TAYLOR FRY

Motor Accident Insurance Commission

Retrospective profit study of Queensland CTP premiums as at 31 December 2019

05 May 2020

Version: FINAL

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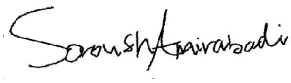

Soroush Amirabadi

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1 EXECUTIVE SUMMARY

1.1 Levels of Scheme profit

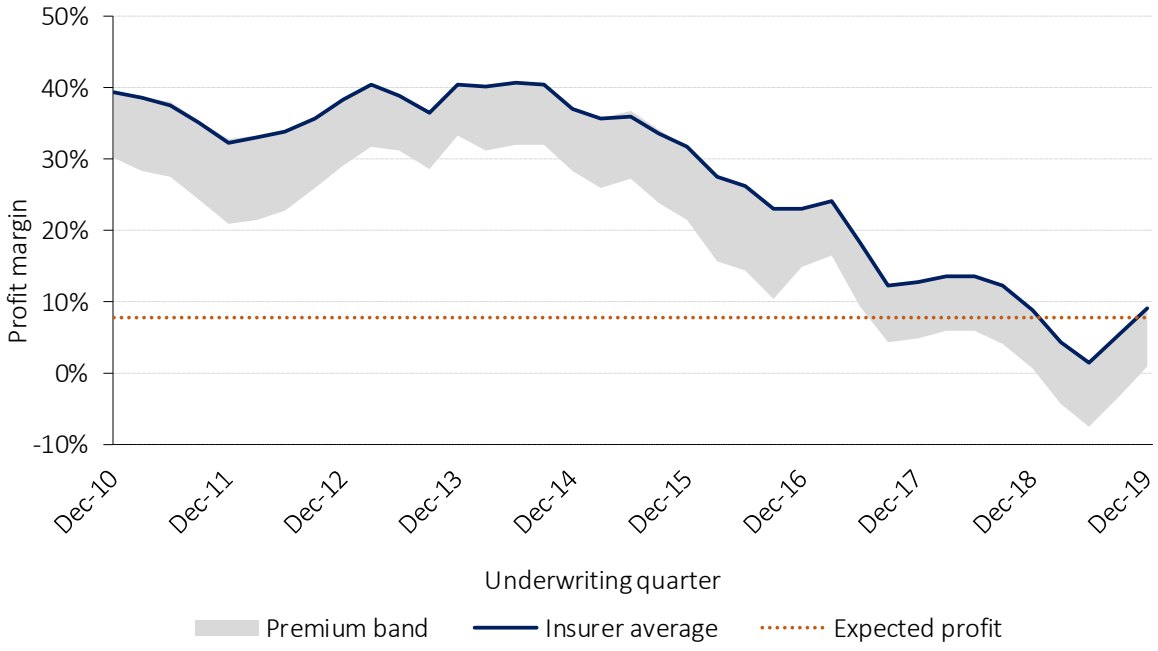
Table 1.1 shows our latest estimates of the average Scheme profit as at 31 December 2019 as a percentage of insurer premiums, and in dollar values per policy incorporating an allowance for 0.5% p.a. future superimposed inflation.

Table 1.1 Scheme retrospective profit margins for all classes as at 31 December 2019

Underwriting Period	Profit margin (insurer average premium, 0.5% p.a. superimposed inflation)	
	%	$
2015	34%	98
2016	25%	70
2017	17%	40
2018	12%	27
2019	5%	11
Most recent 3 years	11%	26
Most recent 5 years	19%	49

Figure 1.1 shows the Scheme profit margin over time incorporating an allowance for 0.5% p.a. future superimposed inflation.

Figure 1.1 Scheme retrospective profit margin for MAIC premium band and insurer average premiums



Insurers price at or close to the ceiling premium on average. The insurer average premium achieves a profit margin above the expected profit margin for all underwriting quarters up to Dec-18. For more recent underwriting quarters, the profit estimates are mostly informed by our projection models rather than the result of actual experience.

1.2 Uncertainties in the estimated profit margin

Estimates of profit for CTP insurance are subject to considerable degrees of uncertainty due to the dynamic environment. CTP is a long-tailed class and it takes many years before an underwriting quarter's claims cost can be known with a high degree of certainty. Actual results may be materially different from the results presented in this report, particularly for more recent underwriting quarters, because the present results are largely or wholly based on current model estimates.

Table 6.4 in the body of the report shows our assessment of profit for the last few measurement years.

We note that our estimates of the projected ultimate average claim size for future underwriting quarters decreased in real terms up to the measurement year 2018, as evidence of a weakening severity profile and lower than expected finalisation sizes emerged. However, in recent times, our finalisation model average claim size showed a slight increase over 2018 followed by a 2% increase in 2019. This is a change to the previous trend of increasing profit estimates.

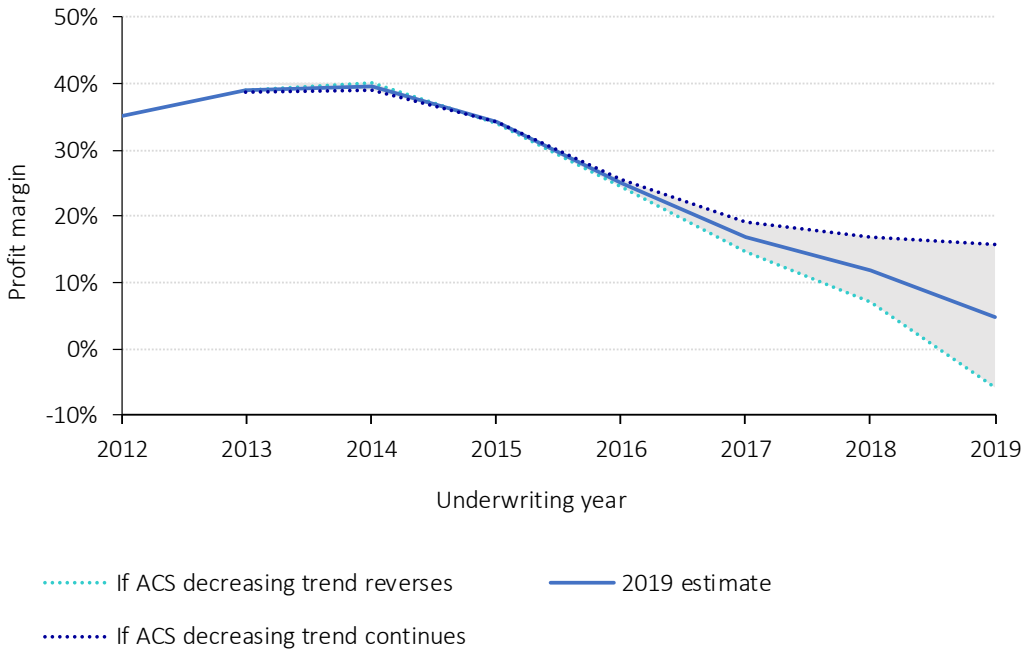
Of particular note in the current profit estimates are our allowances for a continued average claim size reduction as indicated by our Claims mix model, approximately offset by an allowance for an increasing proportion of claims with a psychological injury code. These allowances are described in Section 4.7.

The allowances are particularly uncertain in the sense that they build in features that have not yet emerged in finalised claim sizes. They appear to be supported by the current case estimates of insurers but case estimates can change materially (and have recently done so) until claims are finalised.

Focusing on the allowance for claims with a psychological injury code, to the extent that the increase in these claims represents the possibility of similar claims settling for more than they would have in previous years, there must be a possibility that insurers are able to bring any cost increases under control. There is also the possibility that the increased costs are higher than the allowance we have made. We have tried to adopt a central estimate but the range of uncertainty is wide and depends, in part, on the management actions of insurers.

We illustrate in 4 the degree of uncertainty in the estimated profit margin. The upper end of the grey region in 4 assumes that the decreasing trend in the average claim size as seen up to 31 December 2018 resumes and then continues. The lower end of the grey region assumes that the pattern reverses. The region narrows as one moves to the left because more of the claims cost has been paid and so the uncertainty is less. The grey region should be treated as indicative only and results which lie outside it are certainly possible.

Figure 1.2 Profit margin with uncertainties



2 BACKGROUND AND SCOPE

2.1 General

Queensland operates a common law "fault" based compulsory third party scheme, first introduced in 1936. The scheme provides motor vehicle owners with insurance policies that cover their unlimited liability for personal injury caused by, through, or in connection with the use of the insured motor vehicles anywhere in Australia. It is underwritten by private licensed insurers.

2.2 Relevant legislation

The Motor Accident Insurance Amendment Act 2000 ("the Amendment Act") took effect from 1 October 2000. This implemented a number of changes, bringing in statutory limits, of which one of the most significant was a restriction on plaintiff costs.

From 1 October 2000, the insurers, operating in a competitive market, determine the premiums within a range between the maximum ("ceiling") and minimum ("floor") rates set by MAIC.

The accident periods subject to the Amendment Act, i.e. from October 2000, will be referred to as constituting "the New Scheme". Earlier accident periods will be referred to as constituting "the Old Scheme".

The Civil Liability Act 2003 ("CLA") applies to all accidents occurring on or after 2 December 2002. It affects the type of claims that can be made as well as bringing in further statutory limits, restricting some of the damages that can be claimed.

In relation to the latter, it contains Injury Scale Values ("ISV") used for calculating general damages arising from incidents on or after 2 December 2002. Under the Act, general damages are calculated after consideration of the application of the ISV set out in the regulations.

The Civil Liability and Other Legislation Amendment Act 2010 ("CLAA") increased the ISV scale amounts for general damages and the maximum recoverable legal costs. These changes apply for injuries occurring on or after 1 July 2010. The CLAA also made provision for further indexation, linked to AWE increases.

The Civil and Criminal Jurisdiction Reform and Modernisation Amendment Act 2010 ("CCJRA") increased the jurisdictions of the District and Magistrates Courts. The effect is that, from 1 November 2010, many of the claims which would have previously been heard by the District Court will now be heard by the Magistrates Court and that some of those claims which would have been heard in the Supreme Court will be heard in the District Court.

2.3 Scope of this report

MAIC have requested that Taylor Fry conduct a review of the retrospective profitability of the premiums for the Queensland CTP Scheme for all vehicle classes. Of interest is the comparison of the hindsight non-ITCE premium with the floor and ceiling premiums, and the average filed insurer premium.

We have relied upon the advice given to MAIC on components of the risk premium for CTP insurance policies underwritten in the quarter 1 July to 30 September 2020. This advice was based on data to 31 December 2019 and is the latest complete annual advice given to MAIC. We will refer to this as "the Annual Advice".

An abridged version of that advice, for circulation to insurers, appeared as "Queensland CTP Market Briefing: Insurer annex - Review of the risk premium for the 2020Q3 underwriting quarter", dated 24 March 2020, by Richard Brookes and Nelson Vasconcelos. This will be referred to subsequently as "the Risk Premium report".

All results in the report are presented on an all classes basis unless stated otherwise.

2.4 Previous report

The report titled “Retrospective profit study of Queensland CTP premiums as at 31 December 2018” dated 27 May 2019, by Richard Brookes and Nelson Vasconcelos (“the Previous Report”) was based on data to 31 December 2018 and is the counterpart to this present report. It is referred to subsequently as “the Previous Report”. The methodology adopted in this report is largely unchanged from the Previous Report.

3 DATA

3.1 Items of data

3.1.1 General

In producing this report, we have relied on the following sources of data:

- Numbers of vehicles registered by month from July 2000 to December 2019
- Quarterly floor and ceiling premium rates
- Premium assumptions
- Insurers' rate and expense filings
- Analysis from the Annual Advice.

3.1.2 Number of vehicles registered

This consists of total vehicle registrations, split by vehicle class for each month since 1 July 2000. The most recent twelve months of exposure was extracted and provided by MAIC on 28 January 2020. For exposure prior to this, we have relied upon the data from the Previous Report.

3.1.3 Quarterly floor and ceiling premium rates

Quarterly floor and ceiling premium rates for all classes were provided by MAIC for the period 1 July 2004 to 30 June 2020 on 31 January 2020.

3.1.4 Premium assumptions

The assumptions adopted by MAIC for the calculation of the floor and ceiling premiums for all classes were provided by MAIC on 31 January 2020. This information included the underlying assumptions for expenses, profit margin, vehicle class relativities, and average seat numbers for Classes 10A, 10B and 11 for underwriting periods beginning 1 October 2005 to 1 April 2020. For periods before 1 October 2005, we have relied upon the data from the Previous Report.

3.1.5 Insurers' rate and expense filings

Insurers' rate filings for all classes along with their expense filings were provided by MAIC for the period 1 January 2008 to 30 June 2020 on 31 January 2020.

4 METHODOLOGY

The aim of this study is to compare hindsight estimates of the non-ITCE premium with the floor and ceiling premiums set by MAIC, and the premiums filed by insurers, since the commencement of the New Scheme.

4.1 General

The National Injury Insurance Scheme Queensland (NIISQ) came into effect from 1 July 2016. All lifetime care and support costs for catastrophically injured claimants arising from accidents after 1 July 2016 will be covered under NIISQ. This is expected to reduce the average claim size for policies underwritten from 1 July 2015 due to the reduction in costs covered by CTP scheme after 1 July 2016. The claim frequency will remain unchanged as certain heads of damages (HOD) such as economic loss will still be covered by CTP scheme.

Since the 2018 review, we have projected claim sizes on the net-of-NIISQ basis.

The estimation of the hindsight premium is as follows:

- Hindsight estimates (as at 31 December 2019) of Scheme claim frequency and net-of-NIISQ gross (of ITC/DAM) claim size by accident quarter were consistent with the Risk Premium report. Estimates covered accident quarters from 31 December 2000 to 31 December 2019 and were in 31 December 2019 dollar values
- The claim size estimates were inflated to the middle of the calendar quarter in which they belong
- Estimates of the claim size and claim frequency by underwriting quarter were then derived
- For accidents which occurred before 1 July 2016, we adjusted the claims size projection to reflect the pre-NIISQ Scheme, where there is no claim cost transferred from the insurers to NIISQ. Details on the adjustment are in Section 4.6
- The claim size estimates were discounted to the middle of the underwriting quarter in which they belong
- The net risk premium was calculated as the product of claim frequency and the net average claim size (gross average claim size net of GST)
- The hindsight (non-ITCE) premium was then calculated using the claims handling expense, acquisition and reinsurance cost and profit margin assumptions as used by MAIC in the corresponding underwriting quarters
- For the purposes of comparison, premiums excluding GST and levies have been used at all times.

All the underwriting quarters included in our analysis have some claims to be settled and most have some claims yet to be reported. Therefore, our calculation of hindsight premium depends on our projection of the number and size of claims to be settled for each underwriting quarter. The more recent the underwriting quarter, the more dependent the estimated hindsight premium is on the assumptions underlying our projection.

Some details of the calculation follow.

4.2 Inflating future payments

Future finalised claim payments have been inflated to the middle of the calendar quarter to which they belong using a market-based model based on the shape of current nominal and inflation-linked bond yield curves, the QLD unemployment rate and long run assumptions of CPI and the gap between AWE and CPI. Full details of this model are outlined in the discussion paper “An alternative approach to forecasting wage inflation” dated 29 July 2019 by Richard Brookes and Nelson Vasconcelos. Future finalised claim payments are sourced from the Annual Advice.

4.3 Discounting payments

Claim payments have been discounted to the middle of the underwriting quarter using the Government bond yield curve as at the end of the underwriting quarter.

4.4 Expenses, allowances and expected profit margin

In their calculation of the floor and ceiling premiums, MAIC make assumptions regarding:

- Claims handling expenses (percentage of risk premium)
- Acquisition costs (dollar cost)
- Reinsurance costs (dollar cost).

These assumptions vary by underwriting quarter and vehicle class. We have used the assumptions from the ceiling calculation in our calculation of hindsight premium, effectively assuming that they represent the actual experience of insurers. The changes in these over the recent past for class 1 vehicles are:

- Claims handling expenses has increased from 5.50% of the premium per policy to 6.25% of premium per policy at 1 January 2018
- Acquisition costs reduced from $25 to $5 per policy at 1 October 2010, increased to $7 per policy at 1 July 2013, increased to $8 per policy at 1 July 2015 and increased to $10 per policy at 1 July 2019
- Reinsurance costs decreased from $5 per policy to $4 per policy at 1 July 2013 and decreased to $2 at 1 October 2016 following the introduction of NIISQ.

MAIC sets an allowance for profit. This profit margin is defined as the percentage of the total premium that is profit (rather than the percentage loading on expected costs). We maintain this definition of profit margin throughout this report. This expected profit margin is 8.5% of the corresponding premium up to 30 June 2008, and 7.75% of the corresponding premium from 1 July 2008.

4.5 Superimposed inflation

The procedure as described above was performed assuming future finalisation period superimposed inflation ("SI") of 0.5% p.a. from 31 December 2019. This is what MAIC allowed for in their calculation of ceiling and floor premium as at 31 December 2019.

4.6 Adjustment for introduction of NIISQ

NIISQ came into effect from 1 July 2016. All lifetime care and support costs for catastrophically injured claimants arising from accidents after 1 July 2016 will be covered under NIISQ. This is expected to reduce the average claim size for policies underwritten from 1 July 2015 due to the reduction in costs covered by CTP scheme. The claim frequency will remain unchanged as certain heads of damages (HoD) such as economic loss will still be covered by CTP scheme.

In the retrospective profit study this year, we updated the adjustment approach for introduction of NIISQ so that:

- Claim sizes are modelled on a net of NIISQ basis by removing all payments from the data which we assess would have qualified for the NIISQ if it had always been existence. This means that the projected sizes of all NIISQ-eligible claims directly incorporate a reduction in costs covered by the NIISQ.
- For claims incurred prior to 1 July 2016, claim sizes are adjusted to a gross of NIISQ basis by adding back payments and case estimates of NIISQ-eligible claims for HoDs that would have been covered by the NIISQ. This is because NIISQ is not applicable to these claims hence no claims cost was transferred to NIISQ.

We made adjustments to policies underwritten from 1 July 2015 to 30 September 2016 to reflect insurers' payments to MAIC for the exposure covered by NIISQ (known as 'NIISQ claw back').

4.7 Adjustment for lead indicators of claim size

Our model for average claim size projection is sourced from the Annual Advice which is informed primarily by the size of finalised claims. In the Annual Advice, we further adjusted the average claim size using lead indicators. This is to recognise changes to the mix of claims or changes to the management/settlement environment, especially when the claims affected have not yet finalised. Two lead indicators used are claims mix model trends in non-serious claims and the possible impact of a growth in claims with a psychological injury code.

Our claims' mix model indicates a growing frequency of legally represented, non-serious, same direction claims until the 2017 accident year and an established decreasing trend in the size of all legally represented, non-serious claims. This suggests that further drops in claim size, beyond those reflected in our finalised claim models, are likely. We reduced the average claim size projection by 3% in the Annual Advice. As a result, the future average claim sizes are reduced by 3% for accident years from 2017 onwards in this retrospective profit study.

There has been a sharp increase in the proportion of claims with a psychological injury code since accident year 2018. Although there has not yet been a significant impact of the increase of claims with a psychological injury code on finalised claim sizes, in our opinion there are sufficient indicators of a future impact to make an allowance in our latest Annual Advice of 4%. The future average claim sizes for accident years from 2018 onwards incorporate this 4% increase in this retrospective profit study.

Readers are referred to our Annual Advice for a full discussion of the allowance. However, in summary it reflects an increasing proportion of claims being coded with a psychological injury code and that claims with such a code have historically settled at higher amounts than those without. There is not yet evidence in finalised sizes that these extra psychological claims have settled at higher amounts but current insurer case estimates suggest that they will. Case estimates can, and frequently do, change before claim finalisation so it may be that the increased costs indicated by them do not emerge. Also there is a possibility that insurers are able to bring any cost increases under control. However, there is also the possibility that the increased costs are higher than the allowance we have made. We have tried to adopt a central estimate but the range of uncertainty is wide and depends, in part, on the management actions of insurers.

5 RESULTS

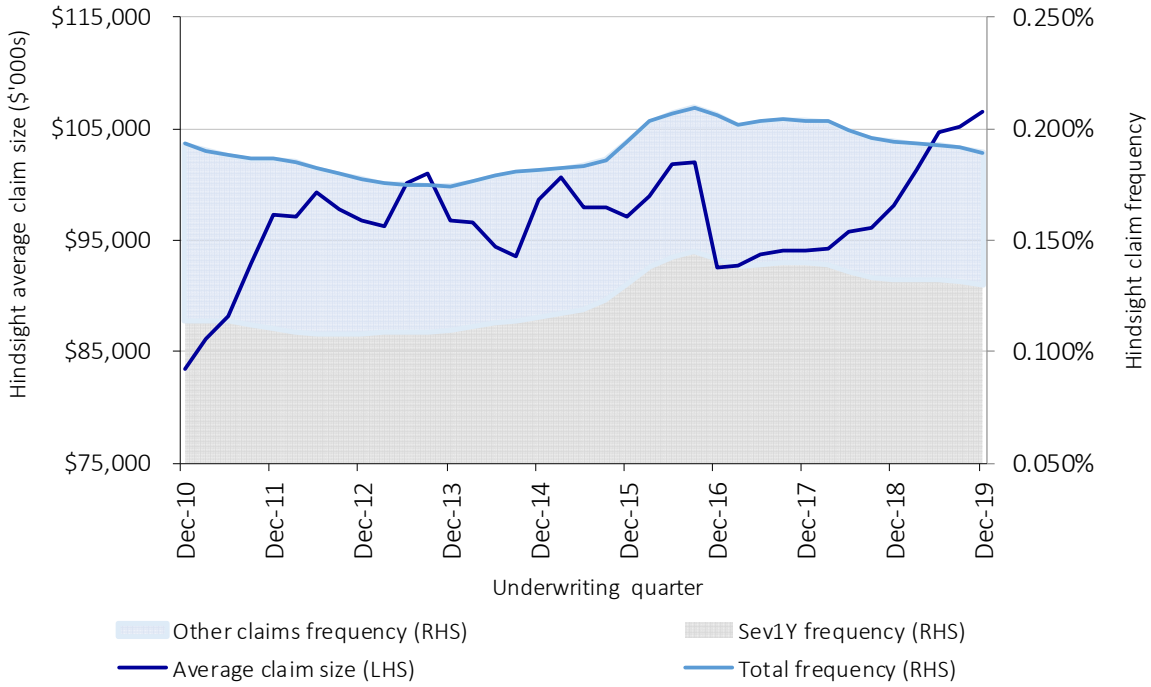
5.1 Hindsight premium

5.1.1 Hindsight risk premium

Figure 5.1 displays the Scheme hindsight claim frequency and average claim size, assuming no future superimposed inflation, from the 31 December 2010 to 31 December 2019 underwriting quarters.

Figure 5.1 also separates the frequency of legally represented Severity 1 claims ("Severity 1Y", area shaded in grey) from that of the rest of the claims (area shaded in blue).

Figure 5.1: Estimated hindsight claim frequency and average claim size (in historical values)

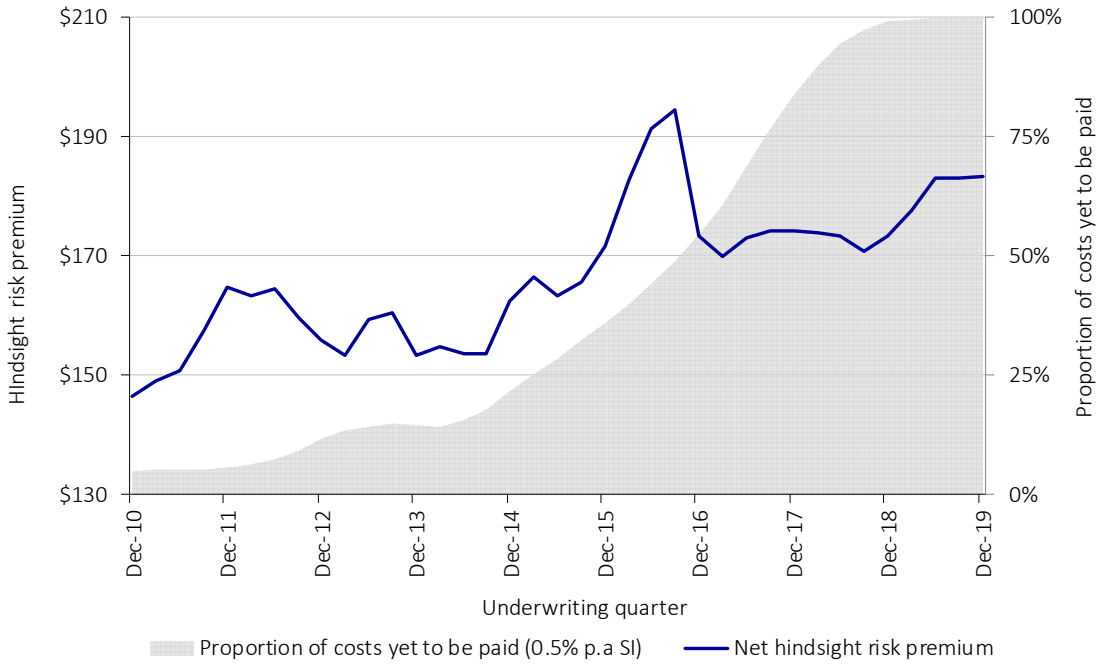


Frequency trended downwards to 2014 then increased to a peak in 2016. It has been decreasing since the peak. The current estimate for the 2019 underwriting year is approximately 0.192%.

The average claim size increased significantly for policies underwritten during 2011 then remained at a high level for underwriting years from 2012 to 2016. Following the introduction of NIISQ, the average claim size fell sharply and stayed below $95,000 to the second half of underwriting year 2018 as part of the claim costs were transferred to the NIISQ. This was followed by a significant increase to the end of the underwriting year 2019, mainly driven by an allowance for potential development of claims with a psychological injury code and an increase in the average finalised claim size over the year. Note that these estimates of average claim size are in historical values. In current values, the inflation impact mostly offsets the increasing trend post NIISQ.

Figure 5.2 shows the resulting hindsight risk premium for the 31 December 2010 to 31 December 2019 underwriting quarters.

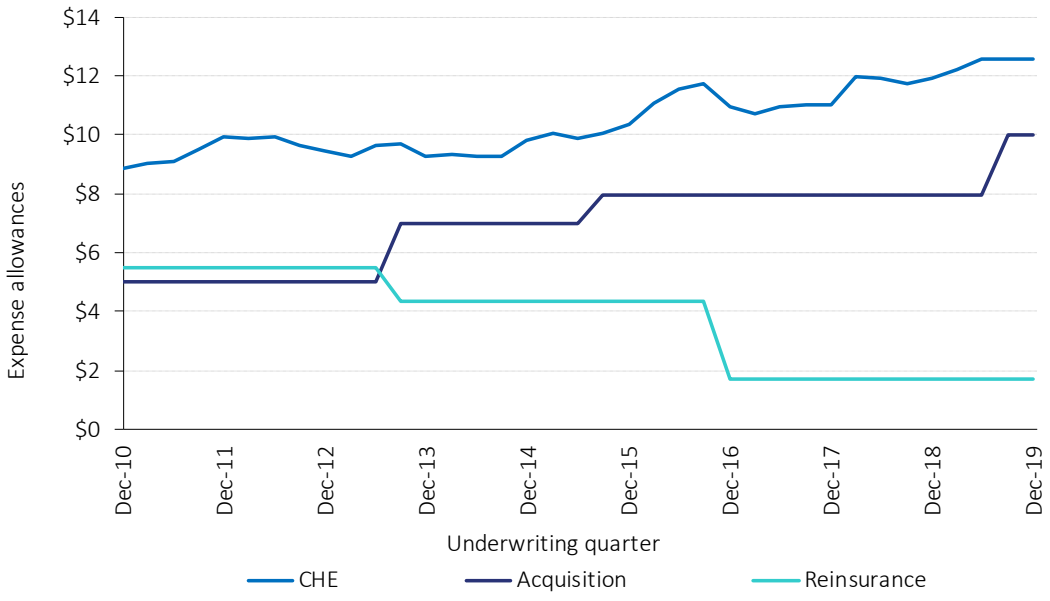
Figure 5.2 Scheme hindsight risk premium



5.1.2 Expenses and allowances

Figure 5.3 shows the expenses and allowances. The CHE and acquisition costs have increased since 2010. The reinsurance cost allowances were decreased from 1 October 2016 as a consequence of the introduction of the NIISQ.

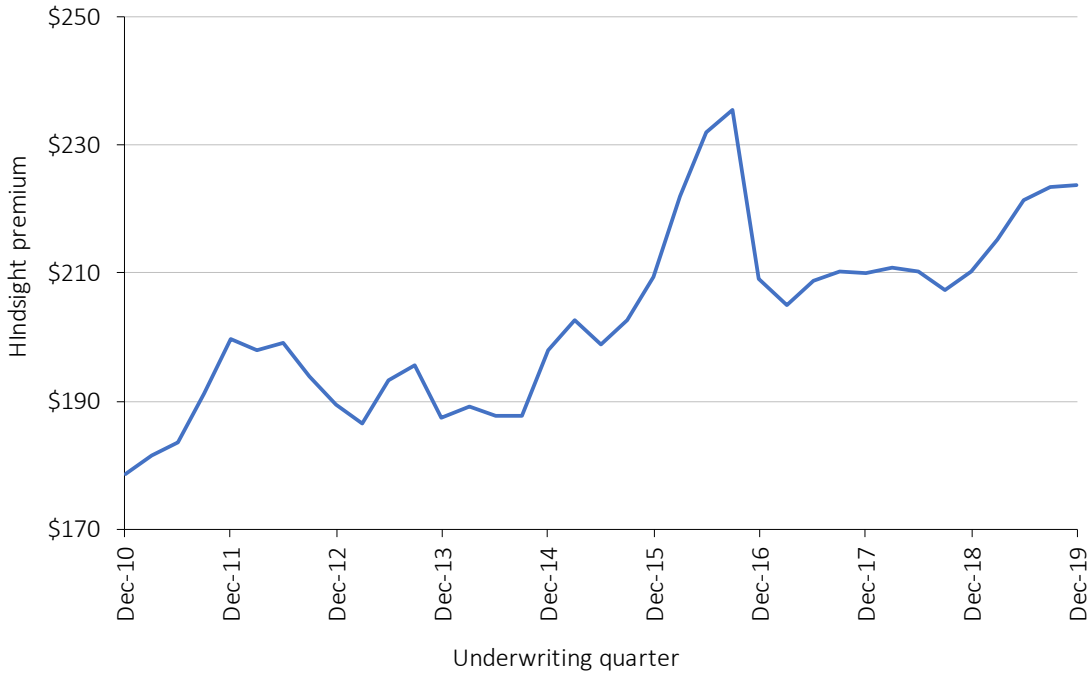
Figure 5.3 Expenses and allowances



5.1.3 Scheme hindsight premium

Combining the risk premiums, expenses and allowances and the expected profit margin gives the hindsight premiums illustrated below in Figure 5.4. This hindsight premium is a combination of the hindsight risk premium shown in Figure 5.2 and the expenses and allowances shown in Figure 5.3. These hindsight premiums do not include GST.

Figure 5.4 Scheme hindsight premium (incl. expected profit margin)

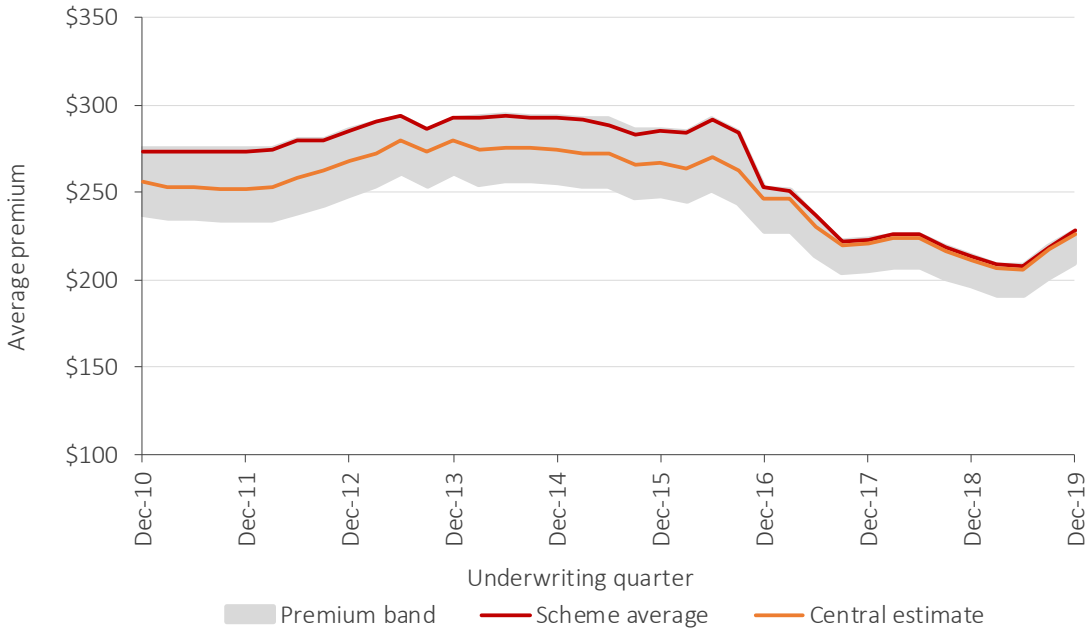


5.2 Central estimate, floor, ceiling and average insurer premiums

Figure 5.5 shows the central estimate premiums as set by MAIC and the premium band around these premiums within which the insurers can set premiums for the 31 December 2010 to 31 December 2019 underwriting quarters. The boundaries of the premium band are referred to as the premium floor and the premium ceiling. Since the Dec-16 underwriting quarter, the ceiling allowance has been reduced. It has resulted in a narrower premium band and closer ceiling premiums to the central estimates.

Average insurer premiums are also shown in Figure 5.5. In addition to lower ceiling allowance, the reduction in premium from 1 October 2016 is a result of the transfer of cost to the NIISQ (the "NIISQ offset"). As regards insurer's payments to MAIC for the exposure covered by NIISQ for underwriting period from 1 July 2015 to 30 September 2016 (known as "the NIISQ claw back"), we have not adjusted the average insurer premium, but instead, chosen to adjust the relevant claim costs to reflect the claw back, for the benefit of better consistency with the rest of the methodology.

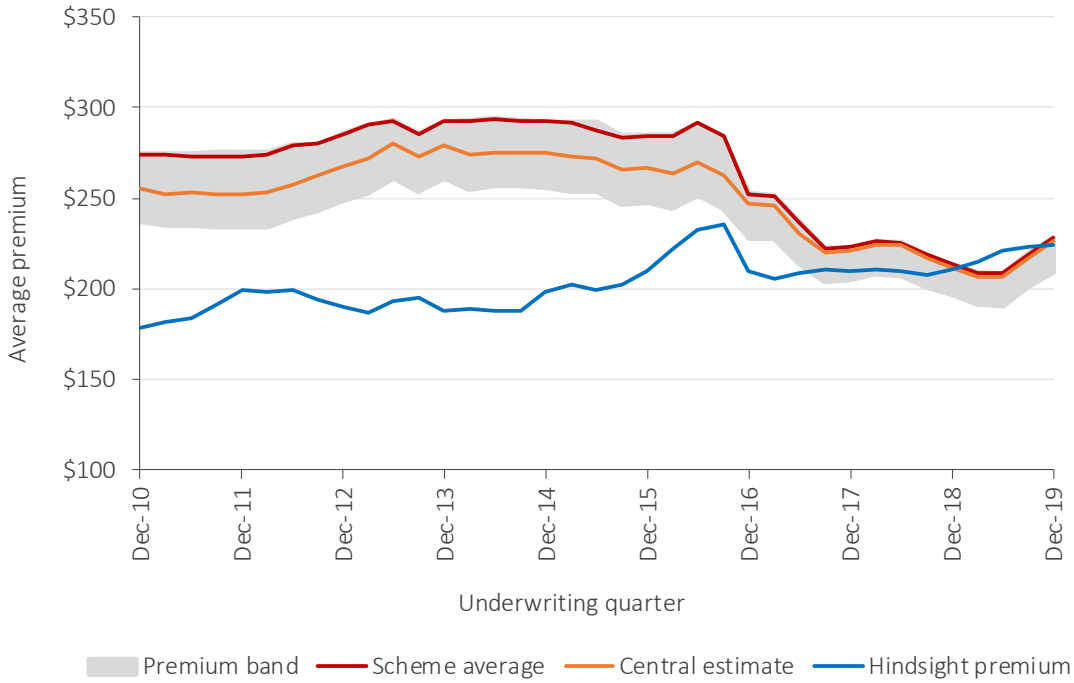
Figure 5.5 MAIC central estimate, premium band and insurer average premiums



5.3 Profit

Figure 5.6 shows the central estimate, insurer average premium and premium band versus the hindsight premium based on future superimposed inflation of 0.5% p.a. This is a combination of Figure 5.4 and Figure 5.5.

Figure 5.6 Scheme premium central estimate, premium band, insurer average premium and hindsight premiums



Insurer average premiums are above the hindsight for all underwriting quarters up to Dec-18.

Pricing at the ceiling provides a similar result to the insurer average as most insurers have priced at this level most of the time.

Pricing at the floor has provided profit above the expected profit margin for most underwriting quarters before 2017. However, we expect that pricing at the floor would have led to less than expected profits for underwriting quarters since 30 September 2017. These observations in relation to pricing at the floor are not particularly relevant to the insurers, but we include them to show the degree of profit available to insurers if they had all chosen to price at the floor.

Figure 5.7 shows the profitability expressed as a profit margin. It is worth noting that results for the most recent underwriting quarters are the most sensitive to future superimposed inflation assumption and to our projection of the average claim size.

Figure 5.7 Scheme profit margin for insurer average premium

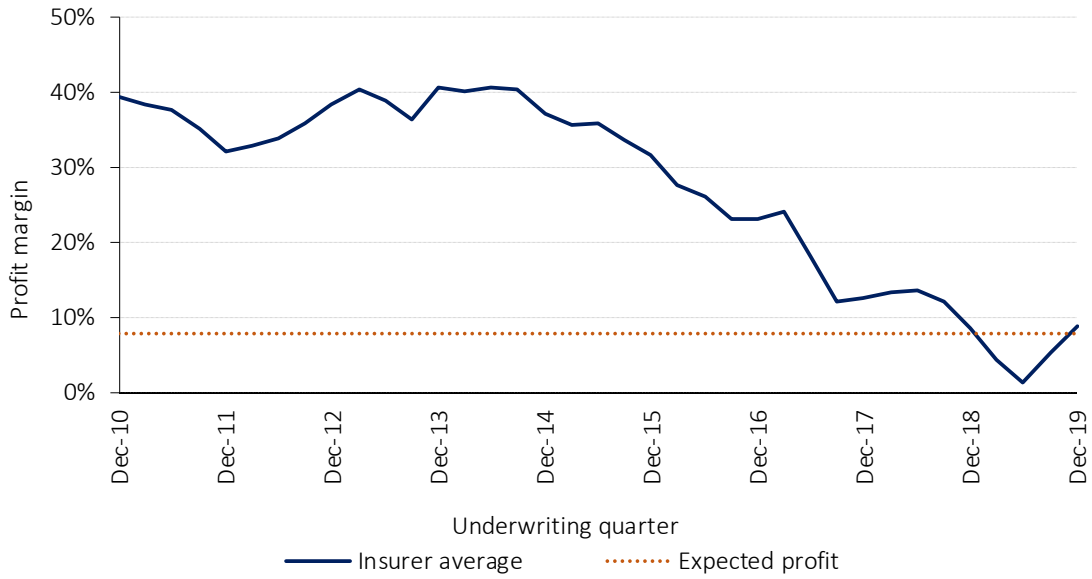
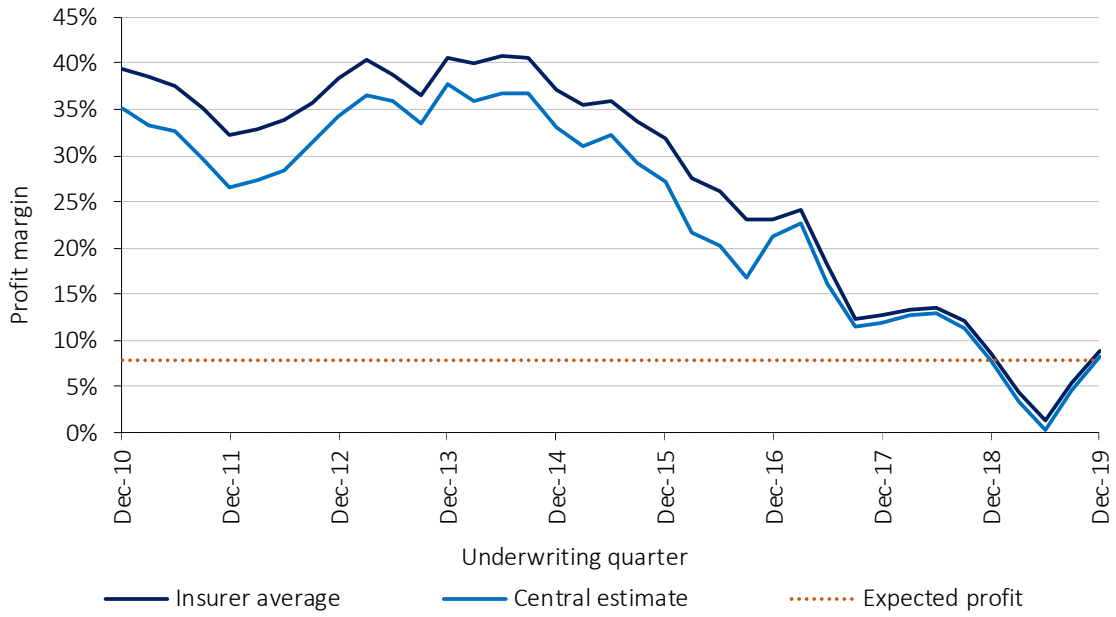


Figure 5.8 shows the central estimate alongside the insurer average premium. The insurer average has been consistently above the central estimate. Both of these remained above the expected profit level until the last underwriting quarter of 2018.

Figure 5.8 Scheme retrospective profit margin for central estimate and insurer average



The most recent underwriting quarters are entirely dependent on projections and are likely to be revised in future reviews.

We summarise these profit results over selected periods in Table 5.1.

Table 5.1 Scheme profit margins (0.5% p.a. superimposed inflation)

	Insurer average	Ceiling	Floor
Most recent 3 years	11%	11%	3%
Most recent 5 years	19%	19%	10%

6 RECONCILIATION

In this section, for the last five underwriting years we reconcile:

- The Scheme all-class retrospective profit margin with the profit margin assumed by MAIC when setting the floor and ceiling
- The Scheme all-class retrospective profit margin with the corresponding Scheme all-class retrospective profit margin from previous year using the Previous Report's rebased results.

Finally, we show how the estimated profit by underwriting year has changed over the last few measurement years.

6.1 Profit margin assumed by MAIC

Table 6.1 shows the reconciliation between the retrospective profit margin for all classes with the profit margin assumed by MAIC when setting the floor and ceiling. The table quantifies the following nine change categories:

1. Insurers filing near ceiling – the additional profit resulting from insurers pricing at or near the ceiling premium rather than at the central estimate premium where the expected profit margin is applied
2. Claim frequency deviation – the change in profit resulting from a difference between the claim frequency expected at underwriting and the current expected claim frequency (actual and the latest forecast)
3. Average claim size deviation – the change in profit resulting from a difference between the average claim size expected at underwriting and the current expected average claim size (actual and the latest forecast)
4. Adopted superimposed inflation – the change in profit resulting from the difference between the adopted superimposed inflation rate at underwriting and the observed superimposed inflation since underwriting (with a floor of 0% p.a.)
5. Loadings – the change in profit resulting from assumed increase in claim size due to the CLAA and 2012 tax change not emerging
6. Economic gap – the change in profit resulting from the difference between the advised gap and the gap MAIC used to set the floor and ceiling
7. Advised AWE – the change in profit resulting from the difference between the single-rate AWE rate advised by Taylor Fry prior to underwriting and the current wage inflation (actual and the latest forecast)
8. Yields – the change in profit resulting from any change between the Government bond yield curve as at the time MAIC sets the floor and ceiling and the Government bond yield curve at the end of the underwriting quarter
9. Change in future superimposed inflation –policies written to 31 March 2017, were priced under a floor/ceiling regime incorporating the assumption that claim payments would experience superimposed inflation (SI) of 2.5% per annum. MAIC revised the allowance for future SI used in the floor/ceiling down to 1% per annum for policies written from 1 April 2017. The future SI allowance was then further reduced to 0.5% per annum for underwriting quarters from 1 July 2019 onwards.

Table 6.1 Reconciliation of profit margin per policy to expected profit

Period	Expected profit margin	Changes due to									All-class insurer average profit margin[1]
		Insurers filling near ceiling	Claim frequency deviation	Average claim size deviation	Superimposed inflation deviation	Loadings deviation	Economic gap	Advised AWE	Yields	Change in future super-imposed inflation	
2015	8%	6%	-5%	10%	6%	2%	0%	7%	-1%	1%	**34%**
2016	8%	6%	-11%	10%	5%	1%	0%	6%	-1%	1%	**25%**
2017	8%	1%	-6%	3%	2%	1%	0%	6%	1%	1%	**17%**
2018	8%	1%	2%	-5%	1%	0%	0%	5%	0%	1%	**12%**
2019	8%	1%	3%	-8%	0%	0%	0%	4%	-4%	1%	**5%**
Mar-19	8%	1%	3%	-9%	1%	0%	0%	4%	-4%	1%	**4%**
Jun-19	8%	1%	3%	-11%	1%	0%	0%	5%	-6%	2%	**1%**
Sep-19	8%	1%	3%	-7%	0%	0%	0%	4%	-3%	0%	**5%**
Dec-19	8%	1%	4%	-6%	0%	0%	0%	4%	-2%	0%	**9%**
Most recent 3 years	8%	1%	0%	-4%	1%	0%	0%	5%	-1%	1%	**11%**
Most recent 5 years	8%	3%	-3%	2%	3%	1%	0%	6%	-1%	1%	**19%**

1. As seen in Section 5.3. May not sum due to rounding.

Of particular interest in Table 6.1 over the past five years:

- The average claim sizes have been lower than allowed for in pricing, resulting in additional profitability of 2%. Average claim sizes have been higher than allowed for in pricing for underwriting years 2018 and 2019. This is mainly due to an allowance for potential development of claims with a psychological injury code for accident years from 2018.
- The AWE growth has been lower than forecast at the time of premium setting, resulting in additional profitability of 6%
- The superimposed inflation projection was 2.5% p.a. for underwriting quarters to 31 March 2017 then 1% p.a. for underwriting quarters from 1 April 2017 to 30 June 2019. These superimposed inflation assumptions have not emerged, resulting in additional profitability of 3%.

6.2 The previous report

Table 6.2 shows the reconciliation between the profit margin and the results from the Previous Report. We show five changes:

1. Claim frequency deviation – the change in profit resulting from a difference between the expected claim frequency in the previous report and the current expected claim frequency (actual and the latest forecast)
2. Average claim size deviation – the change in profit resulting from a difference between the average claim size in the previous report and the current expected average claim size (actual and the latest forecast)
3. Claims mix model – the change in profit resulting from the allowance for claims mix model trend in non-serious claims which we have incorporated into future average claim size projection at this retrospective profit study
4. Psychological claim impact – the change in profit resulting from the allowance for potential development of claims with a psychological injury code which we have incorporated into future average claim size projection in this report
5. SI during the year and future SI – the change between assumed SI at the Previous Report and the combination of actual SI since the Previous Report and assumed SI for this report
6. Future wage inflation – the change between projected wage inflation at the Previous Report and current projected wage inflation.

Table 6.2 shows that there has been little change in the retrospective profit margin since the Previous Report for the older underwriting periods. There were slight decreases in retrospective profitability over the past year for underwriting years up to 2017, mainly due to an increase in the average claim size. Large claims experience over the year has mainly driven the increase in the average claim size for underwriting years 2014 and 2015, along with a minor change in how we have projected costs for large open claims. On the other hand, the change in the average claim size for the 2016 and 2017 underwriting years is attributed to an increase in the claim size projection.

The impact of change in average claim size to incorporate trends in claims mix model is largely offset by the allowance of potential impacts of psychological claims. It is also worth noting that more recent periods are prone to greater change because these have less realised experience and thus a greater reliance on valuation projections.

Table 6.2 Reconciliation of profit margin per policy to expected profit

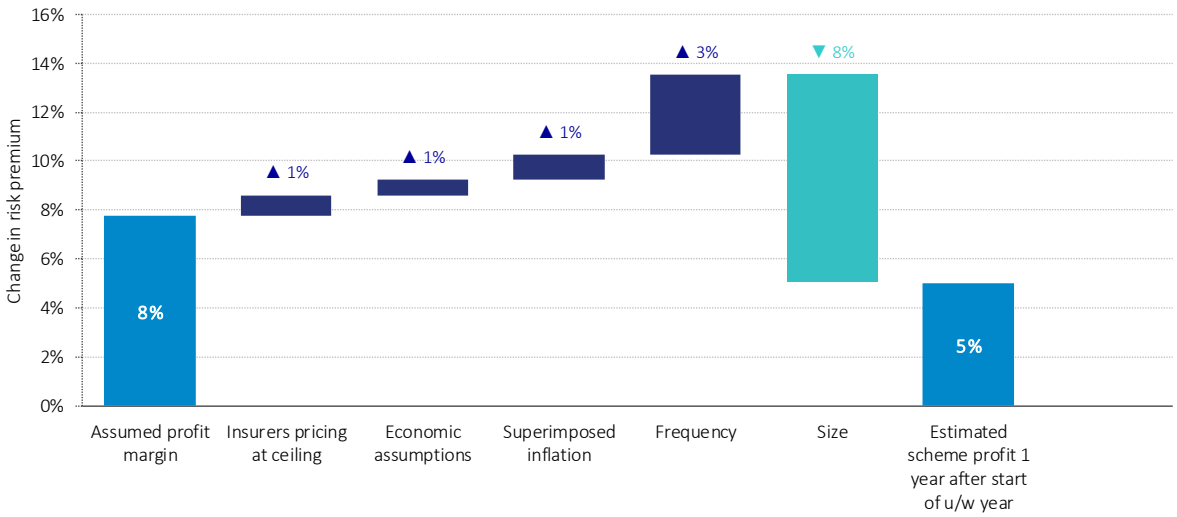
Period	Previous Report (1% SI)	Changes due to						Insurer average profit margin (0.5% SI)[1]
		Claim frequency deviation	Future wage inflation	SI during the year and future SI	Average claim size deviation	Claims Mix Model	Psycho-logical claims impact	
2014	**41%**	0%	0%	0%	-2%	0%	0%	**40%**
2015	**36%**	0%	0%	0%	-2%	0%	0%	**34%**
2016	**25%**	0%	0%	1%	-1%	0%	0%	**25%**
2017	**17%**	-1%	0%	1%	-1%	2%	-1%	**17%**
2018	**10%**	0%	1%	2%	1%	3%	-3%	**12%**
2014-2018	**26%**	**0%**	**0%**	**1%**	**-1%**	**1%**	**-1%**	**26%**

1. As seen in Section 5.3. May not sum due to rounding

6.3 Sources of Scheme profit for recent underwriting years

Although our estimates of profit for the most recent underwriting years have a wide range of uncertainty in comparison to the target profit margin assumed in pricing, an attribution of changes to source can provide insight into recent pricing decisions and the variation in the components that make up prices over the year. Figure 6.1 show a breakdown of the contributing factors to the profit margin of underwriting year 2019.

Figure 6.1 Components of profit margin for underwriting year 2019



For comparison, we show in Figure 6.2 a breakdown of the contributing factors to the profit margin of underwriting year 2018 estimated at the end of 2018. The estimated profit was 10% as shown in the previous report. We also show the current profit estimate of 12% for underwriting year 2018 to illustrate the extent to which the profit estimate may vary over time. A reconciliation of the changes in our estimated profit figures from those in the previous report is given in Section 6.2.

Figure 6.2 Components of profit margin for underwriting year 2018

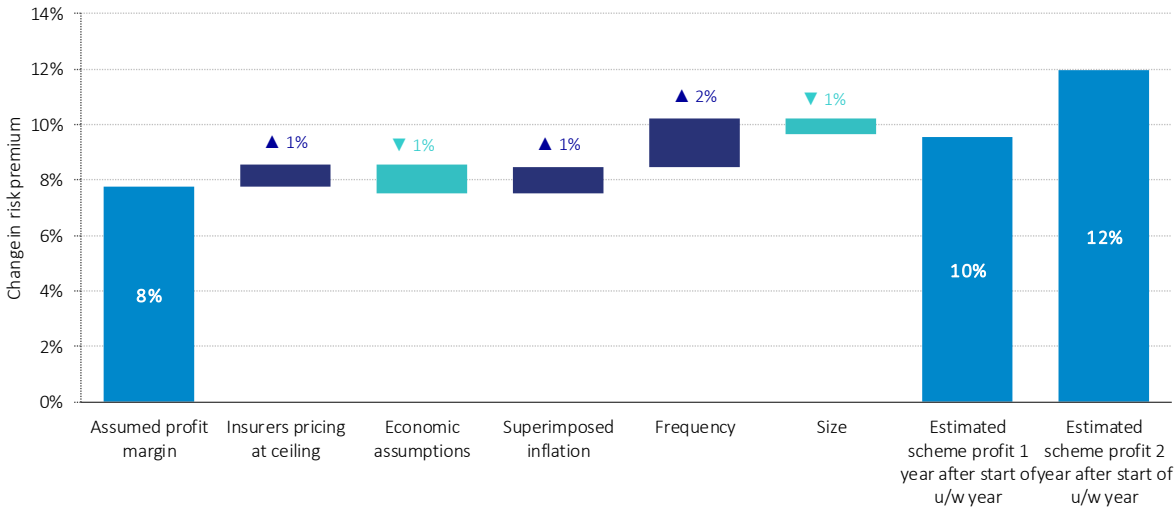


Figure 6.1 and Figure 6.2 show that some components of profit margin are comparable for underwriting years 2018 and 2019. The largest difference comes from average claim size. The estimated average size for underwriting year 2019 is significantly higher than allowed for in pricing, reducing the estimated profit by 8%. Half of this is due to an allowance for potential development of claims with a psychological injury code ('psychological claims'). Without this allowance, our estimate of profit for the 2019 underwriting year would be very close to the target profit margin of 7.75%. The allowance for psychological claims was introduced into our estimates in our latest Annual Advice. It is subject to considerable uncertainty as this feature has not yet emerged in finalised claim sizes. More details are given in section 4.7.

In Table 6.3, we provide detailed commentary on the difference in each of the components of profit margin for the two underwriting years.

Table 6.3 Comparison of contributing factors to profit margin of underwriting year 2018 and 2019 (estimated at the end of the underwriting year)

Source of profit	Underwriting year		Description
	2018	2019	
MAIC assumed profit	8%	8%	The profit allowance set by MAIC has been 7.75% since 1 July 2008.
Insurers pricing at ceiling	+ 1%	+ 1%	Since the Dec-16 underwriting quarter, the ceiling premium has been set close to MAIC's central estimate of premium, reducing the profit generated by insurers pricing at the ceiling.

Economic assumptions	- 1%	+ 1%	For underwriting year 2018, wage inflation (actual and the latest forecast) at the end of the underwriting year was higher than the future flat rates advised at premium setting. This translated into a decrease in profit. Both the latest forecasts and the flat rates were based on forecasts from Deloitte Access Economics (DAE). Over 2019, the advised flat rates at pricing were much higher than the actual AWE rates and the DAE future inflation forecasts leading to an increase in profit estimates. The latest wage inflation forecasts used in this report were adopted from Taylor Fry's market-based model, the details of which can be found in Section 4.2. The market-based model projects a larger drop in future inflation rates compared to the DAE forecasts resulting in a further increase in profit estimates. The overall impact of the falling wage inflation on the profit estimates for the 2019 underwriting year was 4.2%. In addition to falling wage inflation, there has been a significant reduction in yields over the year which leading to a 3.5% reduction in the profit estimate which mostly offset the positive profit impact of wage inflation.
Superimposed inflation	+ 1%	+ 1%	MAIC have revised the superimposed inflation assumption downwards from 1% p.a. to 0.5% p.a. since the Sep-19 underwriting quarter. Although there has been an increase in estimated claim size over the year, we have chosen not to characterise this increase as 'superimposed inflation' on the basis that it is not established as an ongoing phenomenon.
Claim frequency	+ 2%	+ 3%	Over 2018 and 2019, claim frequency has reduced. The claim frequencies used at premium setting did not anticipate this trend and so were higher than actual claim frequencies, as currently measured.

Average claim size	- 1%	- 8%	A higher average claim size than allowed for in pricing is the major cause of the decrease in profit for 2019. The 8% decrease is mainly due to an allowance for potential development of claims with a psychological injury code (4%), an increase in average finalised claim size over the year (2%) and MAIC adopting different scenarios relating to the NSW claims adjustment and gratuitous care coverage than Taylor Fry, leading to an average claim size below our baseline recommendation (2%).
Estimated profit at end of underwriting year	10%	5%	
Average insurer filed profit margin at the start of underwriting	-8%	-4%	The gaps between insurer's view and our estimate of the profit margin are large for both 2018 and 2019 underwriting years.

6.4 Uncertainties in the estimated profit margin

Estimates of profit for CTP insurance are subject to considerable degrees of uncertainty due to the dynamic environment. CTP is a long-tailed class and it takes many years before an underwriting quarter's claims cost can be known with a high degree of certainty. Actual results may be materially different from the results presented in this report, particularly for more recent underwriting quarters, because the present results are largely or wholly based on current model estimates.

Table 6.4 shows our assessment of profit for the last few measurement years.

Table 6.4 Assessments of profit by measurement year

Underwriting year	Measurement year					
	2014 (2.5% p.a. SI)	2015 (2.5% p.a. SI)	2016 (1% p.a. SI)	2017 (1% p.a. SI)	2018 (1% p.a. SI)	2019 (0.5% p.a. SI)
2014	24%	28%	38%	41%	41%	40%
2015		18%	32%	37%	36%	34%
2016			25%	26%	25%	25%
2017				14%	17%	17%
2018					10%	12%
2019						5%

Note: The profit estimates in use the future superimposed inflation scenario consistent with the allowance for superimposed inflation made by MAIC which was current at the time of measurement.

We note that our estimates of the projected ultimate average claim size for future underwriting quarters decreased in real terms up to the measurement year 2018, as evidence of a weakening severity profile and lower than expected finalisation sizes emerged. However, in recent times, our finalisation model average claim size showed a

slight increase over 2018 followed by a 2% increase in 2019. This is a change to the previous trend of increasing profit estimates.

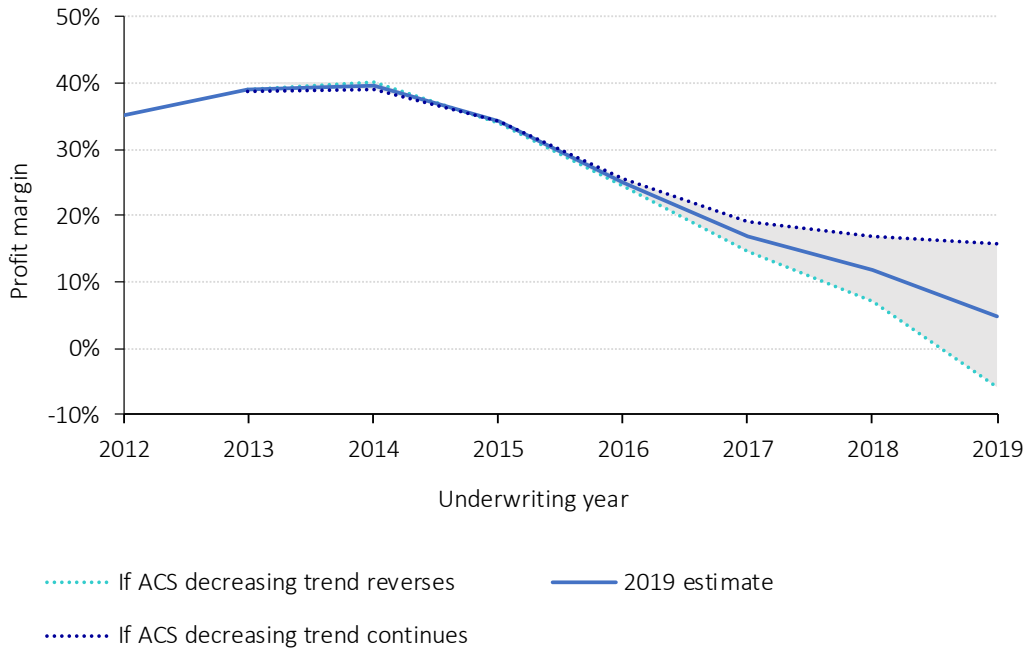
Of particular note in the current profit estimates are our allowances for a continued average claim size reduction as indicated by our Claims mix model, approximately offset by an allowance for an increasing proportion of claims with a psychological injury code. These allowances are described in Section 4.7.

The allowances are particularly uncertain in the sense that they build in features that have not yet emerged in finalised claim sizes. They appear to be supported by the current case estimates of insurers but case estimates can change materially (and have recently done so) until claims are finalised.

Focusing on the allowance for claims with a psychological injury code, to the extent that the increase in these claims represents the possibility of similar claims settling for more than they would have in previous years, there must be a possibility that insurers are able to bring any cost increases under control. There is also the possibility that the increased costs are higher than the allowance we have made. We have tried to adopt a central estimate but the range of uncertainty is wide and depends, in part, on the management actions of insurers.

We illustrate in 4 the degree of uncertainty in the estimated profit margin. The upper end of the grey region in 4 assumes that the decreasing trend in the average claim size as seen up to 31 December 2018 resumes and then continues. The lower end of the grey region assumes that the pattern reverses. The region narrows as one moves to the left because more of the claims cost has been paid and so the uncertainty is less. The grey region should be treated as indicative only and results which lie outside it are certainly possible.

Figure 6.3 Profit margin with uncertainties



7 RELIANCES AND LIMITATIONS

In producing this report, we have relied on data supplied by MAIC on vehicle registrations, underwritten premium, premium filing and claims data without audit or independent verification. The accuracy of the results is dependent on both the accuracy and completeness of the data provided. However, in the course of the analysis, internal checks have been carried out which would be expected to find gross inconsistencies. None have come to light and we have accepted the data at face value.

In carrying out this analysis we have made a number of assumptions. For example, we have assumed that the claims handling expense ratio and the acquisition and reinsurance costs included by MAIC in the ceiling calculation are reasonable proxies for the actual expenses. To the extent that this assumption is false, the profit estimates would change.

Our analysis is heavily dependent on our estimates of total claims cost from each accident quarter. These are derived from the Annual Advice and so this report is subject to the same reliances and limitations as that advice.

Due to limitations on data availability, a number of approximations have been made. Should these turn out to be materially inaccurate then our results would also be affected. In particular, our re-calculation of the ceiling premium based on perfect advanced knowledge of the claim frequency is approximate. We have also extrapolated current experience to estimate claim frequency and sizes for a number of future accident quarters to enable us to produce estimates of hindsight premium for underwriting quarters beginning 1 January 2019 to 31 December 2019. Underwriting quarters with exposure after 31 December 2019 are subject to increased uncertainty since they are based on no actual experience, but rather projections based entirely on model assumptions.

In our judgement we have employed techniques and assumptions that are appropriate, and the conclusions presented herein are reasonable given the information currently available. However, it should be recognised that the actual ultimate profit may deviate, perhaps materially, from our estimates.

Detailed judgements about the methodology, analyses, assumptions and estimated profits should be made only after considering this report in its entirety.

The report has been prepared for the Commission for the specific purpose stated in Section 2.3. No reliance should be placed on this report for any other purpose without confirming with us that such a purpose is appropriate. No other distribution of this report to parties outside of the Commission is permitted without the prior written permission of Taylor Fry. This report is to be considered in its entirety, as parts of the report considered in isolation may be misleading. If any part of this report is to be distributed or provided to other parties, then the entire report including all appendices and not excerpts must be distributed or provided.

Appendix A Economic Assumptions

A.1 Historical Government yields

A.2 Future rates of wage inflation

Appendix A

Appendix A. 1 Commonwealth forward rates

Underwriting	1	2	3	4	5	6	7	8	9	10
Dec-10	4.97%	5.36%	5.58%	5.73%	5.80%	5.81%	5.81%	5.81%	5.81%	5.81%
Mar-11	4.85%	5.09%	5.35%	5.57%	5.74%	5.86%	5.93%	5.95%	5.95%	5.95%
Jun-11	4.80%	4.91%	5.06%	5.27%	5.53%	5.79%	5.83%	5.83%	5.83%	5.83%
Sep-11	3.80%	3.50%	3.72%	4.02%	4.31%	4.56%	4.76%	4.93%	5.05%	5.13%
Dec-11	3.33%	3.10%	3.21%	3.38%	3.60%	3.89%	4.20%	4.46%	4.67%	4.83%
Mar-12	3.54%	3.54%	3.63%	3.75%	3.92%	4.12%	4.37%	4.66%	5.00%	5.32%
Jun-12	2.60%	2.36%	2.47%	2.65%	2.88%	3.16%	3.49%	3.78%	4.01%	4.19%
Sep-12	2.56%	2.46%	2.53%	2.63%	2.77%	2.94%	3.15%	3.39%	3.67%	3.98%
Dec-12	2.66%	2.63%	2.76%	2.94%	3.19%	3.45%	3.70%	3.93%	4.14%	4.34%
Mar-13	2.83%	2.87%	2.99%	3.16%	3.39%	3.64%	3.87%	4.09%	4.29%	4.48%
Jun-13	2.48%	2.71%	3.17%	3.58%	3.95%	4.27%	4.55%	4.77%	4.95%	5.08%
Sep-13	2.42%	2.75%	3.25%	3.70%	4.09%	4.42%	4.70%	4.92%	5.07%	5.17%
Dec-13	2.45%	2.96%	3.53%	4.03%	4.48%	4.85%	5.16%	5.40%	5.57%	5.67%
Mar-14	2.61%	3.08%	3.53%	3.93%	4.29%	4.60%	4.87%	5.09%	5.27%	5.40%
Jun-14	2.46%	2.68%	3.03%	3.36%	3.66%	3.93%	4.16%	4.36%	4.53%	4.67%
Sep-14	2.57%	2.71%	2.99%	3.29%	3.57%	3.82%	4.04%	4.24%	4.42%	4.56%
Dec-14	2.19%	2.13%	2.24%	2.41%	2.64%	2.92%	3.19%	3.43%	3.62%	3.79%
Mar-15	1.71%	1.74%	1.84%	1.99%	2.19%	2.43%	2.71%	2.95%	3.14%	3.27%
Jun-15	1.94%	2.03%	2.26%	2.60%	3.03%	3.41%	3.73%	3.99%	4.18%	4.30%
Sep-15	1.87%	1.94%	2.10%	2.35%	2.67%	3.01%	3.29%	3.53%	3.73%	3.87%
Dec-15	1.98%	2.02%	2.19%	2.46%	2.81%	3.19%	3.50%	3.75%	3.94%	4.06%
Mar-16	1.91%	1.92%	2.04%	2.21%	2.43%	2.64%	2.85%	3.03%	3.21%	3.37%
Jun-16	1.58%	1.53%	1.61%	1.74%	1.90%	2.10%	2.29%	2.47%	2.64%	2.79%
Sep-16	1.56%	1.52%	1.58%	1.69%	1.82%	1.99%	2.19%	2.38%	2.55%	2.71%
Dec-16	1.74%	2.00%	2.29%	2.56%	2.82%	3.06%	3.29%	3.50%	3.69%	3.87%
Mar-17	1.63%	1.94%	2.23%	2.51%	2.76%	3.00%	3.21%	3.41%	3.59%	3.75%
Jun-17	1.68%	1.95%	2.20%	2.44%	2.66%	2.87%	3.07%	3.25%	3.41%	3.56%
Sep-17	1.83%	2.14%	2.41%	2.67%	2.90%	3.11%	3.31%	3.49%	3.64%	3.78%
Dec-17	1.93%	2.14%	2.34%	2.53%	2.70%	2.87%	3.02%	3.16%	3.29%	3.41%
Mar-18	2.06%	2.35%	2.58%	2.75%	2.89%	2.99%	3.08%	3.16%	3.23%	3.31%
Jun-18	1.96%	2.08%	2.23%	2.39%	2.57%	2.74%	2.90%	3.04%	3.16%	3.25%
Sep-18	1.97%	2.15%	2.31%	2.47%	2.61%	2.74%	2.87%	2.98%	3.08%	3.17%
Dec-18	1.68%	1.68%	1.76%	1.90%	2.09%	2.30%	2.51%	2.70%	2.86%	2.97%
Mar-19	1.06%	1.03%	1.15%	1.34%	1.52%	1.68%	1.82%	1.94%	2.04%	2.13%
Jun-19	0.74%	0.61%	0.66%	0.79%	0.93%	1.05%	1.16%	1.26%	1.34%	1.42%
Sep-19	0.78%	0.74%	0.86%	1.07%	1.29%	1.44%	1.54%	1.62%	1.70%	1.78%
Dec-19	0.78%	0.41%	0.49%	0.65%	0.83%	0.97%	1.07%	1.16%	1.25%	1.35%

Notes; These are 1-year forward rates extracted from yields on Commonwealth bonds quoted at the end of the underwriting quarter

Appendix A

Appendix A. 2 Future rates of wage inflation

Quarter	QLD AWE	Inflation rate p.a.
Dec-19	1,228.07	
Mar-20	1,235.17	2.27%
Jun-20	1,241.92	2.12%
Sep-20	1,248.22	1.97%
Dec-20	1,254.09	1.85%
Mar-21	1,259.72	1.80%
Jun-21	1,265.32	1.81%
Sep-21	1,271.08	1.87%
Dec-21	1,277.07	1.94%
Mar-22	1,283.36	2.02%
Jun-22	1,289.94	2.08%
Sep-22	1,296.61	2.09%
Dec-22	1,303.34	2.09%
Mar-23	1,310.10	2.09%
Jun-23	1,316.89	2.16%
Sep-23	1,324.20	2.24%
Dec-23	1,331.53	2.23%
Mar-24	1,338.87	2.22%
Jun-24	1,346.21	2.28%
Sep-24	1,354.06	2.35%
Dec-24	1,361.92	2.34%
Mar-25	1,369.78	2.32%
Jun-25	1,377.64	2.31%
Sep-25	1,385.52	2.30%
Dec-25	1,393.41	2.29%
Mar-26	1,401.31	2.28%
Jun-26	1,409.23	2.28%
Sep-26	1,417.17	2.27%
Dec-26	1,425.14	2.27%
Mar-27	1,433.14	2.26%
Jun-27	1,441.18	2.26%
Sep-27	1,449.26	2.26%
Dec-27	1,457.40	2.27%
Mar-28	1,465.61	2.27%
Jun-28	1,473.87	2.03%
Sep-28	1,480.44	1.80%
Dec-28	1,487.08	1.81%
Mar-29	1,493.80	1.82%
Jun-29	1,500.58	1.84%
Sep-29 & later	1,507.45	2.19%

Notes; Queensland forecasts from Taylor Fry inflation model for December 2019
Assumed long term inflation rate is derived by averaging over the preceding 6 years

Appendix B Ultimate Incurred Costs

B.1 Historical finalised uninflated claim payments (gross of ITC/DAM)

B.2 Outstanding claims liability uninflated/undiscounted (gross of ITC/DAM)

Appendix B. 1 Historical finalised uninflated claim payments (gross of ITC/DAM)

	Development ($ millions)																																					
Accident	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	Later
Dec-10	0.1	0.5	1.0	1.4	3.8	9.1	13.6	13.0	25.6	8.8	14.8	9.0	9.2	7.9	3.4	5.3	5.7	2.9	1.0	3.0	1.8	2.1	1.6	0.3	0.8	0.0	0.3	1.8	0.0	0.0	0.2	0.7	0.0	0.2	0.0	0.0	0.0	
Mar-11	0.1	0.9	1.1	1.7	4.2	10.7	14.3	15.6	12.1	10.7	12.9	7.5	8.7	9.3	7.2	3.9	4.8	4.1	5.1	6.6	1.4	0.4	2.7	0.8	1.7	0.7	0.6	0.0	0.2	1.6	0.0	0.3	0.0	0.0	0.0	0.0		
Jun-11	0.1	0.8	1.2	1.4	5.1	12.1	15.5	12.1	15.2	11.6	10.2	11.0	13.1	14.2	8.4	4.3	4.7	8.0	9.7	6.4	2.0	2.9	1.1	1.8	0.6	0.6	0.5	0.2	0.0	0.3	0.2	0.5	0.8	0.2	0.0			
Sep-11	0.1	0.7	1.0	1.9	5.3	12.7	13.3	15.0	15.5	13.4	20.4	11.9	11.3	8.5	9.1	8.2	8.3	4.9	3.2	3.3	0.4	5.1	2.0	1.4	0.0	1.4	0.1	0.5	0.3	1.1	0.1	0.7	1.3	2.2				
Dec-11	0.1	0.6	0.8	2.4	4.7	7.4	14.7	9.0	13.1	9.2	10.3	12.8	9.8	7.6	8.9	6.5	5.3	2.9	1.9	3.9	4.6	0.8	1.4	1.0	3.7	2.6	0.0	0.2	0.3	0.0	-0.1	0.0	0.0					
Mar-12	0.1	0.6	1.3	2.5	3.9	12.0	9.7	13.0	10.4	11.7	10.0	11.4	10.2	17.4	8.3	14.4	4.6	7.0	2.1	3.9	1.9	4.6	3.8	1.2	1.2	1.2	1.4	0.7	1.4	0.4	0.1	5.0						
Jun-12	0.1	0.9	1.2	2.4	8.0	10.5	15.1	11.5	12.2	12.9	9.9	10.7	15.0	14.8	7.3	8.2	7.1	8.0	3.4	3.2	1.3	0.5	1.9	0.3	1.8	1.5	0.3	0.5	0.4	0.0	0.0							
Sep-12	0.1	1.1	1.5	3.4	5.2	11.9	12.6	14.6	12.6	11.5	10.4	22.0	16.1	9.0	13.2	6.5	5.3	8.5	3.9	1.1	1.2	9.7	0.1	0.7	16.4	1.9	0.7	0.1	1.7	0.0								
Dec-12	0.1	0.7	1.4	2.5	5.7	9.3	13.4	10.8	12.9	12.5	9.0	16.0	13.6	8.7	16.5	5.8	8.1	6.5	2.6	1.7	2.8	3.2	0.3	0.7	5.4	5.6	2.1	0.5	0.0									
Mar-13	0.1	0.8	1.4	2.0	4.3	9.9	11.4	11.9	11.3	14.0	8.6	13.2	10.5	12.6	8.9	8.7	3.0	3.1	4.0	1.4	2.3	2.5	2.6	0.9	0.4	1.0	1.2	0.1										
Jun-13	0.1	0.9	1.2	1.8	7.3	11.4	15.2	13.0	14.9	12.9	8.4	7.9	9.0	8.6	7.5	2.5	5.1	4.1	2.0	3.6	0.9	0.8	4.2	1.0	0.2	0.2	0.1											
Sep-13	0.1	0.7	1.2	3.6	6.0	11.6	14.4	17.0	11.4	10.4	12.7	18.9	13.8	11.2	9.5	7.4	1.4	4.7	0.7	4.2	1.4	1.4	3.5	0.3	6.0	2.1												
Dec-13	0.1	0.9	1.2	2.1	5.5	9.6	14.7	13.4	14.1	8.1	10.6	13.9	9.1	8.8	12.2	7.1	4.5	1.3	5.4	3.2	0.5	2.4	0.1	1.2	0.7													
Mar-14	0.1	0.8	1.5	2.0	4.2	11.1	13.1	13.1	12.9	13.0	11.7	7.5	7.4	7.0	6.1	10.4	2.5	2.2	3.4	1.9	2.1	17.1	1.3	0.2														
Jun-14	0.2	1.2	1.6	2.8	7.9	14.5	19.8	11.3	16.5	17.2	11.0	9.3	9.6	9.9	8.2	6.1	5.1	8.2	17.5	1.1	1.8	1.7	14.7															
Sep-14	0.1	0.9	1.4	4.3	6.6	13.2	14.1	15.0	12.0	12.4	11.0	8.9	6.1	6.3	4.2	7.0	6.6	1.5	2.5	5.1	1.0	0.2																
Dec-14	0.2	0.8	2.5	2.3	8.7	9.7	16.3	13.4	13.9	9.2	7.8	8.5	10.2	8.3	12.1	4.0	6.7	1.0	5.5	4.8	0.5																	
Mar-15	0.1	0.9	1.4	4.6	7.3	16.0	12.7	19.0	10.1	14.8	9.3	8.1	8.0	7.2	4.9	4.4	5.7	5.0	4.0	13.6																		
Jun-15	0.1	1.3	2.2	3.6	8.4	13.8	14.0	17.1	14.0	10.5	19.3	10.9	11.1	5.1	6.5	9.7	6.9	3.1	3.5																			
Sep-15	0.2	1.6	1.8	5.6	7.5	14.1	11.9	16.2	9.9	16.9	20.3	9.4	6.7	10.7	6.0	6.5	6.4	1.3																				
Dec-15	0.2	1.1	1.9	3.3	6.8	9.3	18.1	12.6	13.2	9.2	11.7	11.7	10.2	5.9	4.3	6.5	2.7																					
Mar-16	0.2	1.2	2.0	4.1	6.5	13.4	16.3	15.2	21.3	12.6	9.8	12.6	8.5	4.7	6.9	2.0																						
Jun-16	0.2	1.3	2.2	2.8	8.4	13.8	15.3	13.7	17.3	12.6	12.7	11.4	7.4	5.0	7.5																							
Sep-16	0.2	0.9	1.3	4.3	8.6	16.2	14.8	15.5	17.7	11.6	7.4	10.4	9.7	5.6																								
Dec-16	0.2	1.1	1.6	3.0	8.2	14.2	24.1	17.6	13.4	16.0	12.1	8.9	8.4																									
Mar-17	0.2	1.0	1.7	3.0	7.3	17.1	15.6	14.0	12.3	17.1	11.1	11.9																										
Jun-17	0.1	1.0	1.8	2.1	8.9	14.5	17.7	15.2	17.6	10.7	10.4																											
Sep-17	0.1	0.7	1.2	2.8	6.9	14.7	13.1	19.0	13.0	12.2																												
Dec-17	0.1	0.5	1.2	2.4	6.9	16.5	15.5	14.9	9.8																													
Mar-18	0.1	0.7	1.1	2.5	4.7	13.9	14.1	15.3																														
Jun-18	0.1	0.6	1.1	2.0	7.1	12.3	11.3																															
Sep-18	0.1	0.6	1.2	2.8	7.8	9.3																																
Dec-18	0.0	0.3	0.9	2.1	4.3																																	
Mar-19	0.1	0.4	0.9	1.3																																		
Jun-19	0.0	0.5	0.8																																			
Sep-19	0.1	0.3																																				
Dec-19	0.1																																					

Notes; Sourced from the PIR system as at 31 December 2019 (as supplied by MAIC)

Appendix B. 2 Outstanding claims liability uninflated/undiscounted (gross of ITC/DAM)

	Development ($ millions)																																				
Accident	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	Later
Dec-10																																						4.6
Mar-11																																					0.5	6.6
Jun-11																																				0.8	0.8	8.8
Sep-11																																			0.5	0.5	0.4	6.5
Dec-11																																		0.9	0.8	0.7	0.7	7.0
Mar-12																																	0.8	0.7	0.6	0.6	0.5	4.5
Jun-12																																0.9	0.8	0.7	0.6	0.6	0.5	5.1
Sep-12																															0.7	0.7	0.6	0.6	0.5	0.5	0.5	6.4
Dec-12																														1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	6.7
Mar-13																													0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	8.8
Jun-13																												1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	5.8
Sep-13																											2.0	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	12.0
Dec-13																										2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.9	11.9
Mar-14																									1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	7.7
Jun-14																								2.3	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.8	9.0
Sep-14																							2.0	1.8	1.6	1.5	1.3	1.2	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.7	0.6	8.1
Dec-14																						1.9	1.6	1.4	1.3	1.2	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	4.5
Mar-15																					2.5	2.2	1.8	1.6	1.5	1.4	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.5	5.9
Jun-15																				3.9	3.3	2.8	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.8	0.8	0.7	9.2
Sep-15																			5.0	4.4	3.8	3.2	2.3	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9	13.5
Dec-15																		6.1	5.3	4.6	4.0	3.5	2.9	2.6	2.3	2.2	2.0	1.8	1.7	1.6	1.5	1.3	1.2	1.2	1.0	1.0	0.9	10.0
Mar-16																	5.1	4.4	3.7	3.1	2.6	2.3	1.8	1.7	1.5	1.4	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.5	5.9
Jun-16																8.3	7.4	6.5	5.6	4.8	4.2	3.6	3.1	2.8	2.5	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.2	1.1	1.0	0.9	0.8	8.3
Sep-16															9.6	8.0	6.9	5.9	5.0	4.3	3.7	3.2	2.6	2.4	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	8.7
Dec-16														12.0	10.5	8.7	7.5	6.4	5.4	4.7	4.0	3.4	2.8	2.5	2.3	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	9.7
Mar-17													12.0	10.3	9.0	7.5	6.4	5.5	4.6	4.0	3.3	2.9	2.3	2.1	1.9	1.7	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.8	0.7	0.7	8.1
Jun-17												12.4	11.5	10.0	8.8	7.4	6.3	5.4	4.6	3.9	3.3	2.9	2.4	2.2	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	7.8
Sep-17											14.6	13.8	12.7	11.1	9.8	8.2	7.0	6.0	5.2	4.4	3.8	3.3	2.7	2.5	2.2	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	9.4
Dec-17										13.6	12.6	11.9	10.9	9.5	8.3	7.0	5.9	5.0	4.2	3.6	3.0	2.6	2.1	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.7	0.6	6.8
Mar-18									15.9	14.9	13.7	12.9	11.9	10.3	9.1	7.6	6.5	5.6	4.8	4.1	3.4	2.9	2.4	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	8.8
Jun-18								19.3	18.0	17.3	16.1	15.1	13.9	12.1	10.6	8.9	7.7	6.6	5.7	4.9	4.2	3.7	3.0	2.8	2.5	2.3	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	11.7
Sep-18							16.8	17.4	15.8	14.9	13.7	12.9	11.9	10.4	9.1	7.6	6.6	5.6	4.8	4.1	3.5	3.0	2.5	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.2	1.1	1.0	0.9	0.8	0.8	9.0
Dec-18						12.7	15.9	16.7	15.8	14.8	13.7	12.9	11.9	10.2	8.9	7.4	6.4	5.4	4.6	3.9	3.2	2.8	2.3	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	0.6	7.3
Mar-19					6.5	12.8	15.7	16.5	15.4	14.5	13.4	12.6	11.6	10.1	8.9	7.4	6.4	5.5	4.7	4.0	3.4	2.9	2.4	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	8.4
Jun-19				2.3	6.7	13.6	16.7	17.3	16.0	15.0	13.8	12.9	11.8	10.2	8.9	7.4	6.3	5.4	4.6	3.9	3.3	2.8	2.3	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	8.3
Sep-19			1.3	2.5	6.9	13.8	16.9	17.6	16.3	15.2	14.0	13.2	12.1	10.5	9.1	7.6	6.6	5.6	4.8	4.1	3.4	2.9	2.4	2.2	2.0	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.7	8.6
Dec-19	0.3	0.9	2.2	6.2	12.5	15.4	16.0	15.0	14.1	13.0	12.3	11.4	9.8	8.6	7.2	6.2	5.3	4.6	3.9	3.3	2.8	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	8.5

Notes; Sourced from the Annual Advice

Appendix C Modelled Scheme relativities

C.1 Modelled Scheme frequency relativities by accident period

C.2 Modelled Scheme size relativities by accident period

Appendix C

Appendix C. 1 Modelled Scheme frequency relativities by accident period

	Frequency relativities by accident year										Exposures by accident year									
Class	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2,415,420	2,462,402	2,526,643	2,587,192	2,630,759	2,682,781	2,738,530	2,785,016	2,821,602	2,855,719
2	31%	31%	31%	31%	31%	31%	31%	31%	31%	31%	11,671	12,326	13,050	13,738	14,417	15,109	15,673	16,379	16,866	17,377
3	2297%	2297%	2297%	1712%	1712%	1712%	1712%	1712%	1712%	1712%	2,723	2,707	2,701	2,698	2,712	2,699	2,638	2,649	2,608	2,483
4	160%	160%	160%	160%	160%	160%	160%	160%	160%	160%	38,124	40,692	43,865	43,820	41,928	39,883	41,894	43,780	50,287	50,352
5	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	17,377	19,074	20,741	22,527	24,088	25,696	27,343	29,193	31,571	34,400
6	98%	99%	100%	101%	102%	103%	104%	105%	105%	105%	674,333	697,893	729,000	760,895	786,403	811,452	837,849	869,093	900,592	928,602
7	313%	313%	313%	313%	313%	313%	313%	313%	313%	313%	70,267	71,546	74,031	75,806	75,260	73,939	73,782	75,742	78,216	79,608
8	138%	138%	138%	138%	138%	138%	138%	138%	138%	138%	5,538	5,491	5,469	5,537	5,592	5,729	5,781	5,830	5,842	5,886
9	160%	160%	160%	160%	160%	160%	160%	160%	160%	160%	3,703	3,694	3,715	3,712	3,686	3,722	3,731	3,846	3,909	3,953
10A	598%	598%	598%	598%	598%	598%	598%	598%	598%	598%	2,644	2,674	2,735	2,696	2,683	2,648	2,598	2,646	2,713	2,773
10B	2708%	2475%	2261%	2066%	1888%	1888%	1888%	1888%	1888%	1888%	1,966	2,144	2,203	2,163	2,152	2,147	2,170	2,218	2,188	2,235
11	467%	467%	467%	467%	467%	467%	467%	467%	467%	467%	5,722	5,971	6,509	6,768	6,805	6,617	6,470	6,647	6,777	6,554
12	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	54,520	56,959	59,333	62,066	64,824	70,808	78,389	83,129	87,194	90,928
13	31%	30%	29%	27%	26%	25%	24%	23%	23%	23%	105,652	110,511	116,961	122,786	126,235	125,915	125,972	125,055	123,970	122,224
14	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	24,728	24,862	25,014	25,075	24,901	24,896	24,996	25,136	25,194	25,187
15	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	8,581	8,567	8,585	7,924	7,652	7,262	6,869	6,648	6,657	6,641
16	275%	275%	275%	275%	275%	275%	275%	275%	275%	275%	1,014	1,033	1,062	1,037	1,068	1,087	1,063	1,137	1,134	1,149
17	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	39,231	38,669	38,146	38,240	38,074	38,197	38,715	38,795	38,542	38,427
18																				
19	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	35,094	37,575	40,429	43,039	43,424	44,128	44,967	46,420	48,160	48,701
20	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	10,196	10,761	11,226	11,685	11,777	11,802	11,731	11,856	12,064	12,187
21	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7,710	8,383	9,061	9,394	9,191	8,873	8,740	8,687	8,670	8,714
22																				
23	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	5,245	5,367	5,568	5,783	5,805	5,998	6,029	6,043	6,146	6,163
24	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	1,998	2,145	2,343	2,651	2,807	2,843	3,392	3,507	3,909	4,371
25																				
26									526%	526%								5,890	15,732	18,144

Notes; Sourced from the Annual Advice

Appendix C. 2 Modelled Scheme size relativities by accident period

	Size relativities by accident year										Number of claims by accident year									
Class	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	4,142	4,439	4,462	4,427	4,473	4,601	4,937	5,521	5,337	4,778
2	101%	101%	101%	101%	101%	101%	101%	101%	101%	101%	6	4	10	10	6	9	6	11	7	4
3	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	157	120	112	79	78	106	73	85	86	68
4	118%	118%	118%	118%	118%	118%	118%	118%	118%	118%	123	136	134	86	143	111	135	139	132	102
5	137%	137%	137%	137%	137%	137%	137%	137%	137%	137%	1	2	2	2	2	0	0	0	4	2
6	117%	117%	117%	117%	117%	117%	117%	117%	117%	117%	1,062	1,244	1,234	1,234	1,299	1,409	1,419	1,809	1,778	1,620
7	134%	134%	134%	134%	134%	134%	134%	134%	134%	134%	382	422	381	437	396	397	387	476	471	408
8	154%	154%	154%	154%	154%	154%	154%	154%	154%	154%	12	14	6	21	16	21	18	14	17	8
9	108%	108%	108%	108%	108%	108%	108%	108%	108%	108%	7	15	12	10	7	20	8	14	12	8
10A	114%	114%	114%	114%	114%	114%	114%	114%	114%	114%	38	19	40	43	16	40	21	24	24	25
10B	69%	69%	69%	69%	69%	69%	69%	69%	69%	69%	77	91	90	89	67	72	53	95	88	63
11	123%	123%	123%	123%	123%	123%	123%	123%	123%	123%	39	61	56	70	56	47	57	65	42	39
12	167%	167%	167%	167%	167%	167%	167%	167%	167%	167%	11	17	13	13	14	8	26	19	21	19
13	181%	181%	181%	181%	181%	181%	181%	181%	181%	181%	73	66	58	45	65	49	48	46	62	37
14	123%	123%	123%	123%	123%	123%	123%	123%	123%	123%	1	6	1	0	2	3	2	0	1	3
15	176%	176%	176%	176%	176%	176%	176%	176%	176%	176%	16	8	21	16	14	8	11	19	7	6
16	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	6	5	7	3	5	3	7	6	7	3
17	199%	199%	199%	199%	199%	199%	199%	199%	199%	199%	14	19	17	27	18	25	19	14	19	30
18																				
19	227%	227%	227%	227%	227%	227%	227%	227%	227%	227%	10	7	12	8	2	11	18	8	6	3
20	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	2	1	1	0	0	3	0	0	0	1
21	244%	244%	244%	244%	244%	244%	244%	244%	244%	244%	3	1	2	2	2	1	0	0	0	0
22											0	1	0	0	0	2	1	0	0	0
23	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%	9	2	4	1	1	3	0	1	2	6
24	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	1	0	2	0	0	0	0	2	0	1
25																				
26									62%	62%									48	80

Notes; Sourced from the Annual Advice
Does not include adjustment for NIISQ

Appendix D MAIC's Pricing Assumptions

D.1 MAIC's pricing assumptions used to set floor and ceiling premiums

Appendix D

Appendix D. 1 MAIC's pricing assumptions used to set floor and ceiling premiums

Underwriting	Scheme average premium ($, excluding GST, levies) Floor	Ceiling	Claims handling expenses	Acquisition Costs ($)	Reinsurance Cost ($)	ANTS Impact	Profit margin	Insurer average filed gross premium ($)
Dec-10	237.65	274.55	5.50%	4.99	5.48	-9.1%	7.8%	273.80
Mar-11	234.68	274.51	5.50%	4.99	5.48	-9.1%	7.8%	273.76
Jun-11	234.80	274.62	5.50%	4.99	5.48	-9.1%	7.8%	273.12
Sep-11	234.08	275.14	5.50%	4.99	5.51	-9.1%	7.8%	273.34
Dec-11	234.02	275.08	5.50%	4.99	5.51	-9.1%	7.8%	273.27
Mar-12	234.15	275.20	5.50%	4.99	5.51	-9.1%	7.8%	274.10
Jun-12	238.86	279.90	5.50%	4.99	5.51	-9.1%	7.8%	279.28
Sep-12	243.02	280.15	5.50%	4.99	5.52	-9.1%	7.8%	280.12
Dec-12	248.47	285.62	5.50%	4.99	5.52	-9.1%	7.8%	285.60
Mar-13	253.20	290.33	5.50%	4.99	5.52	-9.1%	7.8%	290.31
Jun-13	261.08	293.15	5.50%	4.99	5.51	-9.1%	7.8%	293.13
Sep-13	253.88	285.67	5.50%	6.99	4.38	-9.1%	7.8%	285.67
Dec-13	260.80	292.59	5.50%	6.99	4.37	-9.1%	7.8%	292.59
Mar-14	255.01	292.74	5.50%	6.99	4.37	-9.1%	7.8%	292.74
Jun-14	256.52	294.24	5.50%	6.99	4.37	-9.1%	7.8%	293.90
Sep-14	256.59	293.22	5.50%	6.99	4.35	-9.1%	7.8%	292.88
Dec-14	256.07	292.69	5.50%	6.99	4.34	-9.1%	7.8%	292.23
Mar-15	253.86	292.27	5.50%	6.98	4.34	-9.1%	7.8%	291.81
Jun-15	253.59	291.98	5.50%	6.98	4.34	-9.1%	7.8%	287.80
Sep-15	246.81	285.22	5.50%	7.98	4.34	-9.1%	7.8%	283.40
Dec-15	247.83	285.26	5.50%	7.98	4.34	-9.1%	7.8%	284.88
Mar-16	244.50	284.78	5.50%	7.98	4.33	-9.1%	7.8%	284.39
Jun-16	251.33	291.60	5.50%	7.98	4.33	-9.1%	7.8%	291.22
Sep-16	244.05	284.28	5.50%	7.98	4.33	-9.1%	7.8%	284.28
Dec-16	228.07	252.42	5.74%	7.98	1.71	-9.1%	7.8%	252.42
Mar-17	227.51	251.82	5.74%	7.98	1.71	-9.1%	7.8%	250.93
Jun-17	213.30	236.68	5.74%	7.98	1.71	-9.1%	7.8%	236.68
Sep-17	203.95	222.18	5.74%	7.98	1.71	-9.1%	7.8%	222.18
Dec-17	204.72	223.01	5.74%	7.98	1.71	-9.1%	7.8%	223.01
Mar-18	207.65	225.93	6.25%	7.98	1.71	-9.1%	7.8%	225.93
Jun-18	207.32	225.57	6.25%	7.98	1.71	-9.1%	7.8%	225.57
Sep-18	200.45	218.71	6.25%	7.98	1.71	-9.1%	7.8%	218.71
Dec-18	196.22	213.56	6.25%	7.98	1.71	-9.1%	7.8%	213.56
Mar-19	191.25	208.58	6.25%	7.98	1.71	-9.1%	7.8%	208.58
Jun-19	190.89	208.16	6.25%	7.98	1.71	-9.1%	7.8%	208.16
Sep-19	200.56	219.01	6.25%	9.97	1.73	-9.1%	7.8%	219.01
Dec-19	209.32	227.86	6.25%	9.97	1.74	-9.1%	7.8%	227.86

Notes; Supplied by MAIC

Appendix E Comparison of Estimates

E.1 Hindsight estimation of all class risk premiums based on data to 31 December 2019

E.2 Hindsight estimation of all class profitability based on data to 31 December 2019

Appendix E

Appendix E. 1 Hindsight estimation of all-class premiums based on data to 31 December 2019

				0.5% p.a. superimposed inflation				
Underwriting	Scheme Frequency	Scheme Average size ($)	Profit Margin	Net RP ($)	CHE ($)	Acquisition Costs ($)	Reinsurance Costs ($)	Hindsight Premium ($)
Dec-10	0.193%	83,449	7.75%	146.51	8.86	4.99	5.48	178.71
Mar-11	0.190%	86,093	7.75%	148.94	9.01	4.99	5.48	181.48
Jun-11	0.188%	88,136	7.75%	150.75	9.12	4.99	5.48	183.55
Sep-11	0.186%	92,820	7.75%	157.30	9.52	4.99	5.51	191.07
Dec-11	0.186%	97,294	7.75%	164.73	9.97	4.99	5.51	199.55
Mar-12	0.185%	97,034	7.75%	163.43	9.89	4.99	5.51	198.07
Jun-12	0.182%	99,342	7.75%	164.32	9.94	4.99	5.51	199.08
Sep-12	0.180%	97,823	7.75%	159.67	9.66	4.99	5.52	193.78
Dec-12	0.177%	96,706	7.75%	155.95	9.43	4.99	5.52	189.53
Mar-13	0.175%	96,205	7.75%	153.26	9.27	4.99	5.52	186.46
Jun-13	0.175%	100,054	7.75%	159.29	9.64	4.99	5.51	193.34
Sep-13	0.175%	100,965	7.75%	160.41	9.70	6.99	4.38	195.55
Dec-13	0.174%	96,764	7.75%	153.24	9.27	6.99	4.37	187.36
Mar-14	0.176%	96,621	7.75%	154.70	9.36	6.99	4.37	189.02
Jun-14	0.179%	94,399	7.75%	153.52	9.29	6.99	4.37	187.66
Sep-14	0.180%	93,603	7.75%	153.58	9.29	6.99	4.35	187.71
Dec-14	0.181%	98,673	7.75%	162.56	9.83	6.99	4.34	197.96
Mar-15	0.182%	100,582	7.75%	166.51	10.07	6.98	4.34	202.47
Jun-15	0.183%	97,957	7.75%	163.22	9.87	6.98	4.34	198.71
Sep-15	0.186%	97,960	7.75%	165.72	10.03	7.98	4.34	202.65
Dec-15	0.194%	97,090	7.75%	171.65	10.38	7.98	4.34	209.41
Mar-16	0.203%	98,992	7.75%	182.67	11.05	7.98	4.33	222.00
Jun-16	0.207%	101,773	7.75%	191.35	11.58	7.98	4.33	231.92
Sep-16	0.210%	102,050	7.75%	194.38	11.76	7.98	4.33	235.38
Dec-16	0.206%	92,477	7.75%	173.35	10.95	7.98	1.71	209.02
Mar-17	0.202%	92,690	7.75%	169.85	10.72	7.98	1.71	205.01
Jun-17	0.203%	93,689	7.75%	173.08	10.93	7.98	1.71	208.71
Sep-17	0.204%	94,001	7.75%	174.30	11.01	7.98	1.71	210.10
Dec-17	0.204%	94,122	7.75%	174.13	10.99	7.98	1.71	209.91
Mar-18	0.203%	94,243	7.75%	173.96	11.96	7.98	1.71	210.77
Jun-18	0.199%	95,690	7.75%	173.27	11.91	7.98	1.71	209.97
Sep-18	0.196%	96,069	7.75%	170.79	11.74	7.98	1.71	207.12
Dec-18	0.194%	98,175	7.75%	173.32	11.92	7.98	1.71	210.03
Mar-19	0.193%	101,237	7.75%	177.70	12.22	7.98	1.71	215.07
Jun-19	0.192%	104,618	7.75%	183.06	12.59	7.98	1.71	221.24
Sep-19	0.191%	105,175	7.75%	182.95	12.58	9.97	1.73	223.29
Dec-19	0.189%	106,560	7.75%	183.20	12.60	9.97	1.74	223.58

Notes; Net risk premium exlcludes GST
Hindsight premium includes profit loading

Appendix E

Appendix E. 2 Hindsight estimation of all-class profitability based on data to 31 December 2019

	0.5% p.a. superimposed inflation							
Underwriting	Floor	Ceiling	MAIC Centeral Estimate	Average	Floor ($)	Ceiling ($)	MAIC Centeral Estimate	Average ($)
Dec-10	30%	40%	35%	39%	71.79	108.69	89.74	107.95
Mar-11	28%	39%	33%	38%	66.26	106.08	84.20	105.33
Jun-11	27%	38%	33%	38%	64.45	104.27	82.37	102.77
Sep-11	24%	36%	30%	35%	56.75	97.82	74.76	96.01
Dec-11	21%	33%	27%	32%	48.82	89.88	66.82	88.07
Mar-12	21%	33%	27%	33%	50.33	91.38	69.29	90.28
Jun-12	23%	34%	28%	34%	54.09	95.14	73.06	94.52
Sep-12	26%	36%	31%	36%	63.18	100.31	82.25	100.28
Dec-12	29%	38%	34%	38%	72.57	109.72	91.64	109.70
Mar-13	32%	40%	36%	40%	80.16	117.28	99.23	117.26
Jun-13	31%	39%	36%	39%	81.64	113.71	100.68	113.69
Sep-13	29%	36%	33%	36%	72.40	104.18	91.29	104.18
Dec-13	33%	41%	38%	41%	86.92	118.71	105.77	118.71
Mar-14	31%	40%	36%	40%	79.58	117.32	98.43	117.32
Jun-14	32%	41%	37%	41%	82.35	120.07	101.21	119.73
Sep-14	32%	41%	37%	41%	82.38	119.01	100.98	118.67
Dec-14	28%	37%	33%	37%	72.35	108.96	90.94	108.51
Mar-15	26%	36%	31%	36%	65.94	104.36	84.65	103.90
Jun-15	27%	37%	32%	36%	69.17	107.57	87.87	103.39
Sep-15	24%	34%	29%	34%	58.73	97.15	77.48	95.33
Dec-15	22%	32%	27%	32%	53.48	90.91	72.19	90.53
Mar-16	16%	28%	22%	28%	38.47	78.75	57.17	78.36
Jun-16	14%	26%	20%	26%	36.09	76.36	54.79	75.98
Sep-16	10%	23%	17%	23%	25.60	65.83	44.28	65.83
Dec-16	15%	23%	21%	23%	34.09	58.43	52.58	58.43
Mar-17	16%	24%	23%	24%	37.24	61.55	55.69	60.66
Jun-17	9%	18%	16%	18%	19.61	42.99	37.12	42.99
Sep-17	4%	12%	11%	12%	8.96	27.20	25.18	27.20
Dec-17	5%	13%	12%	13%	9.91	28.19	26.17	28.19
Mar-18	6%	13%	13%	13%	12.04	30.32	28.31	30.32
Jun-18	6%	14%	13%	14%	12.45	30.70	28.91	30.70
Sep-18	4%	12%	11%	12%	8.22	26.48	24.43	26.48
Dec-18	1%	9%	8%	9%	1.30	18.64	16.59	18.64
Mar-19	-4%	4%	3%	4%	- 8.35	8.97	6.92	8.97
Jun-19	-8%	1%	0%	1%	- 14.44	2.83	0.82	2.83
Sep-19	-3%	5%	5%	5%	- 6.67	11.78	9.83	11.78
Dec-19	1%	9%	8%	9%	1.82	20.36	18.38	20.36

Notes; Derived from previous appendices