | 6,475                | 5,641                                                                              | 2,243                    | 2,644  | 16,241                                |                                   | 49,732  |  |
| 2016                                        | 14,859          | 6,244                | 5,241                                                                              | 2,338                    | 2,491  | 15,142                                |                                   | 48,157  |  |
| 2015                                        | 14,406          | 6,369                | 4,665                                                                              | 2,310                    | 2,382  | 14,633                                |                                   | 47,010  |  |
| 2014                                        | 13,319          | 5,191                | 4,725                                                                              | 1,941                    | 2,208  | 12,211                                |                                   | 39,596  |  |
| 2013                                        | 14,518          | 4,911                | 4,367                                                                              | 1,891                    | 2,096  | 13,788                                |                                   | 41,571  |  |
| 2012                                        | 12,175          | 4,686                | 3,981                                                                              | 1,913                    | 1,701  | 11,000                                |                                   | 35,456  |  |
| 2011                                        | 11,375          | 5,077                | 3,367                                                                              | 2,107                    | 1,697  | 11,192                                |                                   | 34,816  |  |
| 2010                                        | 14,317          | 4,987                | 4,403                                                                              | 2,151                    | 1,683  | 12,355                                |                                   | 39,897  |  |

**Note:** (a) In 30 June 2018 values, from results in appendix C4.2, includes superimposed inflation and 2015 legislation amendments

### C4.4 Relationship to case estimates

| Ratio of outstanding to case estimates at 30 June 2018 (%) (a) |                 |                      |                                                                                    |                          |        |                                       |                                   |         |  |
|----------------------------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------------|--------------------------|--------|---------------------------------------|-----------------------------------|---------|--|
| Accident year                                                  | Weekly Benefits | Medical And Hospital | Allied Health, Vocational Rehabilitation, Non-Compensation Payments (Other), Death | Other Goods And Services | Legals | Redemptions And Non-Economic Lump Sum | Allowance for active large claims | Adopted |  |
| 2018                                                           | 49%             | 15%                  | 17%                                                                                | 6%                       | 10%    | 63%                                   | 0%                                | 159%    |  |
| 2017                                                           | 42%             | 10%                  | 14%                                                                                | 5%                       | 14%    | 98%                                   | 0%                                | 183%    |  |
| 2016                                                           | 36%             | 8%                   | 11%                                                                                | 4%                       | 14%    | 111%                                  | 20%                               | 204%    |  |
| 2015                                                           | 36%             | 9%                   | 9%                                                                                 | 5%                       | 14%    | 90%                                   | 29%                               | 193%    |  |
| 2014                                                           | 61%             | 16%                  | 15%                                                                                | 9%                       | 22%    | 150%                                  | 0%                                | 274%    |  |
| 2013                                                           | 48%             | 11%                  | 11%                                                                                | 7%                       | 15%    | 111%                                  | 0%                                | 203%    |  |
| 2012                                                           | 47%             | 11%                  | 10%                                                                                | 7%                       | 13%    | 102%                                  | 0%                                | 190%    |  |
| 2011                                                           | 46%             | 10%                  | 9%                                                                                 | 7%                       | 10%    | 102%                                  | 0%                                | 183%    |  |
| 2010                                                           | 53%             | 10%                  | 10%                                                                                | 8%                       | 12%    | 114%                                  | 0%                                | 205%    |  |
| 2009 & earlier                                                 | 23%             | 5%                   | 4%                                                                                 | 3%                       | 5%     | 52%                                   | 63%                               | 155%    |  |

**Note:** (a) In 30 June 2018 values, from results in appendix C4.2, includes superimposed inflation and 2015 legislation amendments

### ***C4.5 Summary of gross adopted estimates in 30 June 2018 values***

| Accident year  | Estimate of outstanding claims (a)<br>\$000s | Estimate of outstanding claims (b)<br>\$000s | Average claim size (b)<br>\$ | Ratio of outstanding to case estimates (b) |
|----------------|----------------------------------------------|----------------------------------------------|------------------------------|--------------------------------------------|
| 2018           | 108,077                                      | 104,748                                      | 54,049                       | 159%                                       |
| 2017           | 66,874                                       | 63,787                                       | 49,732                       | 183%                                       |
| 2016           | 51,165                                       | 48,166                                       | 48,157                       | 204%                                       |
| 2015           | 38,894                                       | 38,894                                       | 47,010                       | 193%                                       |
| 2014           | 20,738                                       | 20,738                                       | 39,596                       | 274%                                       |
| 2013           | 21,298                                       | 21,298                                       | 41,571                       | 203%                                       |
| 2012           | 10,840                                       | 10,840                                       | 35,456                       | 190%                                       |
| 2011           | 6,933                                        | 6,933                                        | 34,816                       | 183%                                       |
| 2010           | 9,127                                        | 9,127                                        | 39,897                       | 205%                                       |
| 2009 & earlier | 62,637                                       | 62,637                                       |                              | 155%                                       |
| <b>Total</b>   | <b>396,583</b>                               | <b>387,169</b>                               |                              | <b>179%</b>                                |

**Notes:** (a) in 30 June 2018 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 2018 excluding expenses (\$000s) |                     |                 |                  |
|-------------------------------------------------------------|---------------------|-----------------|------------------|
| Accident year ending                                        | 30 June 2018 values | Inflated values | Infl/disc values |
| 30 June                                                     |                     |                 |                  |
| 2018                                                        | 104,748             | 111,399         | 103,394          |
| 2017                                                        | 63,787              | 68,405          | 62,868           |
| 2016                                                        | 48,166              | 52,283          | 47,401           |
| 2015                                                        | 38,894              | 42,580          | 38,231           |
| 2014                                                        | 20,738              | 22,903          | 20,344           |
| 2013                                                        | 21,298              | 23,544          | 20,893           |
| 2012                                                        | 10,840              | 12,054          | 10,624           |
| 2011                                                        | 6,933               | 7,697           | 6,797            |
| 2010                                                        | 9,127               | 10,094          | 8,953            |
| 2009 & earlier                                              | 62,637              | 67,785          | 61,723           |
| <b>Total</b>                                                | <b>387,169</b>      | <b>418,744</b>  | <b>381,228</b>   |

**Note:** Includes superimposed inflation and 2015 legislative amendments

### ***C4.7 Net outstanding claims provision***

Estimates at 30 June 2018 (\$000s)

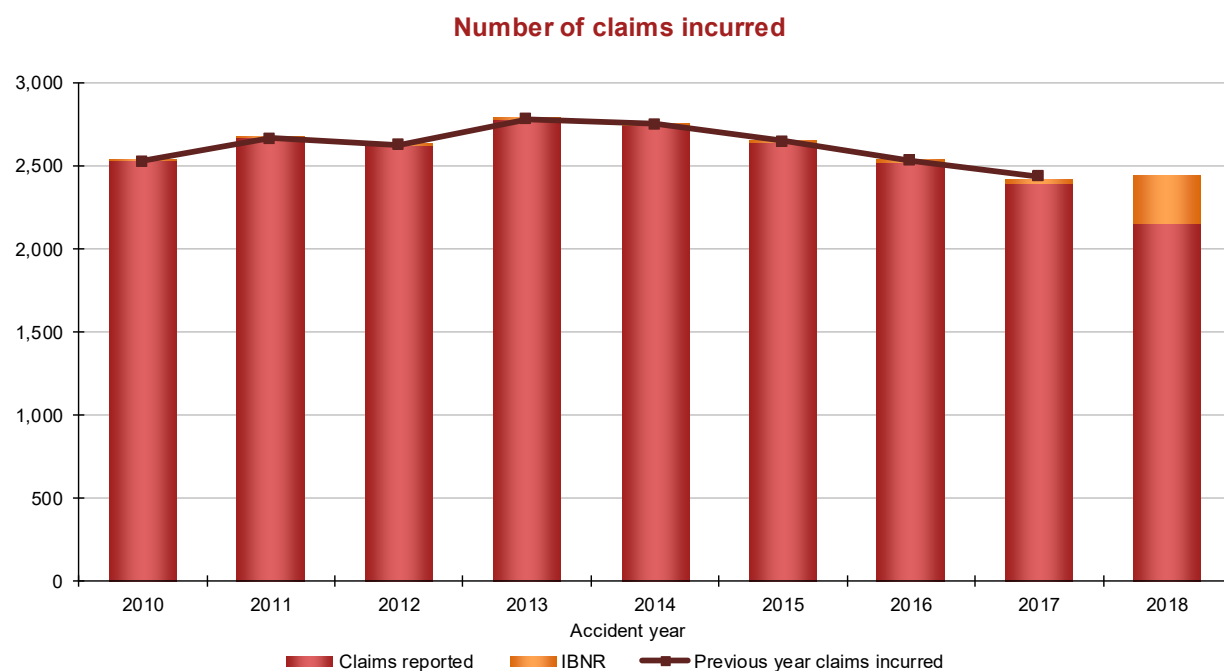
|       | Gross o/s liability (a) | Reinsurance recoveries (b) | Net o/s liability (c) | Claims handling expenses (d) | Net central estimate (e) | Risk margin (f) | Net Provision (g) |
|-------|-------------------------|----------------------------|-----------------------|------------------------------|--------------------------|-----------------|-------------------|
| Total | 381,228                 | 25,303                     | 355,925               | 21,356                       | 377,281                  | 45,544          | 422,825           |

- Notes:**
- (a) from table above
  - (b) based on the reinsurance information provided by insurers on large claims
  - (c) = (a) – (b)
  - (d) = (c) x 6%
  - (e) = (c) + (d)
  - (f) = (e) x 12.07%
  - (g) = (e) + (f)

# Appendix D Insurer claims statistics

## D 1 Number of claims incurred

Decreasing trend from 2013 peak to 2017, stabilising in 2018



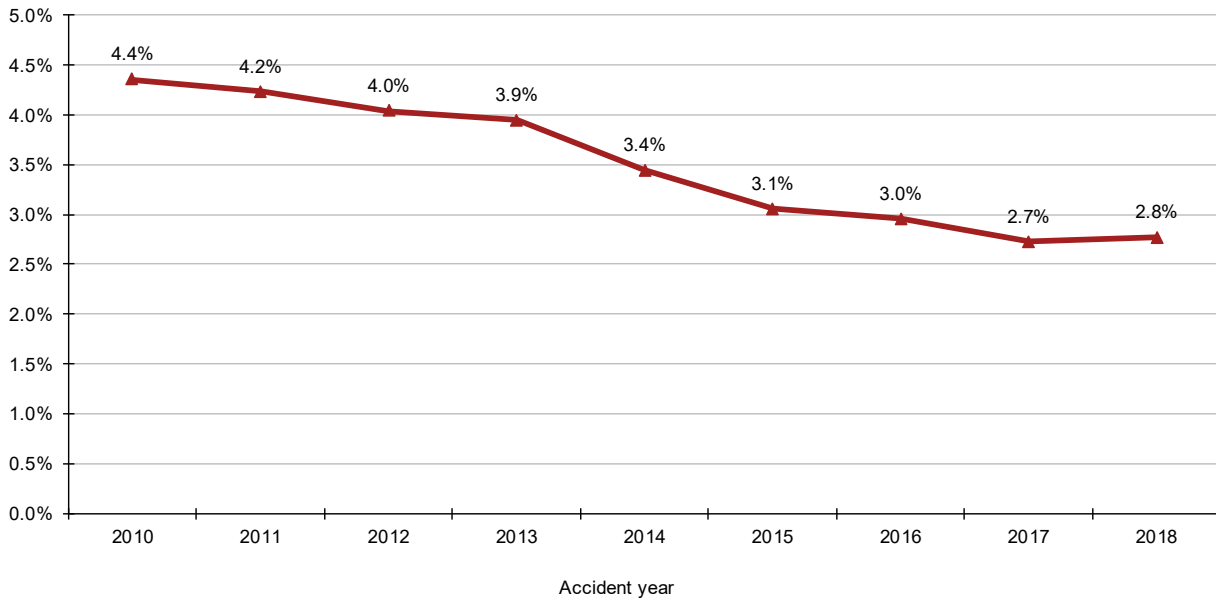
The main points to highlight from this chart are:

- 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 2018 accident year are 2,442, which is 23 (0.9%) more than 2017
- 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, slightly increasing in 2018*

**Claim frequency per \$86,525 of real wages**



The claim frequency is calculated as:

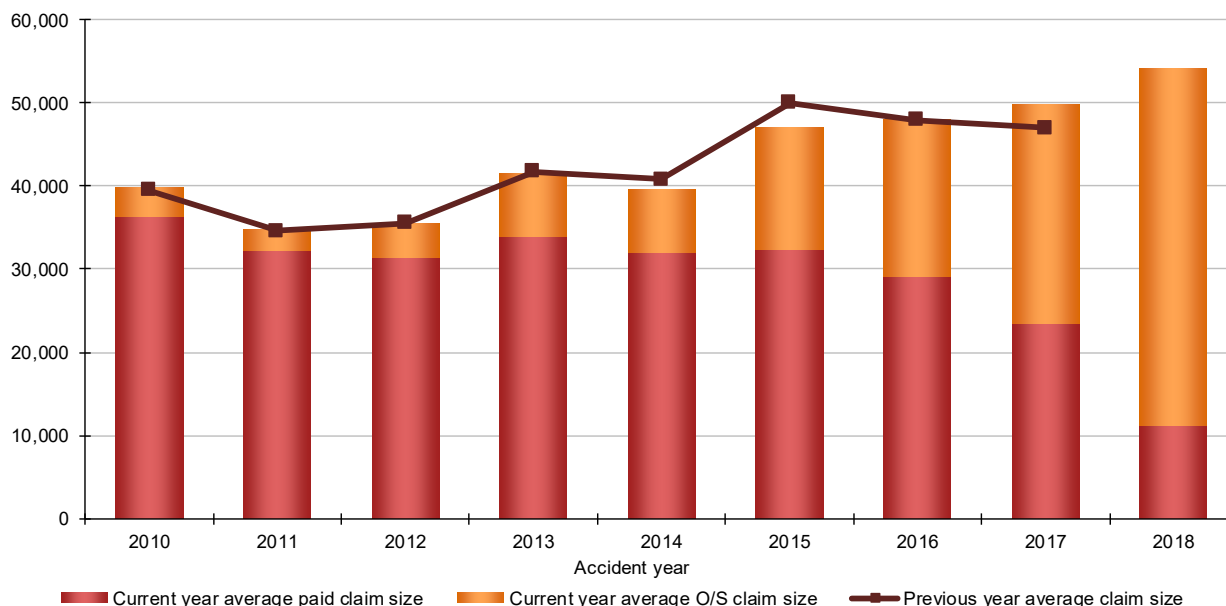
$$\frac{\text{the number of claims incurred}}{\text{estimated number of full time equivalent employees}}$$

To estimate the number of employees we have used the wages provided, inflated this to 2018 values and divided by \$86,525 (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 2018 is estimated to be significantly higher than all prior years due to high payments and case estimates at 30 June 2018*

Gross average claim size in 30 June 2018 values



Since 2010 the gross average claim size (in 2018 values):

- Exhibited volatility due in part to large claims
- Dropped to a low of around \$34,800 in 2011, caused by lower than average redemption payments
- Exhibited an increasing trend from around \$34,800 in 2011 to around \$49,700 in 2017 and increased significantly to \$54,000 in 2018

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 2018 accident year, where a high proportion (79%) of the average claim size relates to uncertain future claims development.

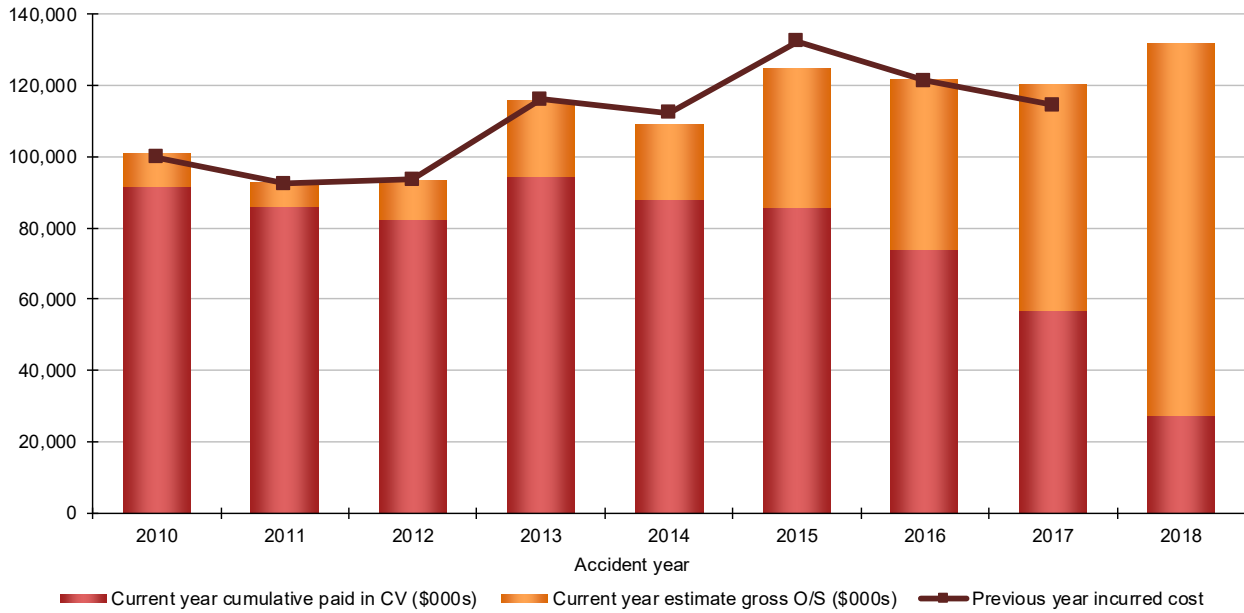
Compared to the previous valuation, the gross average claim size is similar for most years with the exception of 2015, where estimates decreased. This was mainly due to a decrease in the size of one large claim. 2017 has increased to an increase in claims experience.

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

### ***D 3 Gross incurred cost***

*2018 incurred cost is \$132.0 million, which is higher than all years from 2010*

**Gross incurred cost in 30 June 2018 values**



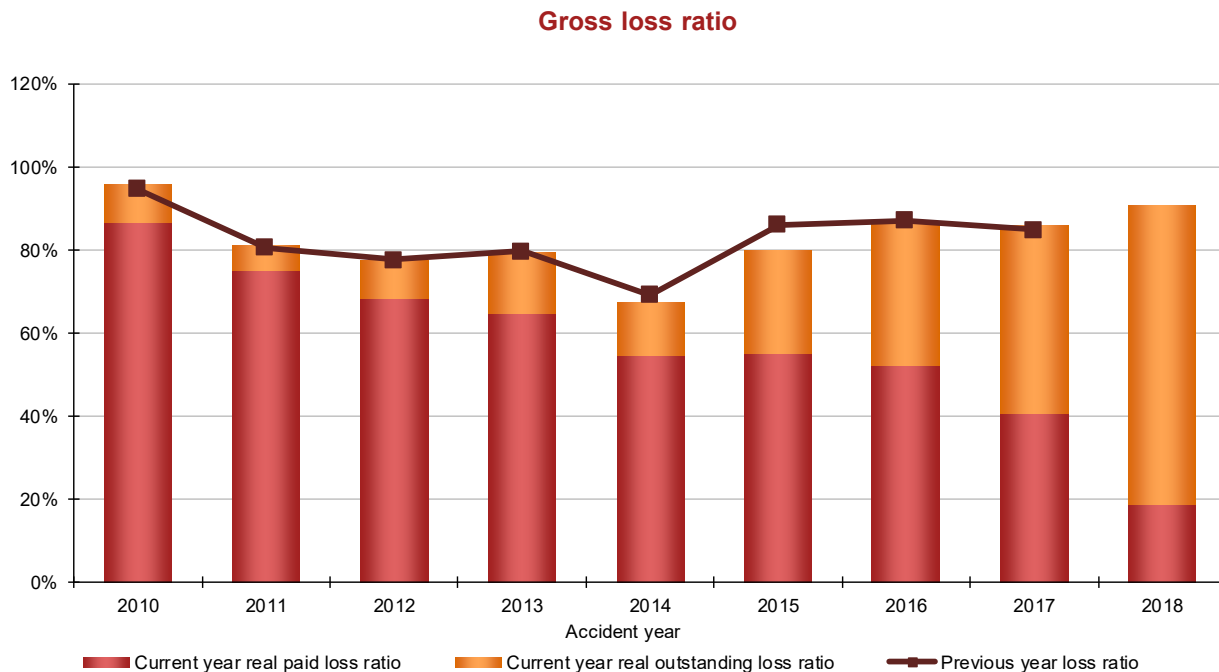
The gross incurred cost in 30 June 2018 values follows a similar pattern to the average claim size.

Over the period shown in the graph, the proportion outstanding increases from 7% of the total incurred cost in 2011 to 79% of the total incurred cost for 2018.

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.

## D 4 Gross loss ratios

*Loss ratio for 2018 estimated at 91%, which is higher than all years with the exception of 2010*



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

$$\frac{\text{(Past claim payments to 30 June 2018+ estimated outstanding liability at 30 June 2018)}}{\text{Gross developed earned premium}}$$

The past claim payments, estimated outstanding liability and gross developed earned premium are all in 30 June 2018 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, we have continued 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:

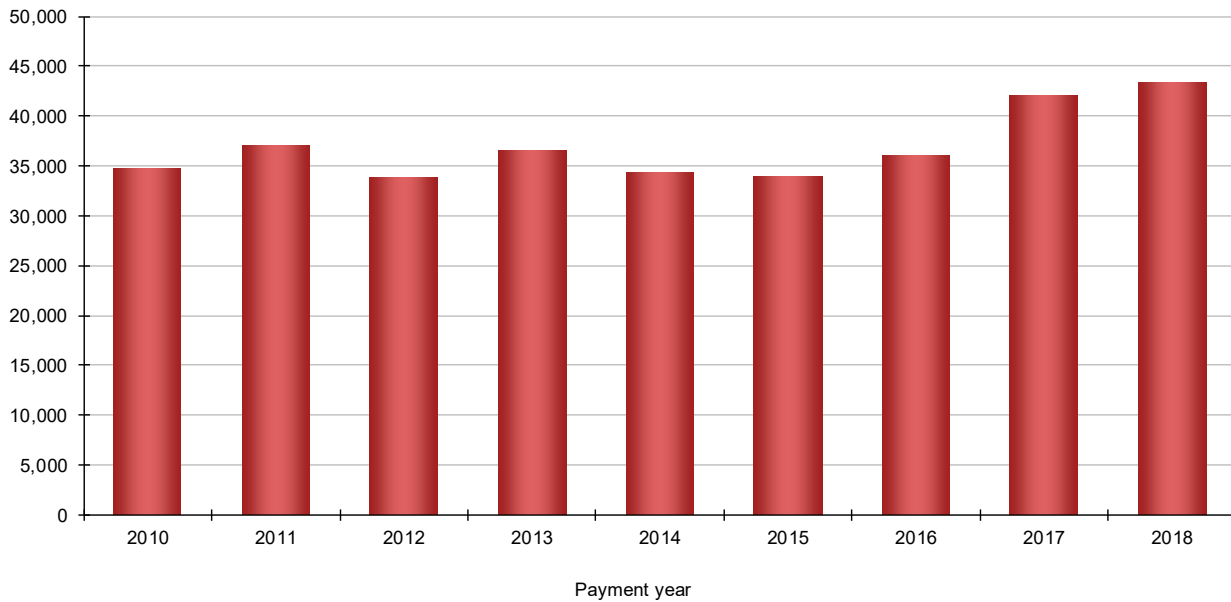
- There was a decreasing trend in the loss ratio from the high of 96% in 2010 to the low of 67% in 2014 due to premium and wages growth exceeding claims cost increases
- The loss ratio increased from 2014 to 80% in 2015 before stabilising over 2016 and 2017 at 86%
- The 2015 loss ratio is lower than last year due to a decrease in the incurred cost
- The 2018 loss ratio of 91% is higher than all prior years other than 2010.

## ***D 5 Payment per claim incurred***

By payment year

*2018 payment year is significantly higher compared to all prior years*

**Average real PPCI for DYs 0-6**



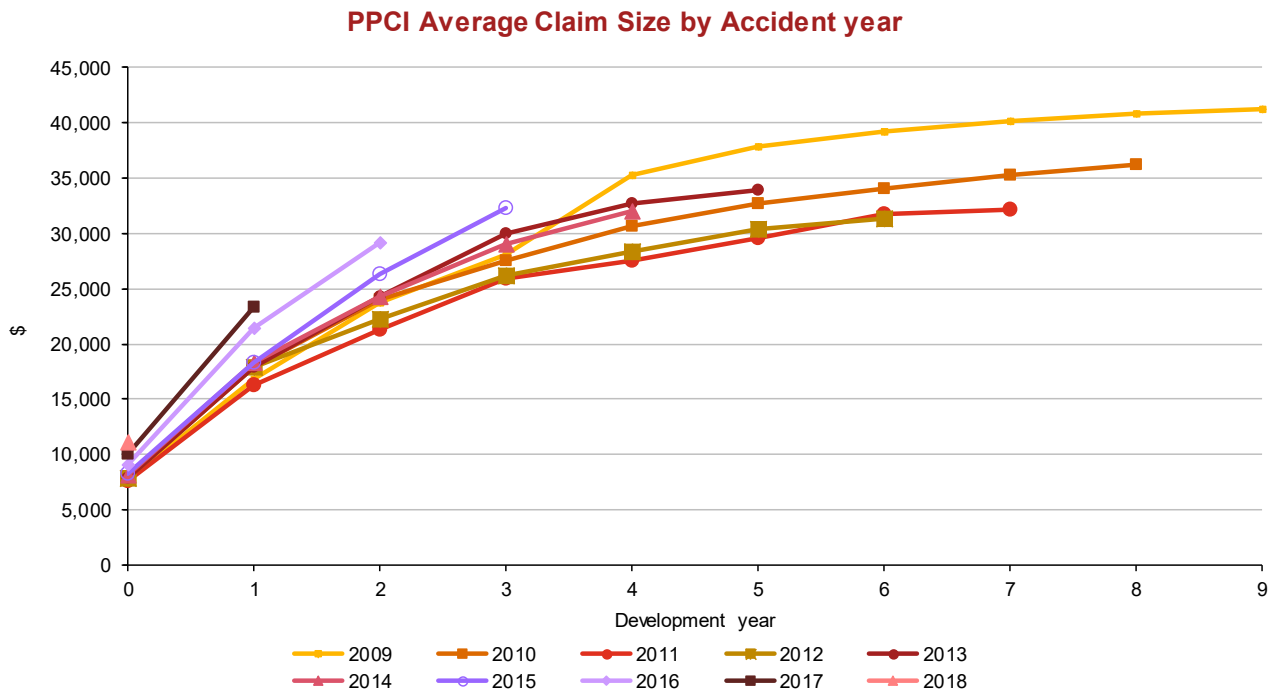
The average PPCI for DYs 0 to 6 was relatively stable between \$33,800 and \$36,500, up until 2016.

The average PPCI increased by 17% in 2017 due to higher payments for the three most recent accident years.

The 2018 payment year is \$43,400, which is \$1,250 (3.0%) higher than the 2017 payment year.

By accident year

*Increasing evidence of superimposed inflation from 2015 to 2018*



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

$$\frac{\text{sum of claim payments by development year made to date (in 30 June 2018 values)}}{\text{number of claims incurred to date}}$$

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 increasing evidence of superimposed inflation over recent years from 2015.

# Appendix E Insurer financial year claims experience

## E1 Aggregate claims experience during 2017/18

### E1.1 Summary of overall claim experience over 2017/18

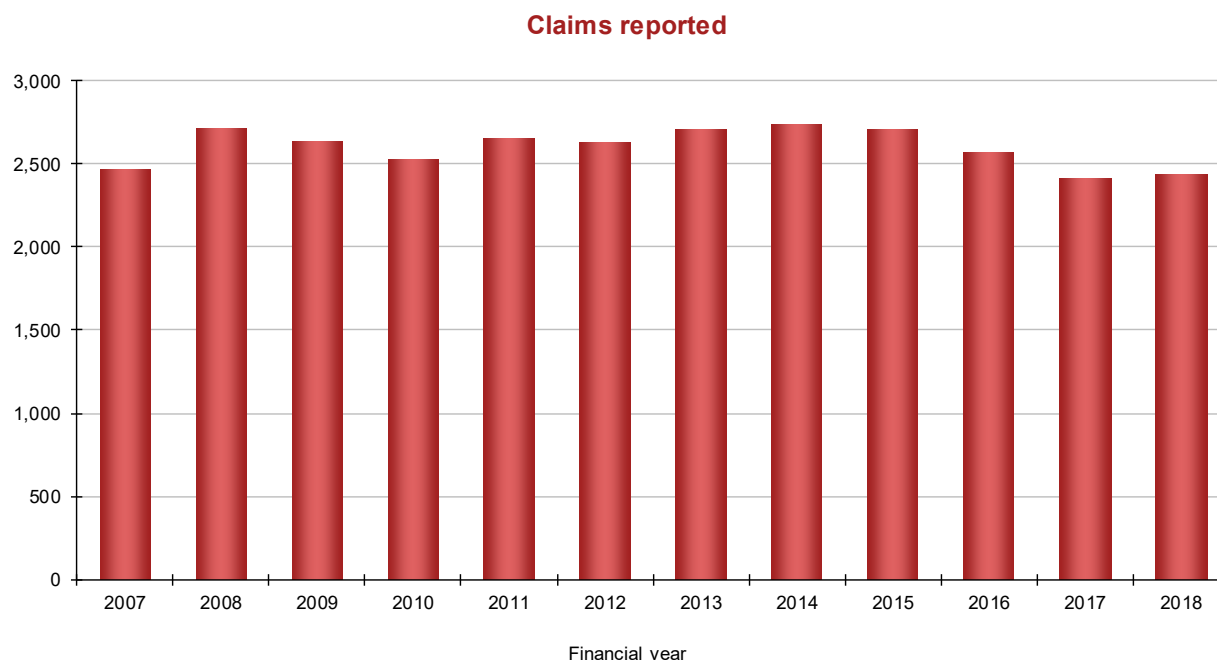
The overall claims experience over 2017/18 is generally unfavourable compared to 2016/17.

- An increase (0.7%) in the number of claims reported
- A decrease (2.9%) in the amount of real claim payments
- An increase (4.9%) in the number of active claims at the end of the year
- A slower finalisation rate (58.0% compared to 60.8%)
- An increase (6.1%) in case estimates.

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

### E1.2 Claim reports

*Claim reports have increased by 0.7% in 2018*

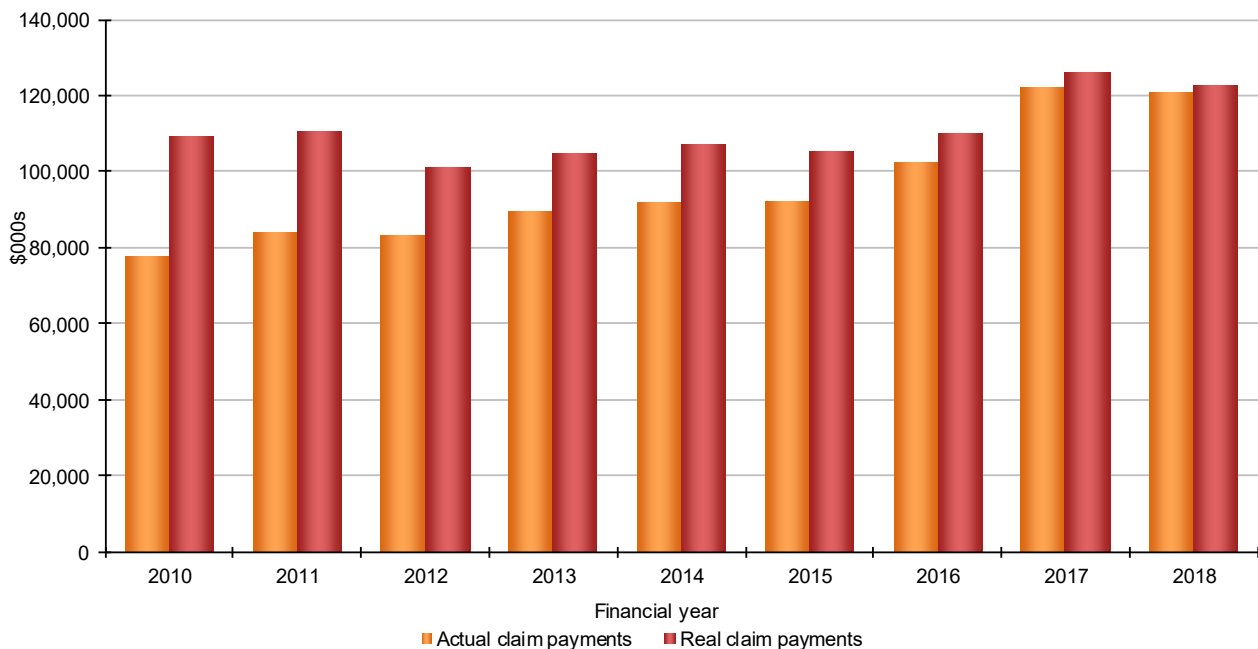


In 2018 there were 2,435 claims reported, which was 18 (0.7%) more than 2017.

## E1.3 Claim payments

*Real payments in 2018 of \$122.4 million are slightly lower than 2017*

**Total payments made each financial year, actual and in 30 June 2018 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 2018 values have varied between \$104 million and \$126 million over the period shown.

Total actual payments in 2017/18 were \$120.7 million, which is \$1.3 million (1.1%) lower than actual payments 2016/17. In real values, this is a decrease of \$3.7 million (2.9%).

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

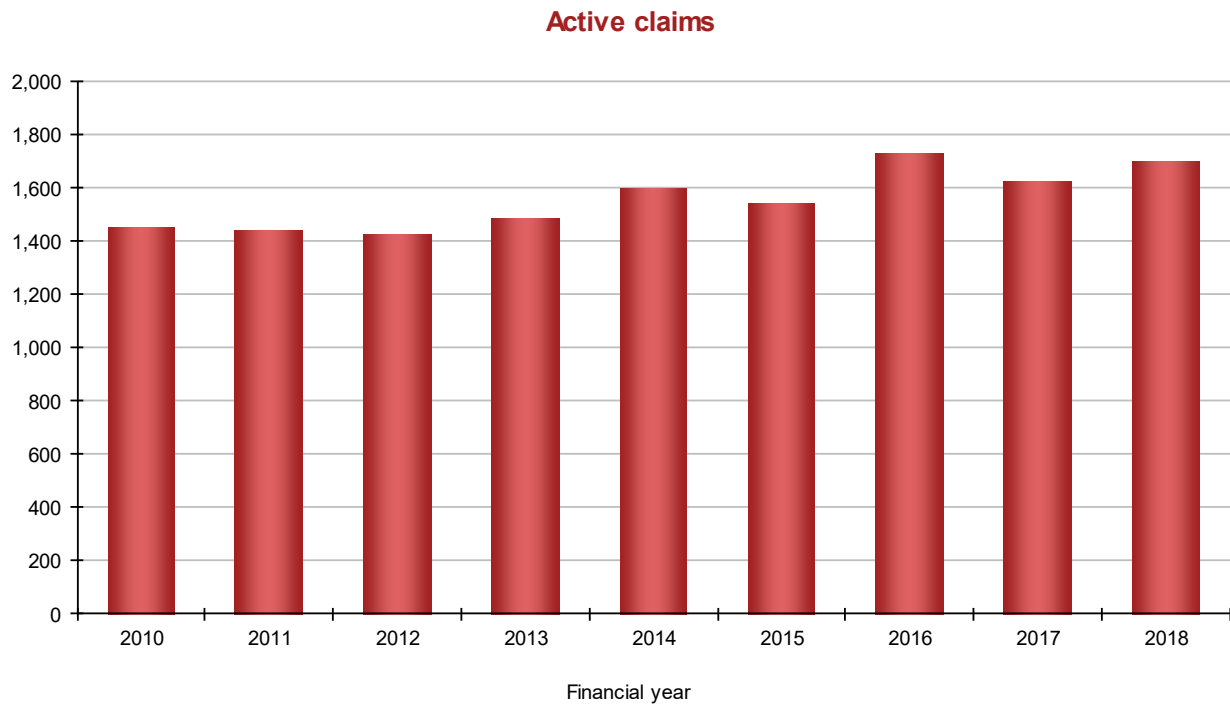
| Payment group                                              | Payments in 2017/18 (\$000s) | Payments in 2016/17 (\$000s) | Difference | Difference (%) |
|------------------------------------------------------------|------------------------------|------------------------------|------------|----------------|
| Weekly benefits                                            | 40,590                       | 38,689                       | 1,901      | 4.9%           |
| Medical and hospital                                       | 16,583                       | 16,115                       | 467        | 2.9%           |
| Allied health, vocational rehabilitation, non-compensation | 14,328                       | 14,000                       | 328        | 2.3%           |
| Other goods and services                                   | 6,283                        | 5,569                        | 714        | 12.8%          |
| Legals                                                     | 5,643                        | 6,159                        | -516       | -8.4%          |
| Redemptions and non-economic lump sum                      | 37,321                       | 41,555                       | -4,234     | -10.2%         |
| Total                                                      | 120,748                      | 122,088                      | -1,340     | -1.1%          |

The decrease in actual payments is driven by decreases in the redemptions and non-economic lump sum payment type, which decreased by \$4.2 million (10.2%).



## ***E1.4 Active claims***

*Active claim numbers increased from 1,624 in 2017 to 1,703 in 2018 (4.9%)*



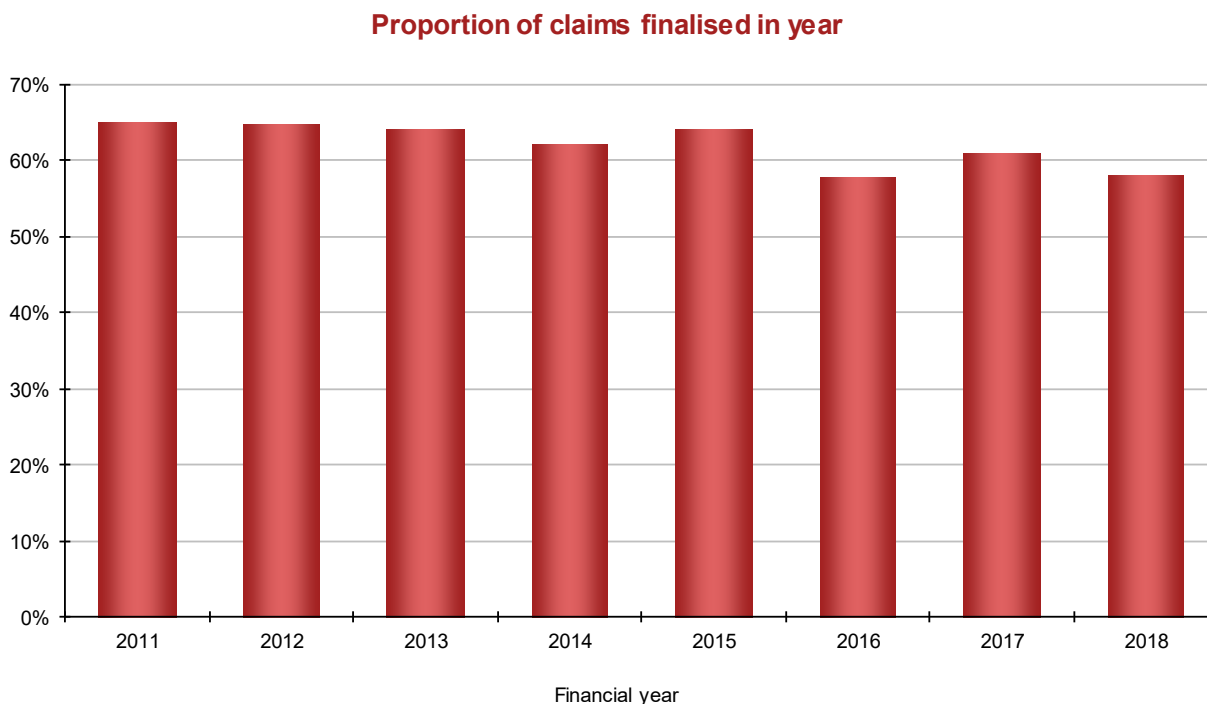
We have only received data on the number of active claims at the end of each year since 2010.

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 2017 to 2018, there has been an increase from 1,624 to 1,703, a 4.9% increase due to a slower finalisation in the financial year. This is mainly due to the 2018 accident year, which had 99 more active claims than the 2017 accident year at the same point in time but was similar to 2016 at the same point in time.

### ***E1.5 Proportion of claims finalised***

*2018 finalisation rate was 58.0%, which is lower than 60.8% in 2017 but in line with 2016*



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 2018, the finalisation rate has a decreasing trend. In 2018, the finalisation rate is 58.0%, which is lower than 2017 but line with 2016.

### ***E1.6 Claims incurred in 2017/18***

There were 2,151 claims reported to 30 June 2018 for the 2017/18 accident year and the projected number of incurred claims is 2,442. This is 0.9% higher than the 2,420 projected incurred for the 2016/17 accident year.

The expected number of open claims for the 2017/18 accident year at 30 June 2018 is  $2,151 \times (1 - 0.588) = 886$ . The actual number of open claims for the 2017/18 accident year at 30 June 2018 is 1,011, which is 14.1% higher than expected.

The 30 June 2017 projection basis lead to an expected  $\$9,252 \times (1.017 \times 1.019) = \$9,585$  to be paid on each of the 2017/18 accident year claims in the year of claim. The actual amount paid per claim was \$11,159 i.e. \$1,574 (16.4%) more in real values.

The 2017/18 accident year shows unfavourable experience with higher than expected open claims, payments per claim and case estimates.

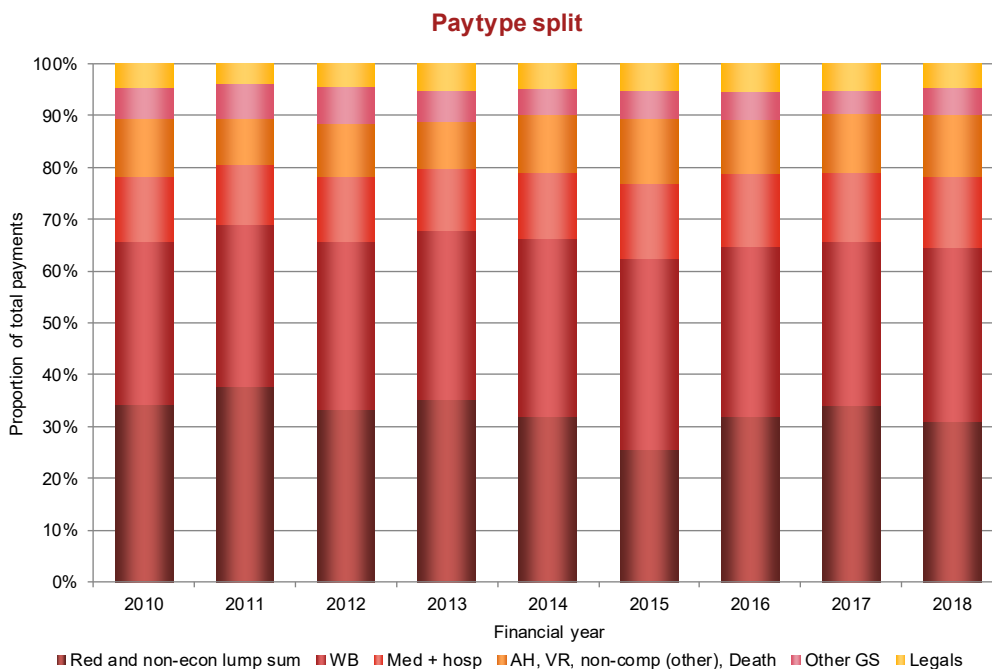
For details of the claims experience over 2017/18 for claims incurred up to 30 June 2017 see appendix C2.

## 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              | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        | 2016        | 2017        | 2018        |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Legals                          | 5%          | 4%          | 4%          | 5%          | 5%          | 5%          | 5%          | 5%          | 5%          |
| Other GS                        | 6%          | 7%          | 7%          | 6%          | 5%          | 6%          | 5%          | 5%          | 5%          |
| AH, VR, non-comp (other), Death | 11%         | 9%          | 10%         | 9%          | 11%         | 12%         | 10%         | 11%         | 12%         |
| Med + hosp                      | 12%         | 12%         | 13%         | 12%         | 13%         | 15%         | 14%         | 13%         | 14%         |
| WB                              | 32%         | 31%         | 32%         | 33%         | 34%         | 37%         | 33%         | 32%         | 34%         |
| Red and non-econ lump sum       | 34%         | 38%         | 33%         | 35%         | 32%         | 26%         | 32%         | 34%         | 31%         |
| <b>Total</b>                    | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> |

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 since 2012 has since ranged from 31% 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%

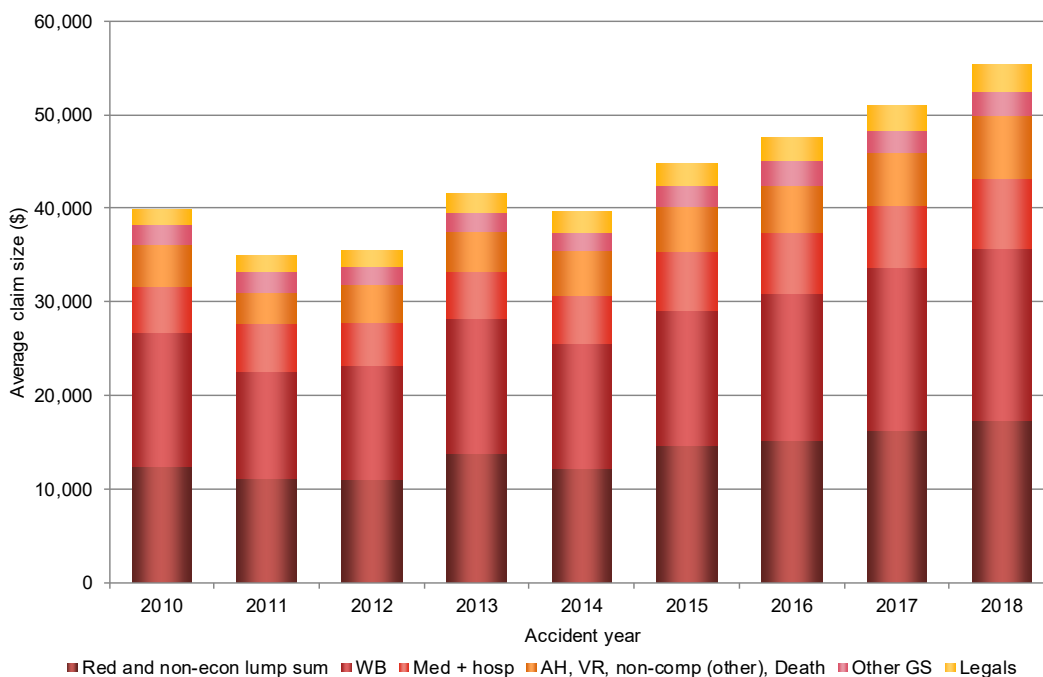
- The proportion of payments attributable to the other payment types has been stable over the last nine years.

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 accounting for around two thirds of the total*

Average claim size in 30 June 2018 values by payment type



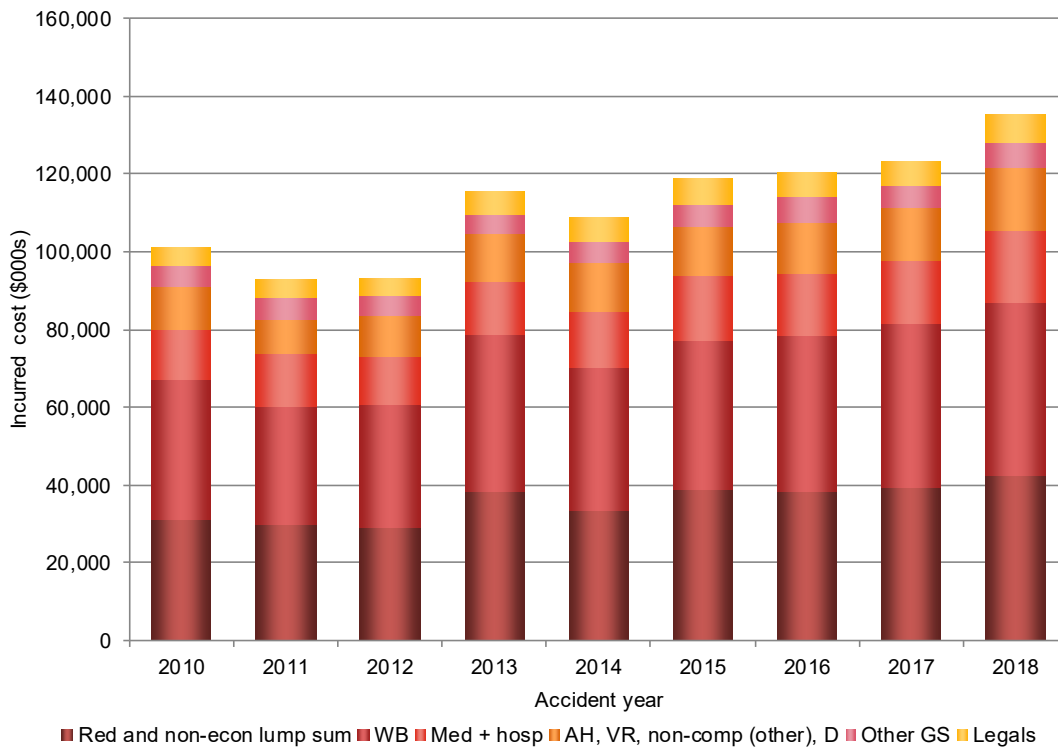
| Average claim size (exclude explicit large claims) (\$) | 2010          | 2011          | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          |
|---------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Legals                                                  | 1,683         | 1,697         | 1,701         | 2,096         | 2,208         | 2,382         | 2,491         | 2,644         | 2,895         |
| Other GS                                                | 2,151         | 2,107         | 1,913         | 1,891         | 1,941         | 2,310         | 2,501         | 2,401         | 2,724         |
| AH, VR, non-comp (other), D                             | 4,403         | 3,367         | 3,981         | 4,367         | 4,725         | 4,665         | 5,208         | 5,605         | 6,604         |
| Med + hosp                                              | 4,987         | 5,077         | 4,686         | 4,911         | 5,191         | 6,369         | 6,440         | 6,679         | 7,511         |
| WB                                                      | 14,317        | 11,375        | 12,175        | 14,518        | 13,319        | 14,406        | 15,716        | 17,438        | 18,306        |
| Red and non-econ lump sum                               | 12,355        | 11,192        | 11,000        | 13,788        | 12,211        | 14,633        | 15,142        | 16,241        | 17,373        |
| <b>Total</b>                                            | <b>39,897</b> | <b>34,816</b> | <b>35,456</b> | <b>41,571</b> | <b>39,596</b> | <b>44,765</b> | <b>47,498</b> | <b>51,008</b> | <b>55,412</b> |

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

### E2.3 Gross incurred cost by payment group

Stable distribution by payment type across accident years

Incurring cost in 30 June 2018 values by payment type



| Incurred cost in current values (exclude explicit large claims) (\$000s) |                |               |               |                |                |                |                |                |                |
|--------------------------------------------------------------------------|----------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                                                                          | 2010           | 2011          | 2012          | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           |
| Legals                                                                   | 4,254          | 4,524         | 4,467         | 5,830          | 6,073          | 6,312          | 6,312          | 6,398          | 7,069          |
| Other GS                                                                 | 5,437          | 5,617         | 5,025         | 5,258          | 5,339          | 6,121          | 6,337          | 5,808          | 6,652          |
| AH, VR, non-comp (other), Death                                          | 11,127         | 8,974         | 10,456        | 12,144         | 12,997         | 12,361         | 13,193         | 13,563         | 16,128         |
| Med + hosp                                                               | 12,603         | 13,532        | 12,308        | 13,658         | 14,278         | 16,875         | 16,316         | 16,161         | 18,344         |
| WB                                                                       | 36,181         | 30,320        | 31,979        | 40,374         | 36,633         | 38,169         | 39,816         | 42,192         | 44,707         |
| Red and non-econ lump sum                                                | 31,223         | 29,832        | 28,893        | 38,345         | 33,584         | 38,771         | 38,361         | 39,296         | 42,429         |
| <b>Total</b>                                                             | <b>100,824</b> | <b>92,800</b> | <b>93,128</b> | <b>115,610</b> | <b>108,904</b> | <b>118,609</b> | <b>120,335</b> | <b>123,417</b> | <b>135,329</b> |

| Percentage of incurred cost by paytype |             |             |             |             |             |             |             |             |             |
|----------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                        | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        | 2016        | 2017        | 2018        |
| Legals                                 | 4%          | 5%          | 5%          | 5%          | 6%          | 5%          | 5%          | 5%          | 5%          |
| Other GS                               | 5%          | 6%          | 5%          | 5%          | 5%          | 5%          | 5%          | 5%          | 5%          |
| AH, VR, non-comp (other), Death        | 11%         | 10%         | 11%         | 11%         | 12%         | 10%         | 11%         | 11%         | 12%         |
| Med + hosp                             | 13%         | 15%         | 13%         | 12%         | 13%         | 14%         | 14%         | 13%         | 14%         |
| WB                                     | 36%         | 33%         | 34%         | 35%         | 34%         | 32%         | 33%         | 34%         | 33%         |
| Red and non-econ lump sum              | 31%         | 32%         | 31%         | 33%         | 31%         | 33%         | 32%         | 32%         | 31%         |
| <b>Total</b>                           | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> |

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.

# Appendix F Self-insurer outstanding claims valuation

## F1 Data used in the valuation

### F1.1 Numbers of claims reported

| Year to 30 June | NT WorkSafe self-insurers - Incremental Claims Reported |    |   |   |   |   |   |   |   |   |    | Total |     |
|-----------------|---------------------------------------------------------|----|---|---|---|---|---|---|---|---|----|-------|-----|
|                 | 0                                                       | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |     |
| 2010            | 139                                                     | 6  | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 146 |
| 2011            | 180                                                     | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 191 |
| 2012            | 153                                                     | 23 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 178 |
| 2013            | 121                                                     | 22 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 146 |
| 2014            | 114                                                     | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 140 |
| 2015            | 114                                                     | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 127 |
| 2016            | 104                                                     | 19 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 0     | 125 |
| 2017            | 76                                                      | 17 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0  | 0     | 94  |
| 2018            | 84                                                      | 8  | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 0     | 93  |

Note: Data extracted from the WIMS system up to 30 June 2018

### F1.2 Cumulative claims reported

| Year to 30 June | NT WorkSafe self-insurers - Cumulative Claims Reported |     |     |     |     |     |     |     |     |     |     | Total |
|-----------------|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
|                 | 0                                                      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |       |
| 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 |
| 2018            | 84                                                     | 84  | 122 | 133 | 126 | 149 | 175 | 206 | 152 | 117 | 784 | 2,132 |

Note: Cumulative claim reports from table above

### F1.3 Active claims

| Year to 30 June | NT WorkSafe self-insurers - Active Claims |    |    |   |   |   |   |   |   |   |    | Total |
|-----------------|-------------------------------------------|----|----|---|---|---|---|---|---|---|----|-------|
|                 | 0                                         | 1  | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |
| 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    |
| 2018            | 29                                        | 12 | 10 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0  | 55    |

Note: From the self-insurers' Form B as at 30 June 2018

## ***F1.4 Claim payments***

| Year to 30 June | NT WorkSafe self-insurers - Incremental Actual Claim Payments (\$000s) |       |     |     |     |     |     |     |    |    |     |              |
|-----------------|------------------------------------------------------------------------|-------|-----|-----|-----|-----|-----|-----|----|----|-----|--------------|
|                 | 0                                                                      | 1     | 2   | 3   | 4   | 5   | 6   | 7   | 8  | 9  | 10  | Total        |
| 2010            | 358                                                                    | 256   | 138 | 170 | 92  | 470 | 0   | 1   | 1  | 0  | 0   | <b>1,485</b> |
| 2011            | 401                                                                    | 740   | 496 | 236 | 318 | 0   | 349 | 0   | 7  | 5  | 15  | <b>2,566</b> |
| 2012            | 646                                                                    | 754   | 80  | 189 | 205 | 0   | 0   | 0   | 0  | 82 | 0   | <b>1,955</b> |
| 2013            | 379                                                                    | 1,145 | 184 | 72  | 8   | 170 | 0   | 16  | 0  | 0  | 195 | <b>2,169</b> |
| 2014            | 334                                                                    | 1,029 | 565 | 99  | 0   | 61  | 24  | 0   | 2  | 0  | 0   | <b>2,115</b> |
| 2015            | 425                                                                    | 430   | 622 | 574 | 86  | 0   | 5   | 189 | 0  | 12 | 0   | <b>2,343</b> |
| 2016            | 706                                                                    | 464   | 178 | 728 | 233 | 3   | 2   | 5   | 0  | 0  | 0   | <b>2,320</b> |
| 2017            | 555                                                                    | 544   | 474 | 77  | 0   | 0   | 4   | 3   | 4  | 0  | 0   | <b>1,662</b> |
| 2018            | 573                                                                    | 724   | 323 | 300 | 178 | 0   | 0   | 2   | 11 | 6  | 0   | <b>2,117</b> |

**Note:** Data extracted from the WIMS system up to 30 June 2018

## ***F1.5 Case estimates***

| Year to 30 June | NT WorkSafe self-insurers - Case Estimates Outstanding (\$000s) |     |     |     |    |     |     |   |   |   |    |              |
|-----------------|-----------------------------------------------------------------|-----|-----|-----|----|-----|-----|---|---|---|----|--------------|
|                 | 0                                                               | 1   | 2   | 3   | 4  | 5   | 6   | 7 | 8 | 9 | 10 | Total        |
| 2013            | 333                                                             | 406 | 373 | 4   | 40 | 199 | 14  | 0 | 0 | 0 | 0  | <b>1,369</b> |
| 2014            | 349                                                             | 525 | 461 | 45  | 4  | 20  | 192 | 0 | 0 | 0 | 0  | <b>1,596</b> |
| 2015            | 340                                                             | 216 | 482 | 239 | 50 | 4   | 58  | 0 | 0 | 0 | 0  | <b>1,389</b> |
| 2016            | 565                                                             | 274 | 79  | 3   | 15 | 40  | 33  | 0 | 0 | 0 | 0  | <b>1,009</b> |
| 2017            | 540                                                             | 319 | 143 | 85  | 6  | 0   | 14  | 0 | 0 | 0 | 0  | <b>1,108</b> |
| 2018            | 999                                                             | 694 | 293 | 22  | 40 | 0   | 21  | 0 | 0 | 0 | 0  | <b>2,070</b> |

**Note:** From the self-insurers' Form B as at 30 June 2018 and prior years

## ***F 2 Actual and projected claims experience during 2017/18***

### ***F2.1 Numbers of claims reported***

| Accident year ended 30 June | Number of claims reported during 2017/18 |               |  | Actual / projected % |
|-----------------------------|------------------------------------------|---------------|--|----------------------|
|                             | Actual                                   | Projected (a) |  |                      |
| 2010                        | 0                                        | 0             |  | 0.0%                 |
| 2011                        | 0                                        | 0             |  | 0.0%                 |
| 2012                        | 0                                        | 0             |  | 0.0%                 |
| 2013                        | 0                                        | 0             |  | 0.0%                 |
| 2014                        | 0                                        | 0             |  | 0.0%                 |
| 2015                        | 0                                        | 0             |  | 0.0%                 |
| 2016                        | 1                                        | 0             |  | 1537.3%              |
| 2017                        | 8                                        | 13            |  | 63.7%                |
| <b>Total</b>                | <b>9.0</b>                               | <b>12.6</b>   |  | <b>71.3%</b>         |

**Note:** (a) From previous scheme report dated 13 June 2018

## ***F2.2 Claim payments***

| Accident year<br>ended 30 June | Actual<br>payments | Expected<br>Payments<br>(a) | Actual /<br>expected<br>% |
|--------------------------------|--------------------|-----------------------------|---------------------------|
| 2010                           | 11                 | 3                           | 321.9%                    |
| 2011                           | 2                  | 7                           | 32.6%                     |
| 2012                           | 0                  | 7                           | 0.0%                      |
| 2013                           | 0                  | 9                           | 0.0%                      |
| 2014                           | 178                | 19                          | 926.1%                    |
| 2015                           | 300                | 129                         | 231.3%                    |
| 2016                           | 323                | 289                         | 111.8%                    |
| 2017                           | 724                | 510                         | 142.0%                    |
| <b>Total</b>                   | <b>1,538</b>       | <b>975</b>                  | <b>157.8%</b>             |

Note: (a) From previous scheme report dated 13 June 2018

## ***F3 Analysis and projection models***

### ***F3.1 Payment per claim incurred model***

Claim notification pattern

| Financial year<br>ending 30 June | Chain ladder ratio (a) for development year: |             |             |             |             |             |             |             |             | 10          |
|----------------------------------|----------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                  | 1                                            | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9           | onwards     |
| 2010                             | 1.05                                         | 1.00        | 1.01        | 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        |
| 2018                             | 1.11                                         | 1.01        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        |
| <b>Adopted (b)</b>               | <b>1.15</b>                                  | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> |

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

(b) Adopted for 30 June 2018 valuation



*Numbers of claims incurred*

| Accident year<br>ending 30 June | Number of claims               |                            |              |
|---------------------------------|--------------------------------|----------------------------|--------------|
|                                 | Reported to 30<br>Jun 2018 (a) | IBNR at 30 Jun<br>2018 (b) | Incurred (c) |
| 2010                            | 152                            | 0                          | 152          |
| 2011                            | 206                            | 0                          | 206          |
| 2012                            | 175                            | 0                          | 175          |
| 2013                            | 149                            | 0                          | 149          |
| 2014                            | 126                            | 0                          | 126          |
| 2015                            | 133                            | 0                          | 133          |
| 2016                            | 122                            | 0                          | 122          |
| 2017                            | 84                             | 1                          | 85           |
| 2018                            | 84                             | 13                         | 97           |

- 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<br>ending 30 June | Average Real Payment Per Claim Incurred (a) for development year: |              |              |              |            |            |            |            |            |            |            | Total         |
|----------------------------------|-------------------------------------------------------------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|---------------|
|                                  | 0                                                                 | 1            | 2            | 3            | 4          | 5          | 6          | 7          | 8          | 9          | 10 onwards |               |
| 2010                             | 3,360                                                             | 3,119        | 1,714        | 1,967        | 1,070      | 5,739      | 0          | 17         | 10         | 0          | 0          | <b>16,996</b> |
| 2011                             | 2,647                                                             | 6,621        | 5,765        | 2,796        | 3,512      | 0          | 4,054      | 0          | 88         | 73         | 859        | <b>26,416</b> |
| 2012                             | 4,714                                                             | 4,671        | 673          | 2,064        | 2,276      | 0          | 0          | 0          | 0          | 1,023      | 0          | <b>15,421</b> |
| 2013                             | 2,984                                                             | 7,708        | 1,051        | 557          | 77         | 1,745      | 0          | 157        | 0          | 0          | 2,257      | <b>16,535</b> |
| 2014                             | 3,004                                                             | 7,828        | 3,669        | 549          | 0          | 596        | 238        | 0          | 21         | 0          | 0          | <b>15,905</b> |
| 2015                             | 3,602                                                             | 3,842        | 4,705        | 3,704        | 469        | 0          | 50         | 1,852      | 0          | 113        | 0          | <b>18,338</b> |
| 2016                             | 6,364                                                             | 3,836        | 1,556        | 5,379        | 1,471      | 17         | 14         | 44         | 0          | 0          | 0          | <b>18,681</b> |
| 2017                             | 6,855                                                             | 4,642        | 3,716        | 635          | 0          | 0          | 21         | 17         | 37         | 0          | 0          | <b>15,924</b> |
| 2018                             | 5,896                                                             | 8,575        | 2,642        | 2,249        | 1,408      | 0          | 0          | 12         | 72         | 50         | 0          | <b>20,903</b> |
| <b>Adopted (b)</b>               | <b>6,351</b>                                                      | <b>6,249</b> | <b>3,341</b> | <b>2,462</b> | <b>658</b> | <b>381</b> | <b>275</b> | <b>218</b> | <b>182</b> | <b>116</b> | <b>0</b>   | <b>20,232</b> |

- Notes:** (a) In 30 June 2018 values  
 (b) Adopted for 30 June 2018 valuation

## ***F3.2 Projected case estimates model***

### ***Case estimate development***

| Financial year<br>ending 30 June | Case Estimate Development (a) for development year: |              |              |              |              |              |              |              |              | 10           |
|----------------------------------|-----------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                  | 1                                                   | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | onwards      |
| 2010                             | 0.000                                               | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2011                             | 0.000                                               | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2012                             | 0.000                                               | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2013                             | 0.000                                               | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2014                             | 4.590                                               | 2.482        | 0.380        | 0.973        | 2.001        | 1.059        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2015                             | 1.869                                               | 2.129        | 1.782        | 3.046        | 1.016        | 3.209        | 0.991        | 0.000        | 0.000        | 0.000        |
| 2016                             | 2.076                                               | 1.142        | 1.470        | 1.006        | 0.811        | 8.180        | 0.079        | 0.000        | 0.000        | 0.000        |
| 2017                             | 1.486                                               | 2.199        | 1.986        | 1.920        | 0.000        | 0.437        | 0.075        | 0.000        | 0.000        | 0.000        |
| 2018                             | 2.568                                               | 1.888        | 2.201        | 2.505        | 0.000        | 0.000        | 0.168        | 0.000        | 0.000        | 0.000        |
| <b>Adopted (b)</b>               | <b>1.404</b>                                        | <b>1.301</b> | <b>1.256</b> | <b>1.210</b> | <b>1.043</b> | <b>1.000</b> | <b>1.000</b> | <b>1.000</b> | <b>1.000</b> | <b>1.000</b> |

**Notes:** (a) defined as: (CE at end of year + payments in the year) / CE at beginning of year adjusted for normal inflation

(b) In 30 June 2018 values, adopted for 30 June 2018 valuation

### ***Payment factors for case estimates outstanding***

| Financial year<br>ending 30 June | Payments to case estimates (a) for development year: |              |              |              |              |              |              |              |              | 10           |
|----------------------------------|------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                                  | 1                                                    | 2            | 3            | 4            | 5            | 6            | 7            | 8            | 9            | onwards      |
| 2010                             | 0.000                                                | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2011                             | 0.000                                                | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2012                             | 0.000                                                | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2013                             | 0.000                                                | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2014                             | 3.054                                                | 1.376        | 0.263        | 0.000        | 1.514        | 0.119        | 0.000        | 0.000        | 0.000        | 0.000        |
| 2015                             | 1.241                                                | 1.195        | 1.255        | 1.918        | 0.000        | 0.262        | 0.991        | 0.000        | 0.000        | 0.000        |
| 2016                             | 1.322                                                | 0.800        | 1.464        | 0.947        | 0.062        | 0.456        | 0.079        | 0.000        | 0.000        | 0.000        |
| 2017                             | 0.944                                                | 1.698        | 0.953        | 0.000        | 0.000        | 0.101        | 0.075        | 0.000        | 0.000        | 0.000        |
| 2018                             | 1.312                                                | 0.990        | 2.051        | 2.045        | 0.000        | 0.000        | 0.168        | 0.000        | 0.000        | 0.000        |
| <b>Adopted (b)</b>               | <b>0.836</b>                                         | <b>0.801</b> | <b>1.038</b> | <b>0.989</b> | <b>0.366</b> | <b>0.505</b> | <b>0.311</b> | <b>0.270</b> | <b>0.197</b> | <b>0.197</b> |

**Notes:** (a) defined as: Payments made in the year / case estimates at beginning of the year

(b) In 30 June 2018 values, adopted for 30 June 2018 valuation

## ***F 4 Adopted estimates of outstanding claims***

### ***F4.1 Gross central estimates from models in current values***

| Accident year<br>ending 30 June | Estimates of Outstanding<br>Claims (\$000s)<br>at 30 June 2018 (a)(b) |              |
|---------------------------------|-----------------------------------------------------------------------|--------------|
|                                 | PPCI                                                                  | PCE          |
| 2010 & earlier                  | 18                                                                    | 0            |
| 2011                            | 63                                                                    | 0            |
| 2012                            | 94                                                                    | 21           |
| 2013                            | 124                                                                   | 0            |
| 2014                            | 156                                                                   | 43           |
| 2015                            | 258                                                                   | 32           |
| 2016                            | 549                                                                   | 507          |
| 2017                            | 675                                                                   | 1,517        |
| 2018                            | 1,412                                                                 | 2,958        |
| <b>Total</b>                    | <b>3,349</b>                                                          | <b>5,078</b> |

**Notes:** (a) From models described in appendix F3

(b) In 30 June 2018 values and includes superimposed inflation and excluding 2015 legislative changes

### ***F4.2 Average claim sizes***

| Accident year<br>ending 30 June | Average Claim Size (\$000s)<br>at 30 June 2018 (a)(b) |     |
|---------------------------------|-------------------------------------------------------|-----|
|                                 | PPCI                                                  | PCE |
| 2010                            | 11                                                    | 11  |
| 2011                            | 10                                                    | 9   |
| 2012                            | 22                                                    | 21  |
| 2013                            | 22                                                    | 21  |
| 2014                            | 12                                                    | 11  |
| 2015                            | 15                                                    | 14  |
| 2016                            | 18                                                    | 18  |
| 2017                            | 23                                                    | 33  |
| 2018                            | 20                                                    | 36  |

**Note:** (a) In 30 June 2018 values, from results in appendix F4.1, includes superimposed inflation and excluding 2015 legislative changes

***F4.3 Adopted estimates in 30 June 2018 values***

| Accident year<br>ending 30 June | Estimate of o/s<br>claims<br>(\$000s)(a)(b) | Estimate of o/s<br>claims<br>(\$000s)(b)(c) | Average<br>claim size<br>(\$000s)(b)(c) | Ratio<br>to case<br>estimates (b)(c) |
|---------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------------|--------------------------------------|
| 2010 & earlier                  | 2                                           | 2                                           |                                         | 0%                                   |
| 2011                            | 6                                           | 6                                           | 9                                       | 0%                                   |
| 2012                            | 28                                          | 28                                          | 21                                      | 135%                                 |
| 2013                            | 12                                          | 12                                          | 21                                      | 0%                                   |
| 2014                            | 66                                          | 66                                          | 11                                      | 165%                                 |
| 2015                            | 122                                         | 122                                         | 14                                      | 557%                                 |
| 2016                            | 524                                         | 471                                         | 17                                      | 160%                                 |
| 2017                            | 1,180                                       | 1,120                                       | 29                                      | 161%                                 |
| 2018                            | 1,721                                       | 1,666                                       | 23                                      | 167%                                 |
| <b>Total</b>                    | <b>3,663</b>                                | <b>3,494</b>                                |                                         | <b>169%</b>                          |

- Notes:** (a) in 30 June 2018 values, including superimposed inflation and excluding 2015 legislative changes  
(b) in 30 June 2018 values, including superimposed inflation and including 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<br>ending 30 June | Weights Adopted For Estimates (a)(b)<br>Method |      |       |
|---------------------------------|------------------------------------------------|------|-------|
|                                 | PPCI                                           | PCE  | Total |
| 2010 & earlier                  | 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                            | 0.40                                           | 0.60 | 1.00  |
| 2017                            | 0.40                                           | 0.60 | 1.00  |
| 2018                            | 0.80                                           | 0.20 | 1.00  |

### ***F4.4 Gross adopted estimates including expenses***

| <b>NT WorkSafe self-insurers</b>          |                     |                 |                      |                  |                |
|-------------------------------------------|---------------------|-----------------|----------------------|------------------|----------------|
| <b>Estimates (\$000s) at 30 June 2018</b> |                     |                 |                      |                  |                |
| <b>Accident year</b>                      | <b>30 June 2018</b> | <b>Inflated</b> | <b>Inflated</b>      | <b>Case</b>      | <b>Ratio %</b> |
| <b>ending 30 June</b>                     | <b>values</b>       | <b>values</b>   | <b>&amp; discntd</b> | <b>estimates</b> | <b></b>        |
|                                           | <b>(a)</b>          | <b>(b)</b>      | <b>values (b)</b>    | <b>(c)</b>       | <b>(d)</b>     |
| 2010 & earlier                            | 2                   | 2               | 2                    | 0                | -              |
| 2011                                      | 6                   | 7               | 7                    | 0                | -              |
| 2012                                      | 28                  | 32              | 30                   | 21               | 135%           |
| 2013                                      | 12                  | 14              | 13                   | 0                | -              |
| 2014                                      | 66                  | 74              | 70                   | 40               | 165%           |
| 2015                                      | 122                 | 136             | 130                  | 22               | 557%           |
| 2016                                      | 471                 | 514             | 502                  | 293              | 160%           |
| 2017                                      | 1,120               | 1,229           | 1,193                | 694              | 161%           |
| 2018                                      | 1,666               | 1,840           | 1,774                | 999              | 167%           |
| <b>Total</b>                              | <b>3,494</b>        | <b>3,848</b>    | <b>3,721</b>         | <b>2,070</b>     | <b>169%</b>    |

- Note:**
- (a) In 30 June 2018 values, includes superimposed inflation
  - (b) includes 7% claims handling expenses, inflation and discounting assumptions in Appendix B 1
  - (c) as at 30 June 2018 as provided by the self-insurers
  - (d) = (a) / (c)

***F4.5 Net outstanding claims provision***

Estimates at 30 June 2018 (\$000s)

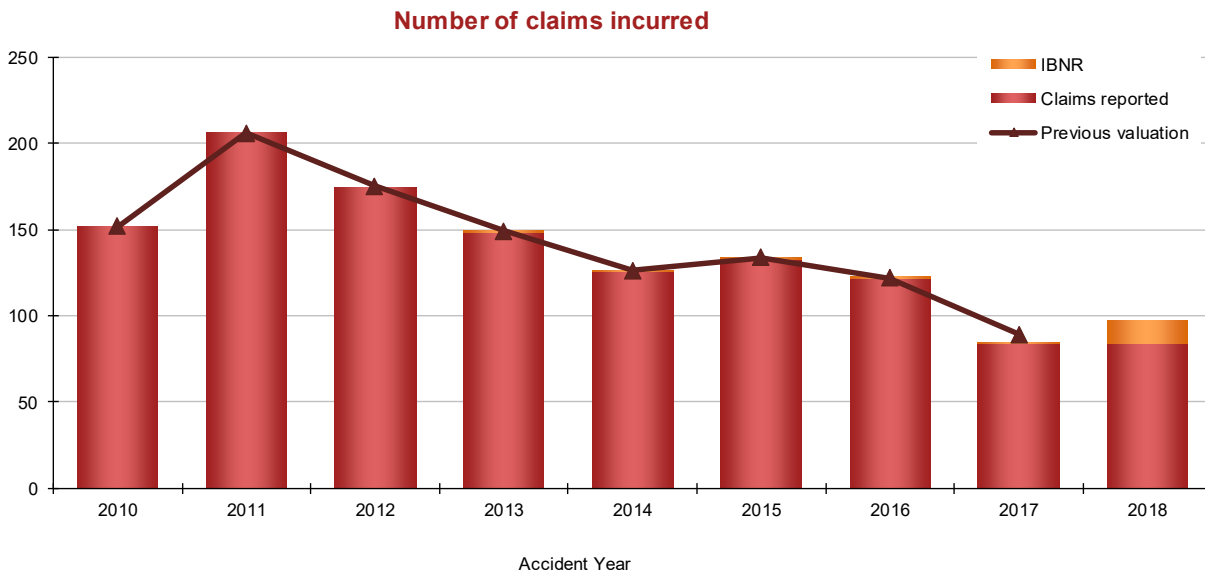
| Accident year ending 30 Jun | Gross o/s liability (a) | Reinsurance recoveries (b) | Net o/s liability (c) | Claims handling expenses (d) | Net central estimate (e) | Risk margin (f) | Net Provision (g) |
|-----------------------------|-------------------------|----------------------------|-----------------------|------------------------------|--------------------------|-----------------|-------------------|
| Total                       | 3,477                   | 0                          | 3,477                 | 243                          | 3,721                    | 930             | 4,651             |

- 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 25.0%
- (g) = (e) + (f)

# Appendix G Self-insurer claims statistics

## G 1 Number of claims incurred

*Decreasing trend from 2011 peak to 2017, 2018 incurred claims of 97 are higher than 2017 but below 2016 and earlier years*

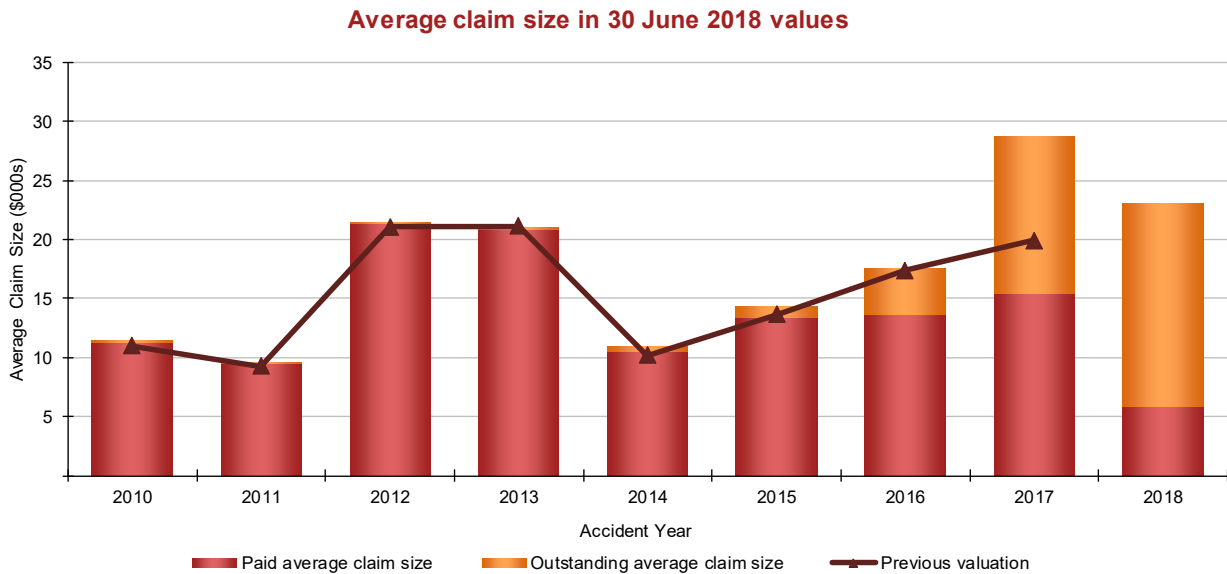


The main points to highlight from this chart are:

- The number of incurred claims peaked in the 2011 accident year at 206 claims
- 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 85, significantly lower than all prior years shown
- The number of claims incurred increased to 97 for the 2018 year, of which 13 are IBNR claims
- The number of claims is similar to estimates at the previous valuation, however 2017 is slightly lower.

## G 2 Gross average claim size

2018 average claim size is just over \$23,000, \$5,600 (20%) lower than 2017



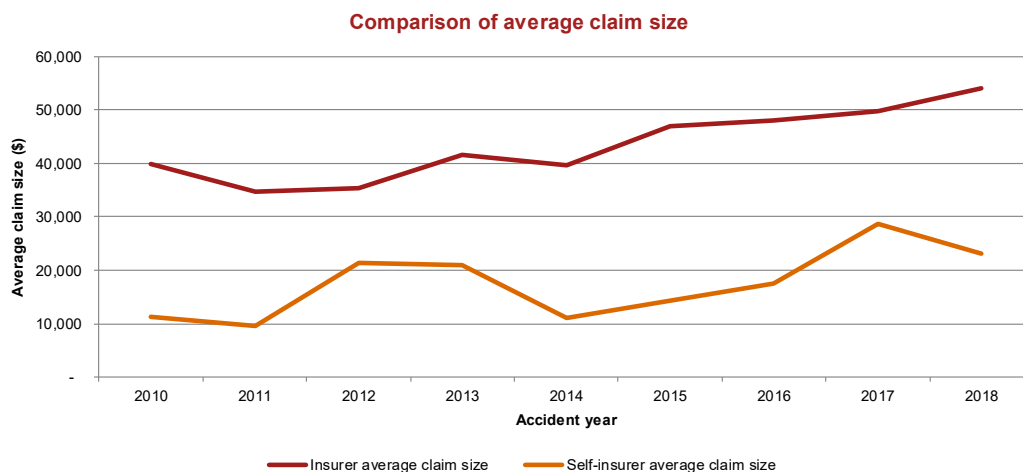
The average claim size has been volatile between accident years and there has been no discernible trend. Since 2009, the average claim size has ranged between \$9,000 and \$21,500, with lows in 2010, 2011 and 2014 surrounding highs in 2012 and 2013. This implies that the spike in incurred claim numbers in 2011 shown in 3.2.1 is related to smaller claims.

Our estimated average claim size for the 2017 accident year is significantly higher than our previous valuation due to higher than expected payments and high case estimates as at 30 June 2018.

Our estimated average claim size for the 2018 accident year is just over \$23,000, which is \$5,600 (20%) lower than the 2017 accident year.

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 2018 accident year, where a high proportion (74%) of the average claim size consists of the uncertain future estimate.

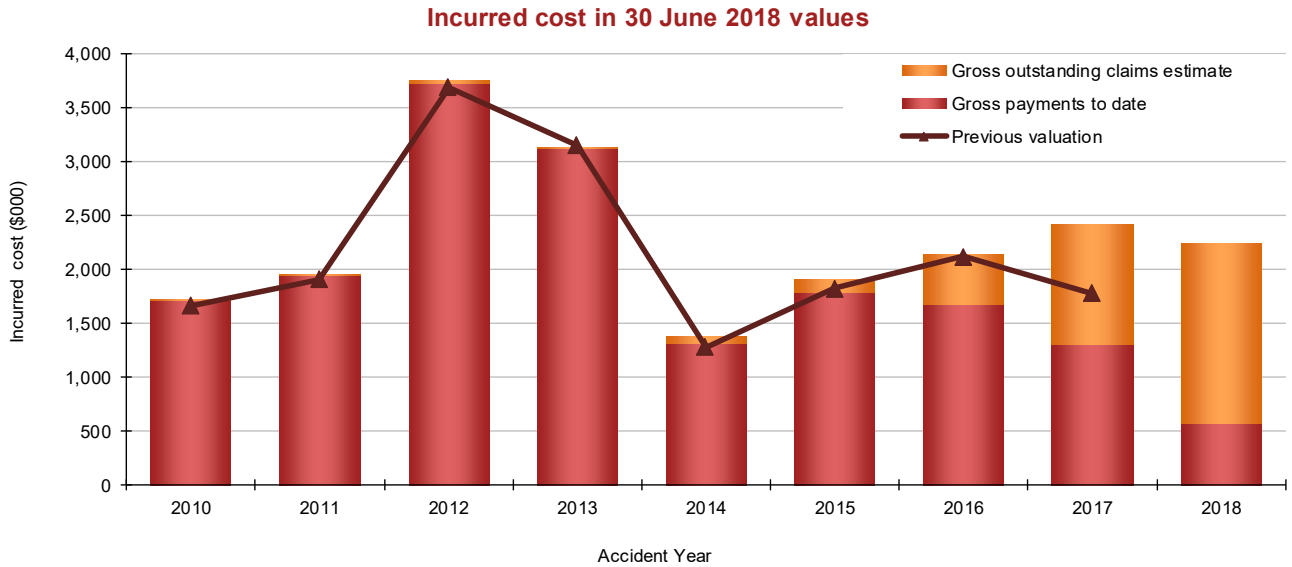
The chart below compares the average claim size of self-insurers to insurers.





### G 3 Incurred cost

2018 incurred cost is \$2.2 million, which is lower than the \$2.4 million incurred in 2017 but higher than 2014 to 2016



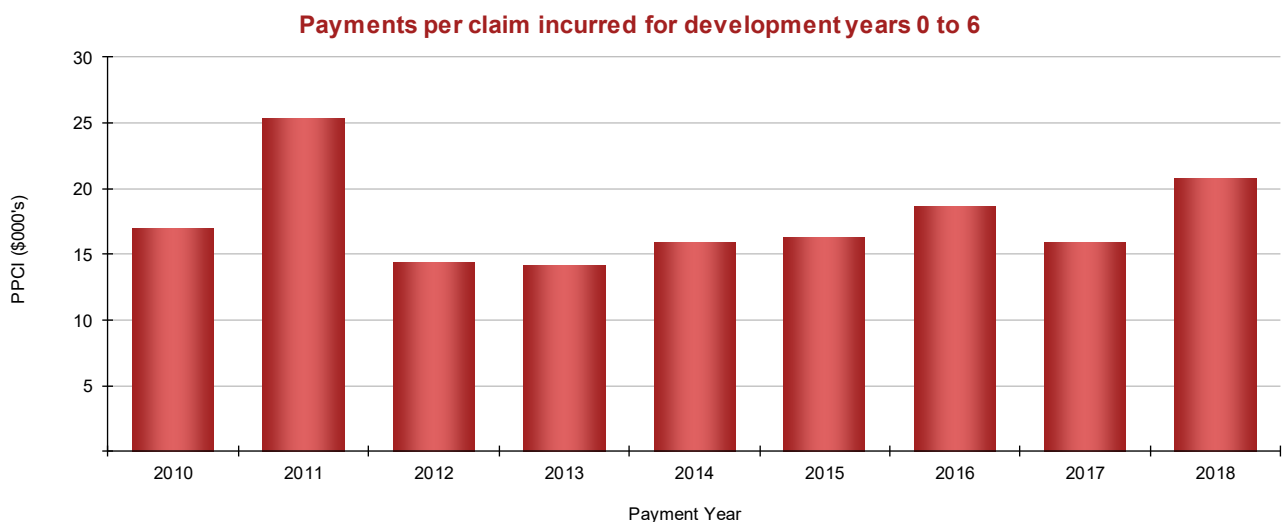
Compared to our previous valuation, there has been a significant increase in the incurred costs for the 2017 accident year due to higher than expected claim development, in particular the high case estimates at 30 June 2018.

The incurred cost for 2018 is \$2.2 million, which is \$0.2 million (8%) lower than the 2017 accident year incurred cost of \$2.4 million.

Over the period shown in the graph, the proportion outstanding increases from 0% of the total incurred cost to 74% of the total incurred cost for 2018.

### G 4 Payment per claim incurred

2012 to 2018 exhibits a broadly increasing trend



Payments per claim incurred for development years 0 to 6 spiked to \$25,400 in 2011 due to multiple large claim payments. After this spike, there was a sharp reduction to \$14,400 in 2012, but since then there has been an increasing trend, to \$20,800 in 2018.

The 2018 payment per claim incurred for development years 0 to 6 increased \$4,900 (31%) compared to the 2017 financial year, due to high payments across multiple years.

# 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 Year | Claim payments (\$000s) (a) for development year: |        |        |        |        |       |       |       |       |       | Total |        |
|---------------|---------------------------------------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|
|               | 0                                                 | 1      | 2      | 3      | 4      | 5     | 6     | 7     | 8     | 9     |       | 10     |
| 2006          | 10,364                                            | 12,610 | 7,253  | 6,702  | 6,034  | 7,050 | 2,406 | 661   | 1,958 | 1,546 | 2,452 | 59,035 |
| 2007          | 10,102                                            | 13,046 | 10,637 | 10,416 | 7,329  | 6,525 | 2,519 | 4,773 | 1,704 | 2,208 | 4,995 | 74,254 |
| 2008          | 12,608                                            | 17,178 | 11,438 | 9,562  | 6,019  | 3,794 | 3,421 | 2,818 | 4,170 | 2,446 | 950   | 74,404 |
| 2009          | 13,725                                            | 17,104 | 13,739 | 9,217  | 16,149 | 5,760 | 3,315 | 2,253 | 1,629 | 1,180 | 0     | 84,070 |
| 2010          | 14,500                                            | 18,979 | 12,681 | 7,730  | 6,857  | 4,418 | 3,152 | 2,996 | 2,515 | 0     | 0     | 73,829 |
| 2011          | 15,305                                            | 19,102 | 11,430 | 10,478 | 3,883  | 4,980 | 5,830 | 1,127 | 0     | 0     | 0     | 72,134 |
| 2012          | 16,961                                            | 22,429 | 9,756  | 9,393  | 5,214  | 5,062 | 2,473 | 0     | 0     | 0     | 0     | 71,288 |
| 2013          | 18,495                                            | 24,301 | 15,560 | 14,458 | 7,270  | 3,474 | 0     | 0     | 0     | 0     | 0     | 83,558 |
| 2014          | 19,207                                            | 24,873 | 15,267 | 12,543 | 8,160  | 0     | 0     | 0     | 0     | 0     | 0     | 80,048 |
| 2015          | 19,207                                            | 24,693 | 20,568 | 15,764 | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 80,233 |
| 2016          | 21,241                                            | 30,663 | 19,291 | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 71,195 |
| 2017          | 23,630                                            | 31,750 | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 55,380 |
| 2018          | 26,874                                            | 0      | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 26,874 |

Notes : (a) from data extracted from the WIMS system as at 30 June 2018

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 |       |       |       |       |       |       |       |       |       |       |       |       |
|--------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|              | 2018                                          | 2017  | 2016  | 2015  | 2014  | 2013  | 2012  | 2011  | 2010  | 2009  | 2008  | 2007  | 2006  |
| Forward rate | 1.89%                                         | 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 2018 is the one year forward rate from the Commonwealth Bond yield curve as at 30 June 2017.

### H1.3 Discounted claim payments

| Accident Year | Claim payments (\$000s) (a) for development year: |        |        |        |        |       |       |       |       |       |       | Total  |
|---------------|---------------------------------------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|
|               | 0                                                 | 1      | 2      | 3      | 4      | 5     | 6     | 7     | 8     | 9     | 10    |        |
| 2006          | 10,099                                            | 11,629 | 6,315  | 5,496  | 4,740  | 5,280 | 1,715 | 453   | 1,291 | 981   | 1,453 | 49,452 |
| 2007          | 9,812                                             | 11,925 | 9,127  | 8,535  | 5,706  | 4,821 | 1,783 | 3,241 | 1,110 | 1,384 | 2,946 | 60,390 |
| 2008          | 12,217                                            | 15,588 | 9,888  | 7,837  | 4,670  | 2,813 | 2,428 | 1,915 | 2,718 | 1,532 | 572   | 62,179 |
| 2009          | 13,264                                            | 15,706 | 11,929 | 7,556  | 12,620 | 4,296 | 2,360 | 1,536 | 1,064 | 738   | 0     | 71,070 |
| 2010          | 14,257                                            | 17,950 | 11,521 | 6,811  | 5,867  | 3,671 | 2,551 | 2,364 | 1,933 | 0     | 0     | 66,926 |
| 2011          | 14,973                                            | 17,863 | 10,315 | 9,135  | 3,272  | 4,066 | 4,619 | 865   | 0     | 0     | 0     | 65,108 |
| 2012          | 16,571                                            | 21,118 | 8,863  | 8,236  | 4,423  | 4,162 | 1,968 | 0     | 0     | 0     | 0     | 65,341 |
| 2013          | 18,242                                            | 23,346 | 14,565 | 13,219 | 6,503  | 3,036 | 0     | 0     | 0     | 0     | 0     | 78,912 |
| 2014          | 18,967                                            | 23,962 | 14,384 | 11,576 | 7,368  | 0     | 0     | 0     | 0     | 0     | 0     | 76,258 |
| 2015          | 18,974                                            | 23,865 | 19,479 | 14,610 | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 76,928 |
| 2016          | 21,036                                            | 29,830 | 18,412 | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 69,277 |
| 2017          | 23,439                                            | 30,949 | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 54,388 |
| 2018          | 26,623                                            | 0      | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     | 0     | 26,623 |

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

### H1.4 Discounted gross incurred cost

| Underwriting year | Discounted gross claim payments (a) (\$000s) | Discounted gross outstanding claims (b) (\$000s) | Discounted gross incurred cost (c) (\$000s) |
|-------------------|----------------------------------------------|--------------------------------------------------|---------------------------------------------|
| 2018              | 26,623                                       | 101,474                                          | 128,097                                     |
| 2017              | 54,388                                       | 60,710                                           | 115,098                                     |
| 2016              | 69,277                                       | 44,892                                           | 114,169                                     |
| 2015              | 76,928                                       | 35,334                                           | 112,262                                     |
| 2014              | 76,258                                       | 18,337                                           | 94,595                                      |
| 2013              | 78,912                                       | 18,320                                           | 97,232                                      |
| 2012              | 65,341                                       | 8,892                                            | 74,233                                      |
| 2011              | 65,108                                       | 5,446                                            | 70,554                                      |
| 2010              | 66,926                                       | 6,934                                            | 73,860                                      |

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

| Accident year | Calculated break even premium      |                                     |                                             |                                           |                                                        |                      |                            | Actual premium                       |                                       |                                 |         | Difference (break even - actual) |
|---------------|------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|--------------------------------------------------------|----------------------|----------------------------|--------------------------------------|---------------------------------------|---------------------------------|---------|----------------------------------|
|               | 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) |         |                                  |
|               | 2018                               | 7,115,731                           | 7,521,791                                   | 128,097                                   | 5,534                                                  | 22,548               | 156,912                    | 2.1%                                 | 133,760                               | 143,092                         | 1.9%    |                                  |
| 2017          | 7,282,923                          | 7,441,415                           | 115,098                                     | 4,489                                     | 20,653                                                 | 140,809              | 1.9%                       | 131,723                              | 135,462                               | 1.8%                            | -5,347  |                                  |
| 2016          | 6,845,215                          | 6,884,745                           | 114,169                                     | 4,163                                     | 20,086                                                 | 139,092              | 2.0%                       | 131,222                              | 131,222                               | 1.9%                            | -7,870  |                                  |
| 2015          | 6,594,270                          | 6,594,270                           | 112,262                                     | 4,558                                     | 20,288                                                 | 137,948              | 2.1%                       | 136,945                              | 136,945                               | 2.1%                            | -1,003  |                                  |
| 2014          | 5,929,595                          | 5,929,595                           | 94,595                                      | 4,775                                     | 17,098                                                 | 117,200              | 2.0%                       | 138,725                              | 138,725                               | 2.3%                            | 21,524  |                                  |
| 2013          | 5,199,017                          | 5,199,017                           | 97,232                                      | 3,697                                     | 15,016                                                 | 116,746              | 2.2%                       | 124,326                              | 124,326                               | 2.4%                            | 7,580   |                                  |
| 2012          | 4,633,724                          | 4,633,724                           | 74,233                                      | 2,864                                     | 14,015                                                 | 92,177               | 2.0%                       | 99,113                               | 99,113                                | 2.1%                            | 6,936   |                                  |
| 2011          | 4,138,004                          | 4,138,004                           | 70,554                                      | 2,863                                     | 11,998                                                 | 86,356               | 2.1%                       | 86,936                               | 86,936                                | 2.1%                            | 580     |                                  |
| 2010          | 3,576,580                          | 3,576,580                           | 73,860                                      | 2,624                                     | 10,680                                                 | 87,904               | 2.5%                       | 75,252                               | 75,252                                | 2.1%                            | -12,652 |                                  |

- 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) x (1 + one year historical interest rate) ^ (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 2018/19

### H3.1 Discounted incurred cost for 2018/19

We selected the number of incurred claims and average claim size for 2018/19 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 |        |        |        |        |         |
|-------------------------------------------------|---------------|--------|--------|--------|--------|---------|
|                                                 | 2018          | 2017   | 2016   | 2015   | 2014   | Adopted |
| Number of claims incurred (a)                   | 2,442         | 2,420  | 2,533  | 2,650  | 2,750  | 2,417   |
| Claim frequency per \$86,525 of wages (b)       | 2.8%          | 2.7%   | 3.0%   | 3.1%   | 3.4%   | 2.7%    |
| Average claim size (in 30 June 2018 values) (c) | 54,049        | 49,732 | 48,157 | 47,010 | 39,596 | 54,049  |

**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 two year average

(c) The adopted average claim size is a one year average, which includes the 2015 legislative amendments

Allowing for inflation of 1.20%, superimposed inflation of 2.70% and an inflation/discount factor to allow for the timing of payments of 0.9704 the discounted incurred cost for 2018/19 can be calculated as:

$$2,417 \times [54,049 \times (1 + 1.20\%) \times (1 + 2.70\%) \times 0.9704] = \$131.7 \text{ million.}$$

### ***H3.2 Expense 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.

|                            | Underwriting year |         |         |         |         | Adopted |
|----------------------------|-------------------|---------|---------|---------|---------|---------|
|                            | 2018              | 2017    | 2016    | 2015    | 2014    |         |
| Gross written premiums (a) | 135,842           | 134,286 | 114,332 | 140,232 | 156,328 |         |
| Earned premiums (a)        | 146,280           | 126,442 | 119,514 | 141,354 | 137,054 |         |
| Commission (a)             | 5,534             | 4,489   | 4,163   | 4,558   | 4,775   |         |
| Other expenses (a)         | 22,760            | 20,821  | 20,282  | 20,537  | 17,314  |         |
| Commission rate (b)        | 3.8%              | 3.6%    | 3.5%    | 3.2%    | 3.5%    | 3.7%    |
| Expense rate (c)           | 16.8%             | 15.5%   | 17.7%   | 14.6%   | 11.1%   | 16.6%   |

- Notes :** (a), (b), (c), (d) from the consolidated Form A returns  
 (e) commission / earned premium, the adopted value uses a two year average  
 (f) other expenses / gross written premium, the adopted value uses a three year average

### ***H3.3 Projected break-even premium for 2018/19***

Using the analysis above, the projected break-even premium rate for 2018/19 is:

| Underwriting year | Actual wages (a) | Discounted                       | Expenses (c) | Premium (d) | Calculated       |
|-------------------|------------------|----------------------------------|--------------|-------------|------------------|
|                   | (\$000s)         | gross incurred cost (b) (\$000s) | (\$000s)     | (\$000s)    | premium rate (e) |
| 2019              | 7,612,053        | 131,687                          | 33,513       | 165,975     | 2.2%             |

- Notes :** (a) 2018 developed earned wages, inflated for one year's wage inflation at 1.20%  
 (b) from H3.1 above  
 (c) = (b) / (1 – commission rate (3.7%) – other expense rate (16.6%)) – (b)  
 (d) = (b) / (1 – commission rate (3.7%) – other expense rate (16.6%)) x (1 + interest rate (1.9%)) ^ (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*

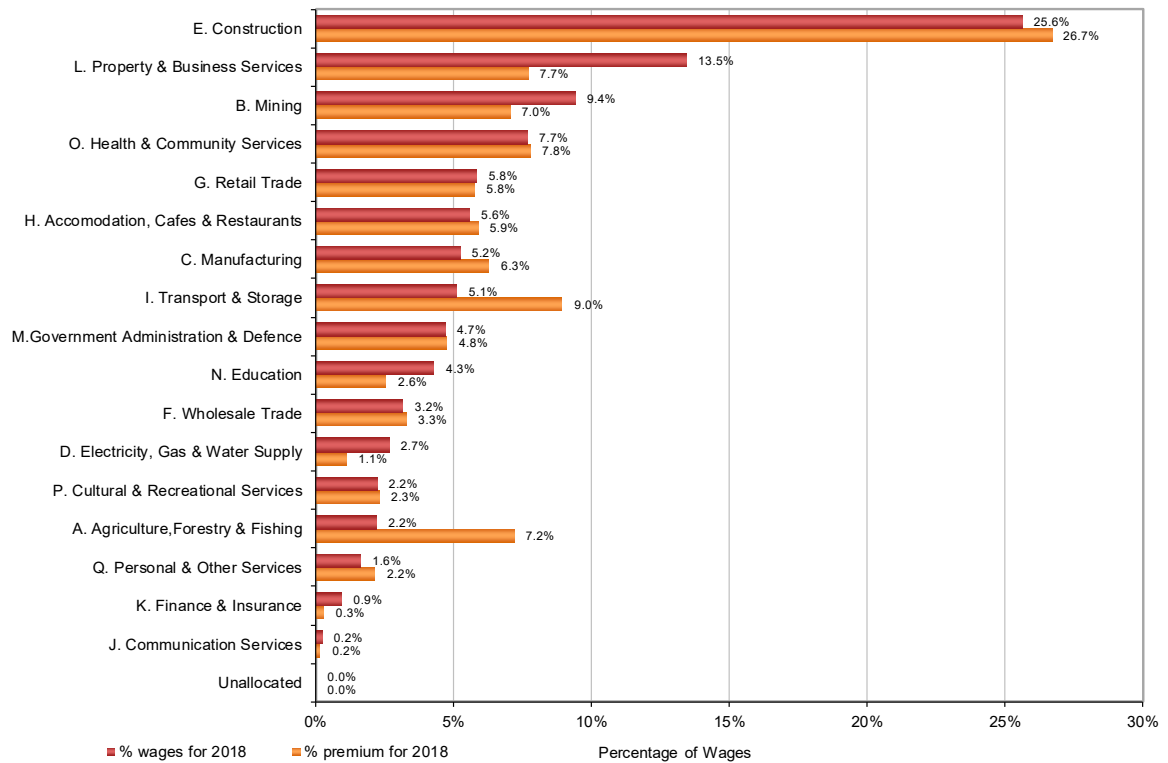
The following tables show the historical premium rates charged by industry (excluding self-insurers) on an underwriting/earned year basis.

The below table does not use developed wages or premium and does not contain an allowance for earned but not yet raised premium.

| Underwriting year basis                |              |              |              |              |              | Difference  |
|----------------------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Premium rate by ANZSIC division        | 2014         | 2015         | 2016         | 2017         | 2018         | 2018 / 2017 |
| A. Agriculture, Forestry & Fishing     | 6.51%        | 6.31%        | 5.70%        | 5.55%        | 6.01%        | 8.3%        |
| B. Mining                              | 1.98%        | 1.69%        | 1.48%        | 1.25%        | 1.38%        | 10.7%       |
| C. Manufacturing                       | 3.12%        | 2.82%        | 2.39%        | 2.27%        | 2.22%        | -2.3%       |
| D. Electricity, Gas & Water Supply     | 0.90%        | 0.84%        | 0.84%        | 0.88%        | 0.78%        | -10.8%      |
| E. Construction                        | 2.80%        | 2.31%        | 2.03%        | 1.89%        | 1.92%        | 1.5%        |
| F. Wholesale Trade                     | 2.09%        | 2.25%        | 1.94%        | 1.86%        | 1.91%        | 3.1%        |
| G. Retail Trade                        | 2.16%        | 2.09%        | 1.85%        | 1.79%        | 1.82%        | 1.7%        |
| H. Accommodation, Cafes & Restaurants  | 2.18%        | 2.11%        | 1.92%        | 1.95%        | 1.94%        | -0.3%       |
| I. Transport & Storage                 | 3.60%        | 2.98%        | 3.04%        | 2.94%        | 3.22%        | 9.5%        |
| J. Communication Services              | 1.85%        | 1.62%        | 1.50%        | 1.42%        | 1.39%        | -1.9%       |
| K. Finance & Insurance                 | 1.12%        | 0.88%        | 0.72%        | 0.67%        | 0.60%        | -10.8%      |
| L. Property & Business Services        | 1.47%        | 1.14%        | 1.11%        | 0.99%        | 1.05%        | 6.9%        |
| M. Government Administration & Defence | 2.41%        | 2.32%        | 2.04%        | 1.79%        | 1.87%        | 4.4%        |
| N. Education                           | 1.15%        | 1.08%        | 1.04%        | 1.02%        | 1.10%        | 7.6%        |
| O. Health & Community Services         | 2.36%        | 2.21%        | 2.05%        | 1.88%        | 1.87%        | -0.6%       |
| P. Cultural & Recreational Services    | 2.91%        | 1.65%        | 2.00%        | 2.18%        | 1.92%        | -12.3%      |
| Q. Personal & Other Services           | 2.49%        | 2.45%        | 2.50%        | 2.21%        | 2.44%        | 10.2%       |
| Unallocated                            | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.0%        |
| <b>Total</b>                           | <b>2.34%</b> | <b>2.08%</b> | <b>1.90%</b> | <b>1.80%</b> | <b>1.84%</b> | <b>2.6%</b> |

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 2017/18 accident year only**



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

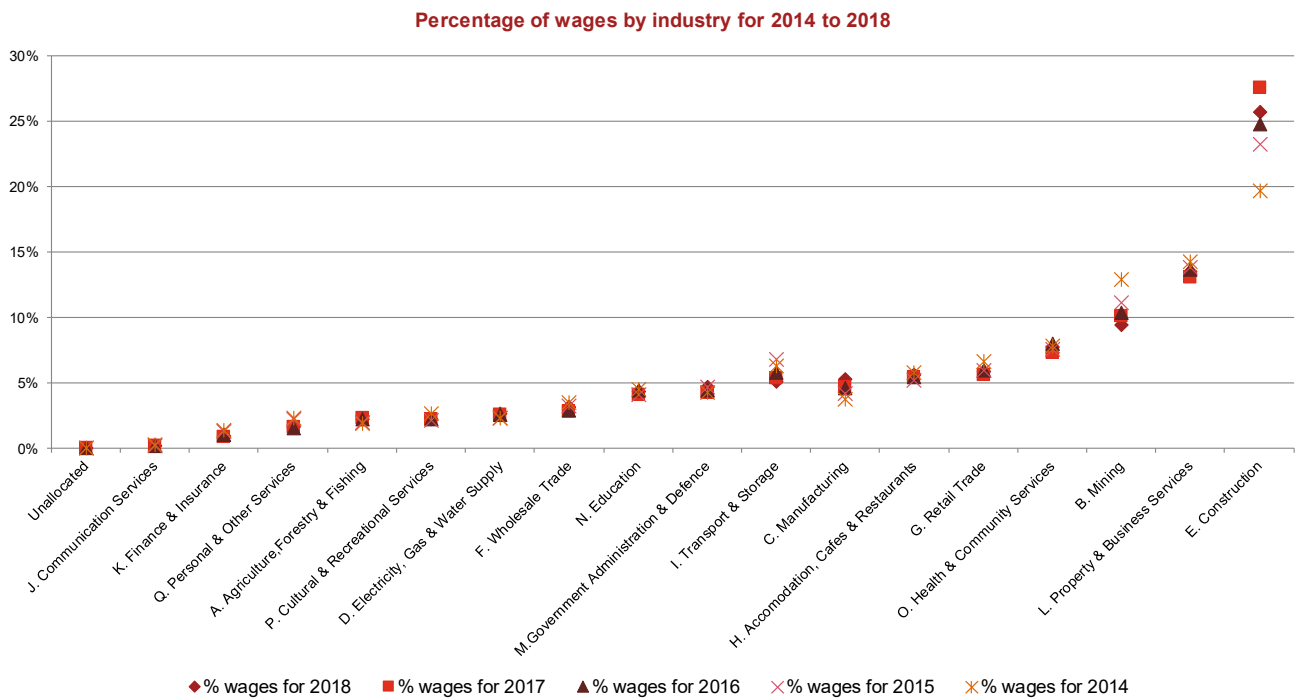
- Agriculture, forestry and fishing
- Transport and storage

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, however we note a decrease in the percentage of wages from 2017 to 2018 for Construction, as the Inpex project has moved in to the production phase.

---

# ***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 – commission rate – other expense rate) x (1 + interest rate) <sup>3</sup> / 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.

### 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: inflated and discounted provision (including risk margin)  
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 2018 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

