Motor Accident Insurance Commission

Retrospective profit study of Queensland CTP premiums as at 31 December 2021

12 May 2022

Document classification.

ACN 087 047 809
ABN 29 087 047 809
www.taylorfry.com.au

Taylor Fry Pty Ltd

ISO 27001 INFO SEC Certified System

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12 May 2022

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Dear Neil

Retrospective profit study of Queensland CTP premiums as at 31 December 2021

This report sets out the details of our review of the retrospective profitability of Queensland CTP premiums with a focus on drivers of profitability as well as changes in our view of retrospective profitability over the year ending 31 December 2021.

Yours sincerely

Peter Mulquiney
FIAA

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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 per policy as at 31 December 2021 as a percentage of insurer premiums, and in dollar values. These estimates incorporate an allowance for 0% p.a. future superimposed inflation.

Table 1.1 – Scheme retrospective profit margins for all classes as at 31 December 2021

Underwriting Period	Profit margin (insurer average premium, 0% p.a. superimposed inflation)	
	%	$
2017	19%	45
2018	16%	35
2019	13%	29
2020	10%	23
2021	4%	8
Most recent year	4%	8
Most recent 3 years	9%	20
Most recent 5 years	13%	28
Most recent 8 years	20%	52

Figure 1.1 shows the scheme profit margin over time incorporating an allowance for 0% p.a. future superimposed inflation.

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

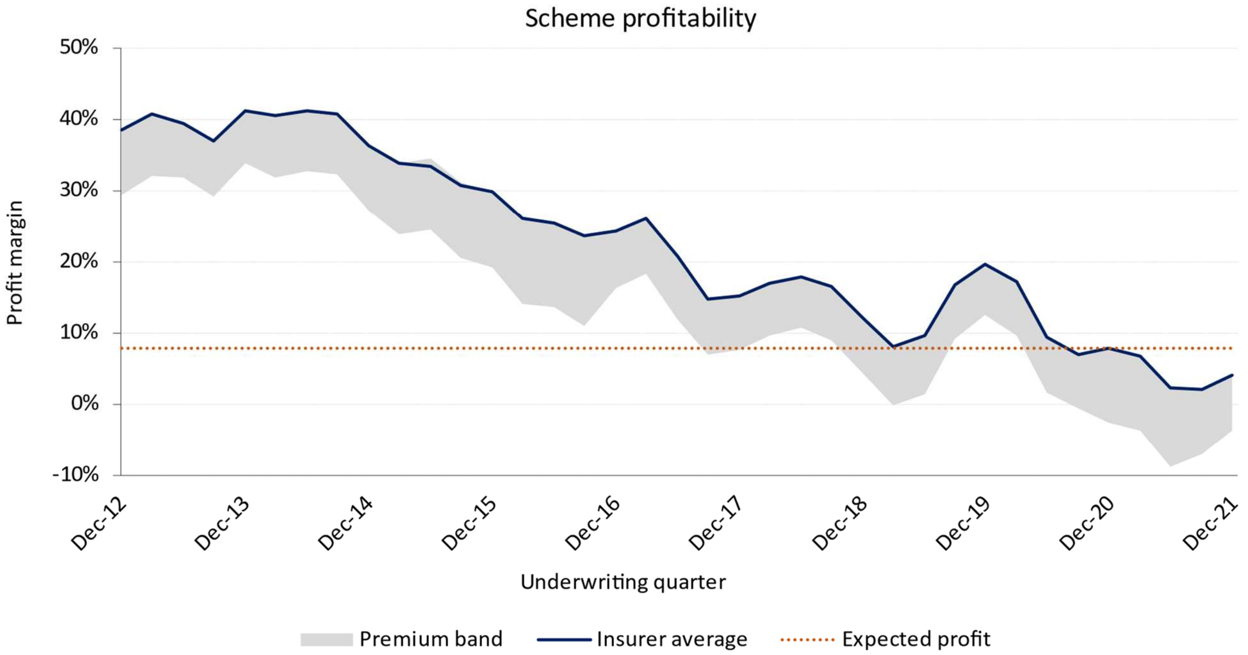


Figure 1.1 shows that the profit margin has been above the target profit margin of 7.75% in all underwriting quarters except for the most recent six since September 2020. We note that the target profit margin is the margin we expect to achieve on average over a period of several years. And so, in some years the profit margin will be below target, but longer-term averages should yield a profit closer to the target. Table 1.1 shows that over the last three years the average profit margin is estimated to be 9%, and over eight years it is estimated to be 20%. The main drivers of the excess profits over the last eight years have been insurers pricing at the ceiling, claim frequency and average claim sizes emerging lower than allowed for in pricing, AWE growth being lower than forecast at the time of premium setting and superimposed inflation projections not emerging as expected. The reasons for profit in excess over target over the last three years is explored in detail in Section 6.1.

1.2 Uncertainties in the estimated profit margin

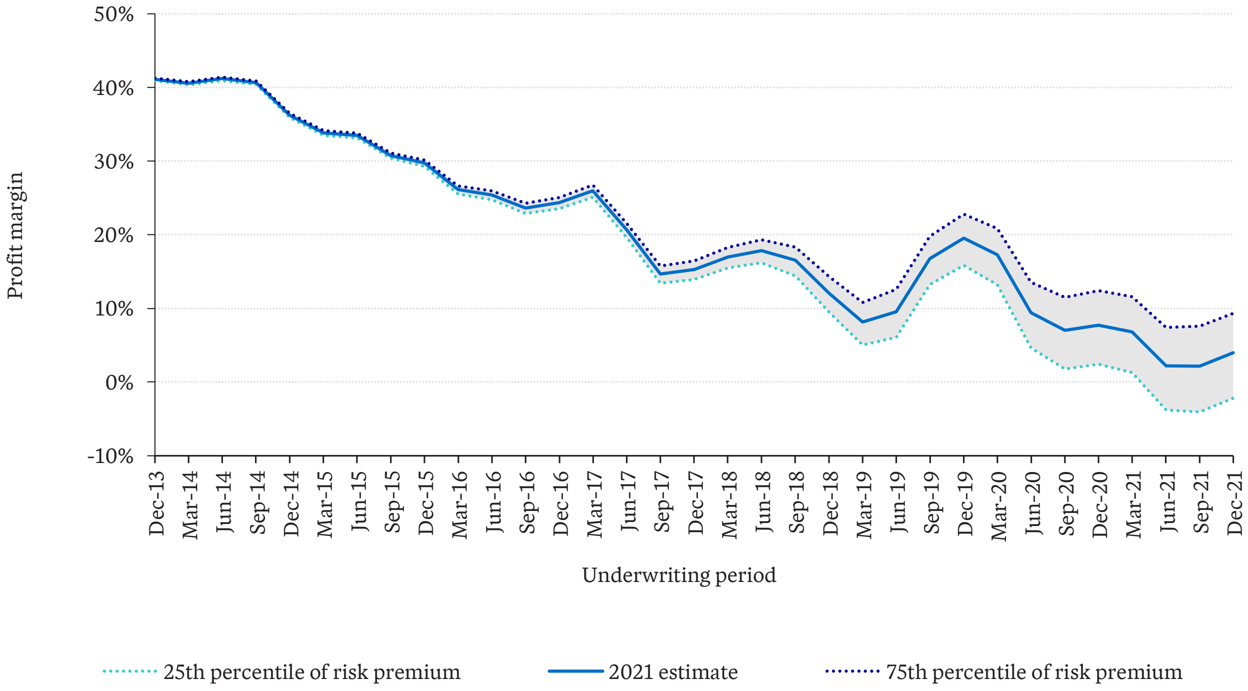
The profit margin estimates reported in Table 1.1 are highly uncertain and the degree of uncertainty increases for more recent underwriting years. This uncertainty is driven by 2 main sources:

- **Risk premium evolution** – the average claim size for the most recent underwriting year will finalise around 4 years after the latest finalized claim data available to estimate the risk premium. Historically there have been considerable movements in the risk premium over a four-year period.
- **Historical risk premium error** – even for underwriting years where a good volume of finalized claims is available (such as the 2017 underwriting year where 29% of claims costs expected are not yet known), there is uncertainty in the outcomes for claims yet to finalise.

We have quantified this "business as usual variation" and have found that there is an approximately 50% chance that the actual risk premium – in current values and ignoring investment returns – will fall within the range of the estimated risk premium by +/- 7.5% and 50% chance that it will fall outside this range. Allowing for movements in wage inflation and discount rates this range would increase to approximately +/- 8%.

Figure 1.2 illustrates this uncertainty by showing an approximate 50% confidence interval for scheme retrospective profit. The confidence interval is such that roughly 50% of the time we expect the actual profit margins to fall outside of the interval. The confidence interval narrows as one moves to the left because more of the claims cost has been paid and so the uncertainty is less.

Figure 1.2 – Approximate 50% confidence interval for scheme retrospective profit



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.

On 5 December 2019, new legislation commenced which aims to stop the practice of insurance car crash scamming (commonly known as the ‘claim farming reform’). Car crash scammers contact unsuspecting people and pressure them (or their family members) to make a CTP insurance claim or share their personal information to law firms for a profit. Car crash scammers have been known to use aggressive tactics and target vulnerable Queenslanders. The legislation makes it illegal in Queensland for lawyers to pay a fee to a car crash scammer.

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 2022. This advice was based on data to 31 December 2021 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 2022Q3 underwriting quarter”, dated 23 March 2022, by Peter Mulquiney and Soroush Amirabadi. 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 2020” dated 10 May 2021, by Peter Mulquiney (“the Previous Report”) was based on data to 31 December 2020 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 2005 to December 2021
- 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 2005. The most recent twelve months of exposure was extracted and provided by MAIC on 3 February 2022. 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 October 2005 to 1 April 2022 on 3 February 2022.

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 3 February 2022. 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 2022. 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 2022 on 3 February 2022.

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 2021) 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 2001 to 31 December 2021 and were in 31 December 2021 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% 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. Since September 2021, reinsurance costs have been reduced to nil.

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% p.a. This is what MAIC allowed for in their calculation of ceiling and floor premium as at 31 December 2021.

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 have adjusted 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 Impact of claim farming reforms and COVID-19

Claim frequency for the 2020 and 2021 accident years were significantly lower than 2019 resulting from:

- The claims farming reforms introduced in December 2019
- The impact on COVID-19 on traffic volumes – traffic volumes reduced due the COVID-19 lockdowns and the associated impacts on economic activity.

In this analysis, we have separated the impact of these two drivers of reduction in claim frequency by utilising the estimated impact of COVID-19 on claim frequencies from the Annual Advice.

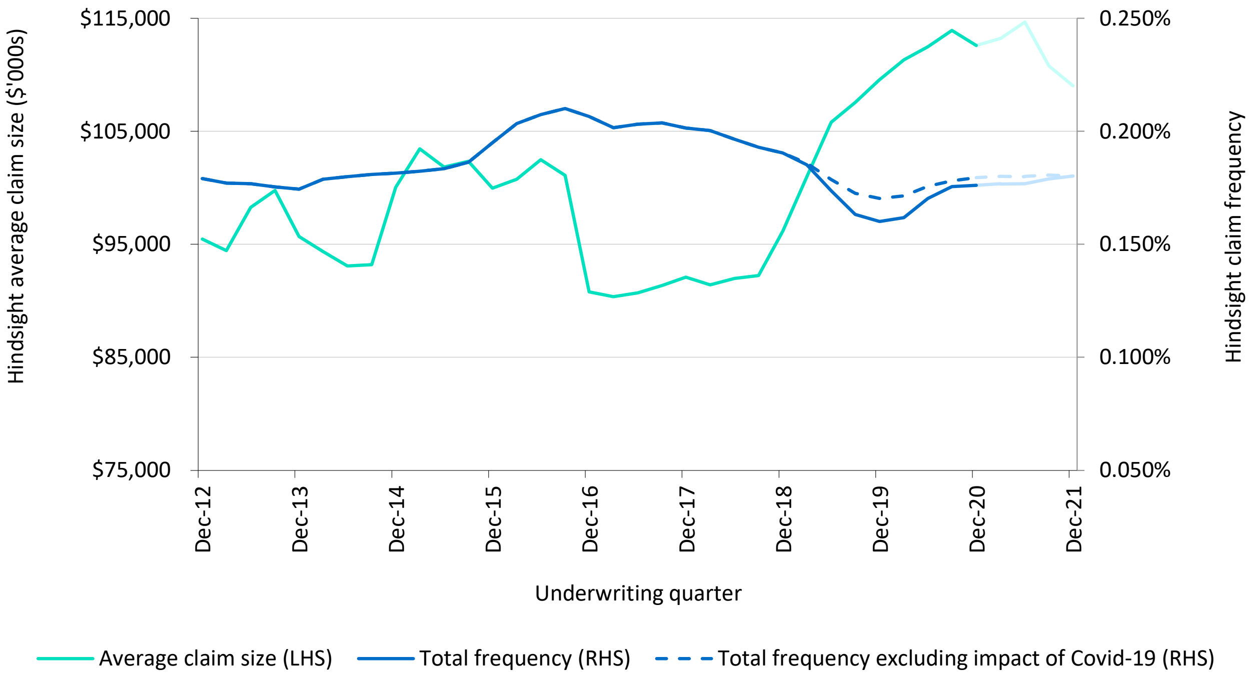
5 Results

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 2012 to 31 December 2021 underwriting quarters.

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



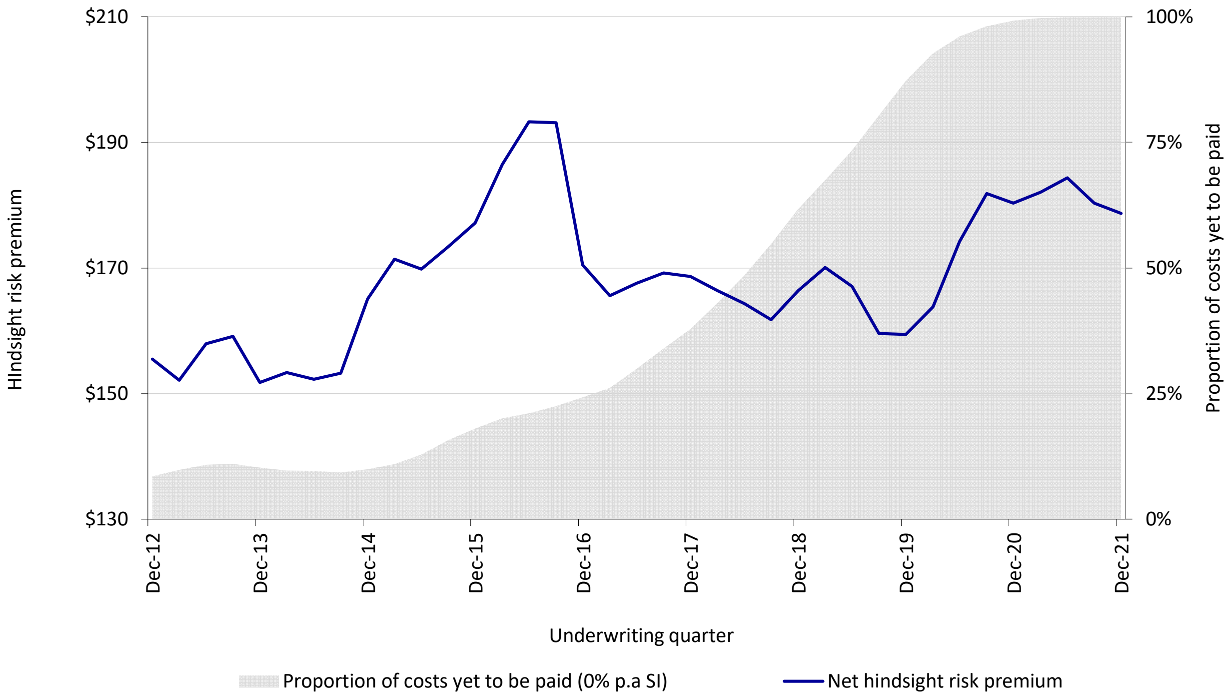
Frequency trended downwards to 2014 then increased to a peak in 2016. It has been decreasing since the peak with the impact of claim farming reforms and COVID-19 reducing frequency even further in recent underwriting quarters. The current estimate for the 2021 underwriting year is approximately 0.178%.

The scheme average claim size had remained stable for underwriting years from 2012 to 2016, however, this level was much higher than historically observed claim sizes. Following the introduction of the NIISQ, the scheme 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 in scheme average claim size up to the end of the 2020 underwriting year. This increasing trend has been driven by a number of factors including decreases in frequency over this period being attributed to lower severity claims causing a strengthening in severity profile, increases in our projected future claim sizes due to higher than expected experience over recent finalisation periods and higher projections of future AWE inflation.

Figure 5.2 shows the resulting hindsight risk premium for the 31 December 2012 to 31 December 2021 underwriting quarters.

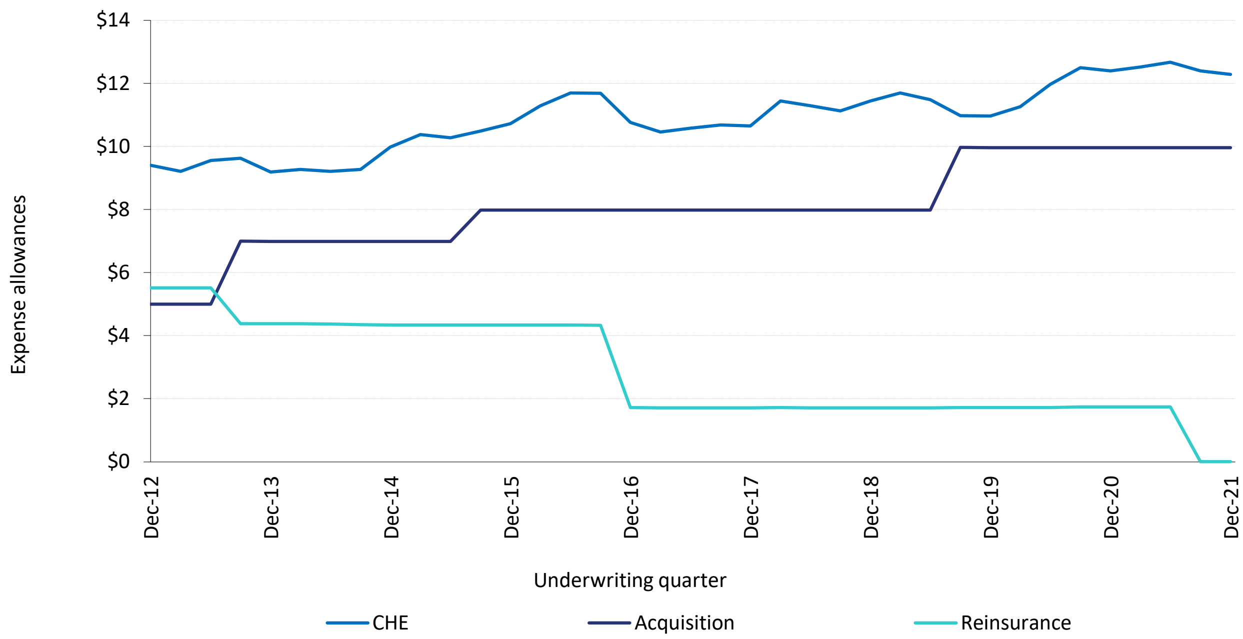
Figure 5.2 – Scheme hindsight risk premium



5.1.2 Expenses and allowances

Figure 5.3 shows the expenses and allowances. The CHE and acquisition costs have increased since 2012. The reinsurance cost allowances were decreased from 1 October 2016 because of the introduction of the NIISQ and more recently decreased further in Sep-21.

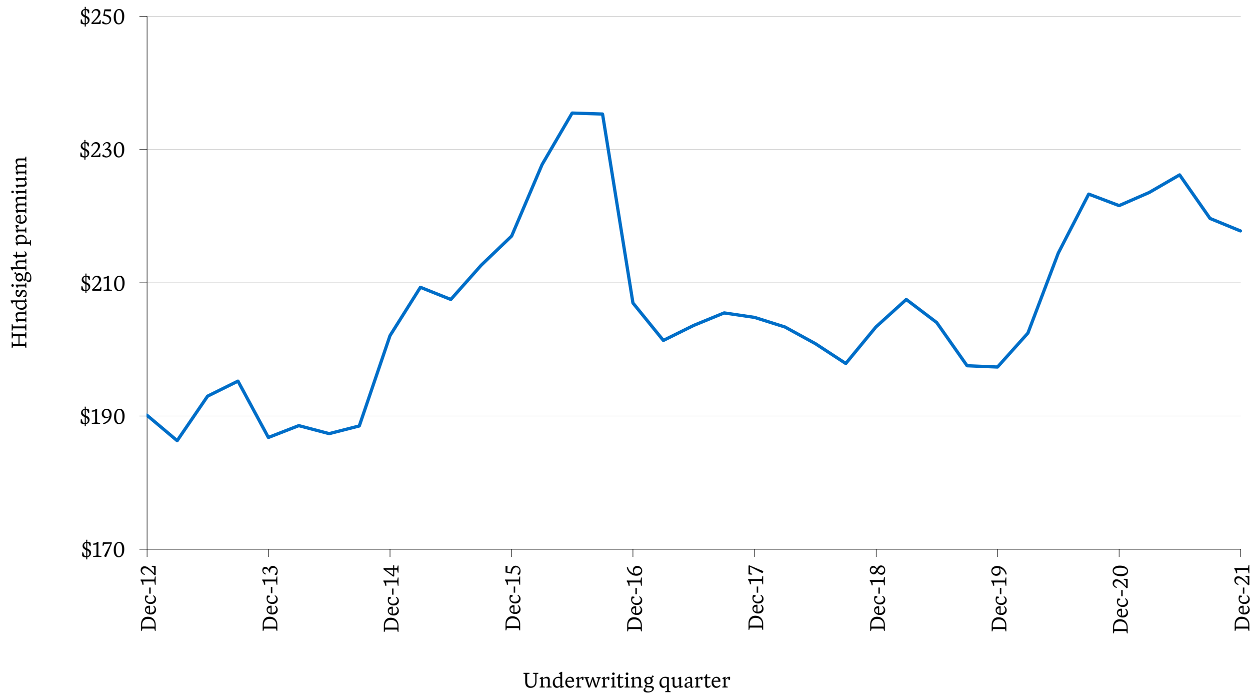
Figure 5.3 – Expenses and allowances



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)

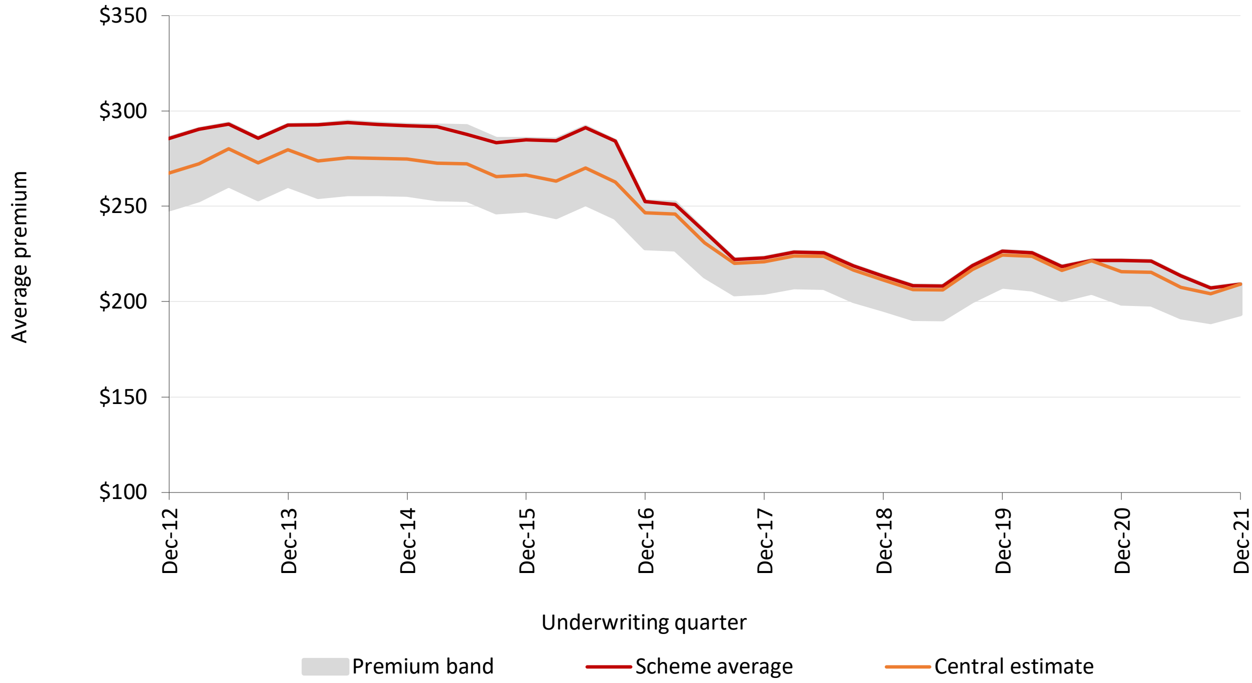


5.2 Central estimate, floor, ceiling and average insurer premiums

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 2012 to 31 December 2021 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 a 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"). In regards to insurer's payments to MAIC for the exposure covered by NIISQ for the 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.

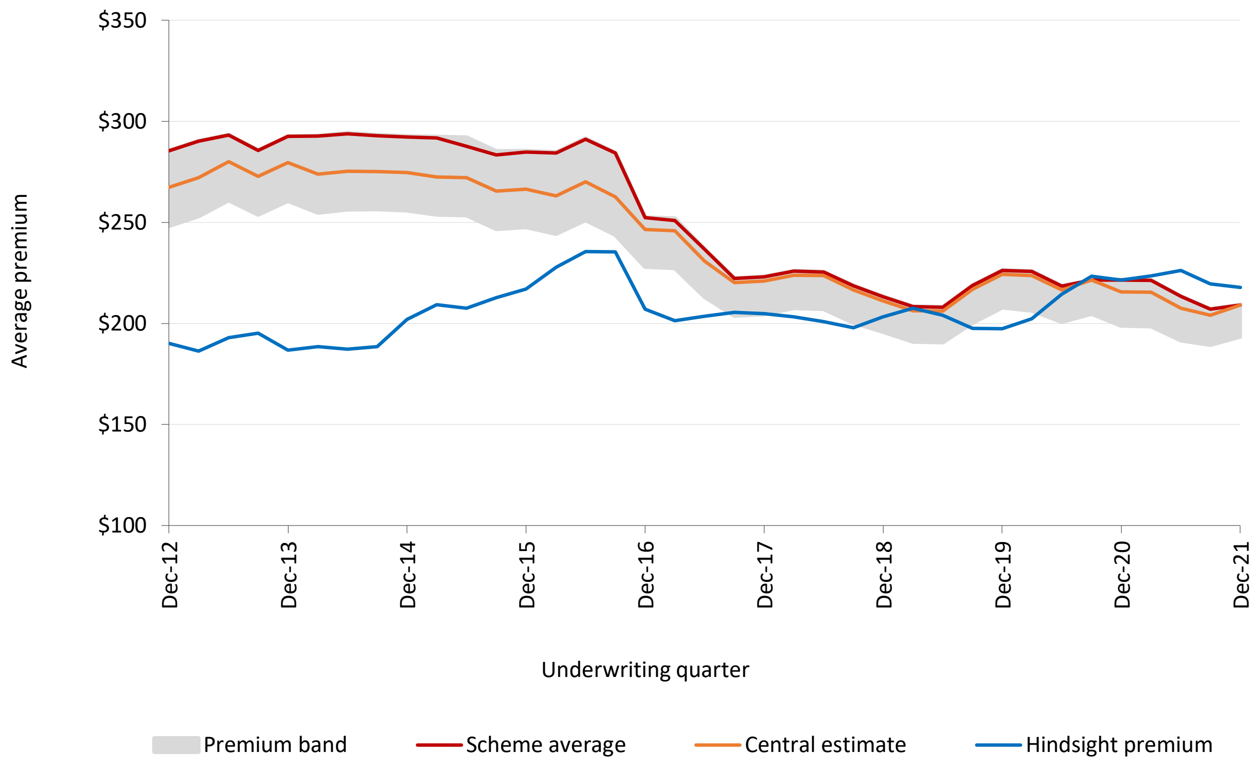
Figure 5.5 – MAIC central estimate, premium band and insurer average premiums



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% 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 apart from Mar-21 onwards with the gap tightening for underwriting quarters after Sep-16.

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 would have provided profit above the expected profit margin for most underwriting quarters prior to 2020.

Over the most recent year, the insurer average premiums has achieved a profit margin of 4% which is below the expected profit margin of 7.75%. Taking a longer-term view over a three and five-year period, insurers have averaged a profit margin of 9% and 13% respectively which is above the expected profit margin. The profit margin is a target to be reached over the long term and single underwriting year profits can fluctuate above and below the expected profit margin.

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

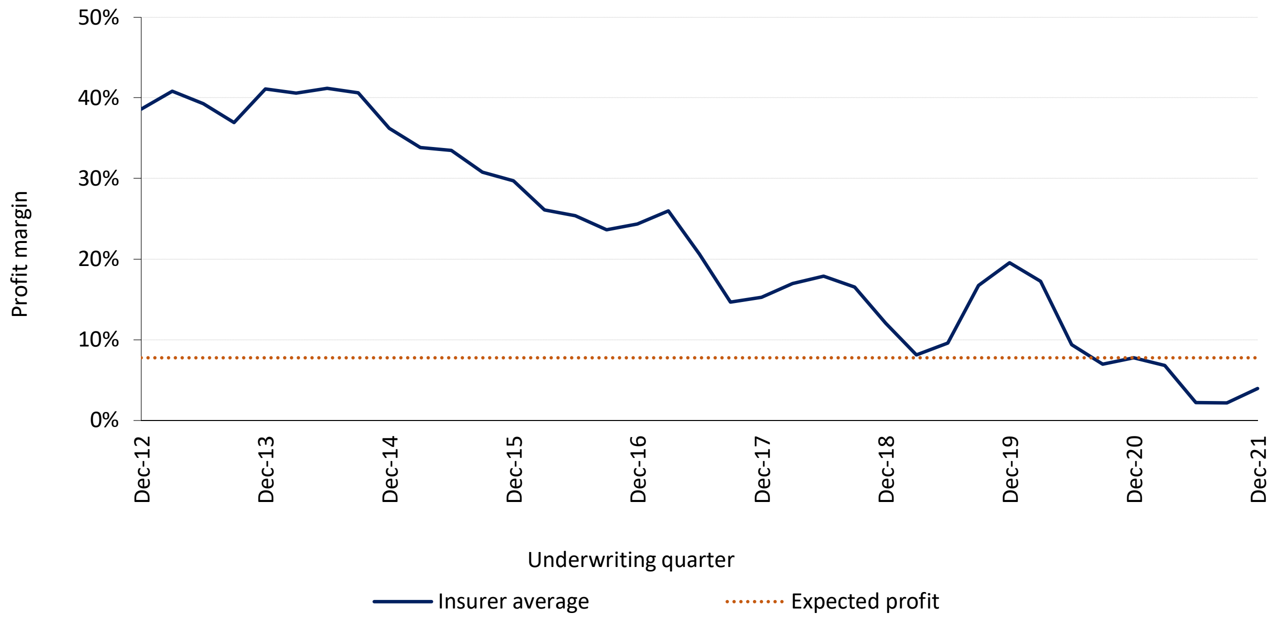
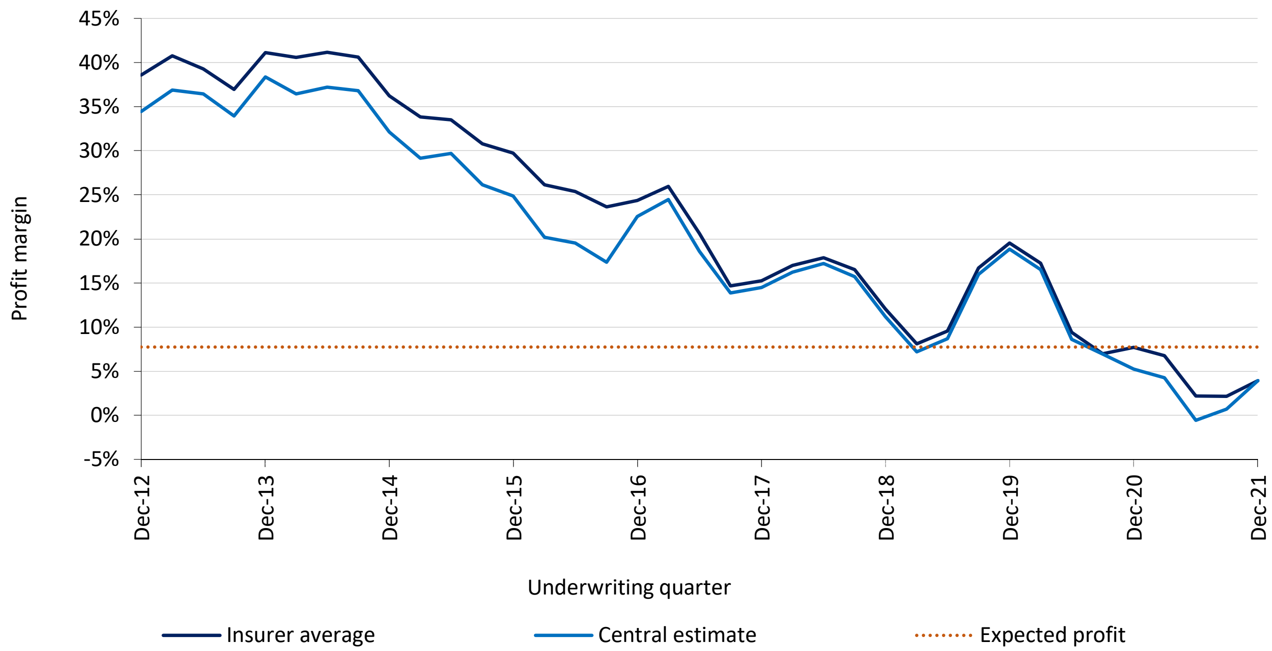


Figure 5.8 shows the central estimate alongside the insurer average premium. The insurer average has been consistently above the central estimate with a considerable gap between the two up till 31 March 2017. After this point, MAIC have reduced ceiling margin allowance for insurers to reduce excess insurer profits and promote competition in the market. This has resulted in a much narrower margin between the central estimate and insurer filed premiums for recent underwriting periods. Both the central estimate and insurer average remained above the expected profit level up until Jun-20 from which point it has begun to dip below this level.

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 (0.0% p.a. superimposed inflation)

	Insurer average	Ceiling	Floor
Most recent 1 years	4%	4%	-6%
Most recent 3 years	9%	9%	1%
Most recent 5 years	13%	13%	4%
Most recent 8 years	20%	20%	11%

6 Reconciliation

In this section 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 adjusted for COVID-19)
3. Impacts of COVID-19 – the change in profit resulting from the difference between the current expected claim frequency adjusted for COVID-19 and unadjusted for COVID-19
4. 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)
5. 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.)
6. Loadings – the change in profit resulting from assumed increase in claim size due to the CLAA and 2012 tax change not emerging
7. 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
8. 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)
9. 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
10. 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 reduced again to 0.5% per annum for underwriting quarters from 1 July 2019 and reduced further to 0% per annum for underwriting quarters from 1 January 2022.

Table 6.1 – Reconciliation of profit margin per policy to expected profit

Period	Expected profit margin	Changes due to										All-class insurer average profit margin1
		Insurers filling near ceiling	Claim frequency deviation	COVID	Average claim size deviation	Superimposed inflation deviation	Loadings deviation	Economic gap	Advised AWE	Yields	Change in future super-imposed inflation	
2017	8%	1%	-6%	0%	9%	3%	1%	0%	2%	1%	1%	19%
2018	8%	1%	3%	0%	2%	1%	0%	0%	0%	0%	1%	16%
2019	8%	1%	10%	3%	-5%	1%	0%	0%	-1%	-3%	1%	13%
2020	8%	1%	7%	2%	-6%	0%	0%	0%	-2%	0%	1%	10%
2021	8%	2%	-2%	1%	-3%	0%	0%	0%	-6%	2%	2%	4%
Mar-21	8%	2%	2%	2%	-5%	0%	0%	0%	-5%	1%	1%	7%
Jun-21	8%	3%	-2%	2%	-4%	0%	0%	0%	-6%	1%	2%	2%
Sep-21	8%	1%	-4%	1%	-2%	0%	0%	0%	-6%	2%	2%	2%
Dec-21	8%	0%	-3%	0%	-1%	0%	0%	0%	-6%	4%	2%	4%
Most recent 3 years	8%	1%	5%	2%	-5%	0%	0%	0%	-3%	0%	1%	9%
Most recent 5 years	8%	1%	2%	1%	0%	1%	0%	0%	-1%	0%	1%	13%

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

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

- **Claim frequency** has been lower than allowed for in pricing, resulting in additional profitability of 5%. This is mainly driven by underwriting years 2019 and 2020 where premiums were set using pre-claim farming reform experience, but actual claim frequency experience was lower than the pricing basis due to the impacts of the claim farming reforms introduced in December 2019. The additional profits experienced over these years were reversed slightly in the 2021 underwriting year as the premium basis was lowered to reflect the post-claim farming experience but the experience over the 2021 accident year has been slightly higher than expectations.
- **COVID-19 related shutdowns** have led to a reduction in traffic volumes and hence claim frequency over the 2020 and 2021 accident years resulting in an additional profitability of 2%. This impacts the profit for 2019 to 2021 underwriting years.
- **Average claim size** has been higher than allowed for in pricing, resulting in a reduction in profitability of 5%. This is mainly driven by underwriting years 2019 and 2020 which have seen a significant strengthening in claim size due to a strengthening in severity profile caused by the drop in frequency over the 2020 accident year. This is coupled with an increase in our estimate of future claim sizes due to higher average claim size experience for severity 1Y and 2 claims over the 2021 accident year.
- **AWE growth** has been higher than forecast at the time of premium setting due to higher-than-expected AWE over the year as well as significant increases in future estimates of AWE after a long period of low inflationary conditions. This has resulted in a reduction in 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 claim frequency expected at underwriting and the current expected claim frequency (actual and the latest forecast adjusted for COVID-19)
2. Wage inflation – the change between projected wage inflation at the Previous Report and current projected wage inflation
3. 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
4. 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)
5. Impacts of COVID-19 – the change in profit resulting from the difference between the current expected claim frequency adjusted for COVID-19 and unadjusted for COVID-19

Table 6.2 – Reconciliation of profit margin per policy to expected profit

Period	Previous Report (0.5% SI)	Changes due to				Insurer average profit margin (0% SI)
		Frequency	Inflation	SI	ACS	
2016	26%	0%	-1%	0%	-1%	25%
2017	21%	0%	-1%	0%	-1%	19%
2018	20%	0%	-2%	1%	-3%	16%
2019	18%	1%	-3%	1%	-4%	13%
2020	16%	-1%	-4%	2%	-2%	10%
2016-2020	20%	0%	-2%	1%	-2%	17%

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

Table 6.2 shows that we have observed a **decrease in retrospective profitability** compared to last year's estimates for underwriting years 2016 to 2020, due to:

- Higher than expected actual wage inflation over 2021
- An increase in future inflation projections
- An increase in projected average claim size
- Higher than expected frequency for the 2020 underwriting year driven by higher than expected experience over the year
- Slightly offset by a decrease in claim frequency for the 2020 underwriting year and a decrease in the expected superimposed inflation assumption

6.3 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 6.3 shows our assessment of profit for the last few measurement years.

Table 6.3 – Assessments of profit by measurement year

Underwriting year	Measurement year								
	2013	2014 (2.5% p.a. SI)	2015	2016	2017 (1% p.a. SI)	2018	2019	2020 (0.5% p.a. SI)	2021 (0% p.a. SI)
2013	17%	29%	35%	40%	43%	42%	39%	39%	40%
2014		24%	28%	38%	41%	41%	40%	39%	40%
2015			18%	32%	37%	36%	34%	32%	32%
2016				25%	26%	25%	25%	26%	25%
2017					14%	17%	17%	21%	19%
2018						10%	12%	20%	16%
2019							5%	18%	13%
2020								16%	10%
2021									4%

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

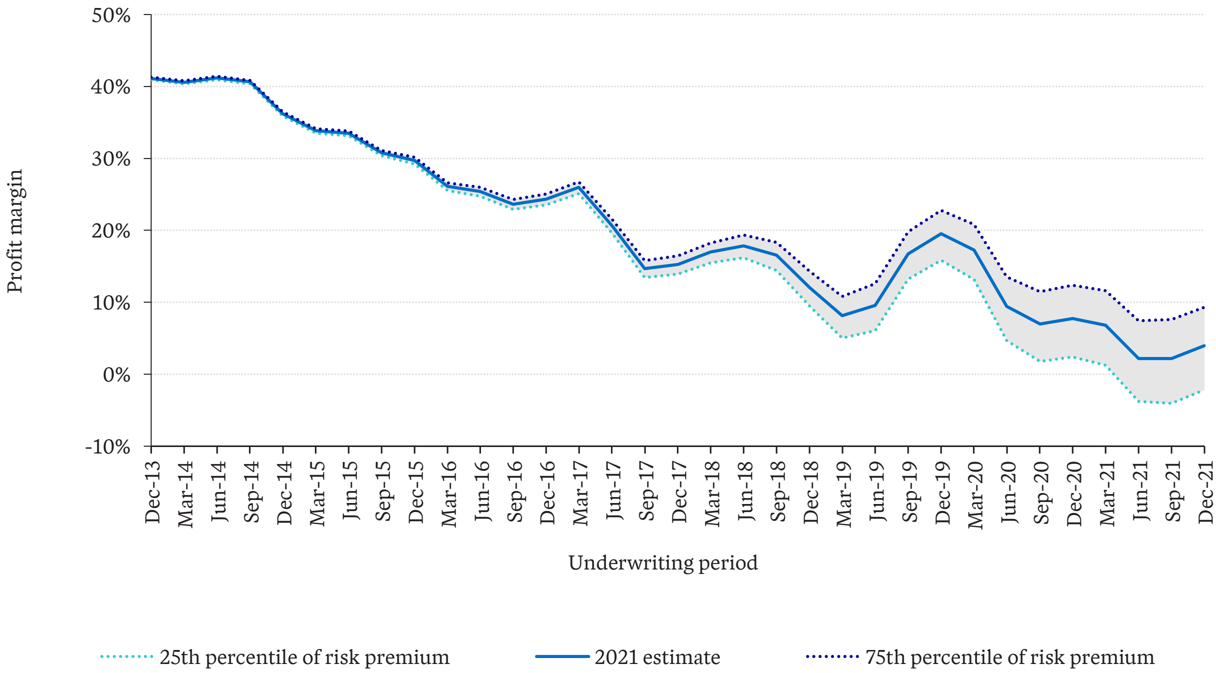
The key points illustrated by this table are:

- Estimates of profitability for each underwriting year have generally stabilized after 4-5 years of development with minor fluctuations due to large claims experience.
- In the early development years for underwriting years prior to 2018, there was a year on year increasing trend in our estimate of profitability driven by a weakening severity profile, a decrease in inflation and a high superimposed inflation estimate built into pricing.
- For the 2015 and 2016 underwriting years, this trend was offset by an increasing core claim frequency leading to more stable estimates of profitability.
- In this review, our estimates of the profitability of underwriting years prior to 2017 have stayed relatively stable while underwriting years 2017 and later have seen a decrease in profitability. The drivers of this decrease have been explained in detail in Section 6.2.

An implication of this table is that the profit margin estimates for the 2020 and 2021 underwriting years are highly uncertain. This is the result of the fact that for these underwriting years a large proportion of the claims costs that are expected are not yet known and need to be forecast. For example, for the 2021 underwriting year almost all of the claims costs that are expected for this year are not yet known and need to be forecast. There is considerable uncertainty in these claim cost forecasts, and it typically takes several years before an underwriting quarter's claims cost can be known with a high degree of certainty.

Figure 6.1 illustrates this uncertainty by showing an approximate 50% confidence interval for scheme retrospective profit. The confidence interval is such that roughly 50% of the time we expect the actual profit margins to fall outside of the interval. The confidence interval narrows as one moves to the left because more of the claims cost has been paid and so the uncertainty is less.

Figure 6.1 – Approximate 50% confidence interval for scheme retrospective profit



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 2021 to 31 December 2021. Underwriting quarters with exposure after 31 December 2021 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-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%
Mar-20	0.23%	0.16%	0.42%	0.83%	1.24%	1.50%	1.60%	1.68%	1.76%	1.84%
Jun-20	0.24%	0.12%	0.40%	0.88%	1.35%	1.62%	1.71%	1.76%	1.82%	1.87%
Sep-20	0.12%	0.21%	0.41%	0.66%	0.90%	1.11%	1.30%	1.47%	1.63%	1.77%
Dec-20	0.05%	0.22%	0.74%	1.66%	2.31%	2.58%	2.72%	2.85%	2.98%	3.09%
Mar-21	-0.01%	0.18%	0.82%	1.84%	2.16%	2.32%	2.53%	2.73%	2.90%	3.04%
Jun-21	0.01%	0.23%	0.82%	1.28%	1.46%	1.59%	1.73%	1.87%	2.01%	2.14%
Sep-21	0.67%	1.30%	1.82%	2.10%	2.21%	2.32%	2.44%	2.56%	2.69%	2.81%
Dec-21	1.13%	2.08%	2.48%	2.45%	2.36%	2.36%	2.41%	2.50%	2.61%	2.74%

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-21	1,290.55	
Mar-22	1,301.23	3.40%
Jun-22	1,312.33	3.50%
Sep-22	1,323.83	3.59%
Dec-22	1,335.66	3.57%
Mar-23	1,347.25	3.47%
Jun-23	1,358.63	3.38%
Sep-23	1,369.83	3.30%
Dec-23	1,380.84	3.22%
Mar-24	1,391.70	3.15%
Jun-24	1,402.40	3.11%
Sep-24	1,413.17	3.10%
Dec-24	1,423.95	3.09%
Mar-25	1,434.83	3.09%
Jun-25	1,445.79	3.08%
Sep-25	1,456.77	3.06%
Dec-25	1,467.77	3.04%
Mar-26	1,478.75	3.01%
Jun-26	1,489.70	2.97%
Sep-26	1,500.58	2.94%
Dec-26	1,511.42	2.91%
Mar-27	1,522.25	2.89%
Jun-27	1,533.08	2.87%
Sep-27	1,543.93	2.85%
Dec-27	1,554.80	2.84%
Mar-28	1,565.68	2.82%
Jun-28	1,576.58	2.81%
Sep-28	1,587.52	2.80%
Dec-28	1,598.49	2.79%
Mar-29	1,609.51	2.78%
Jun-29	1,620.59	2.78%
Sep-29	1,631.74	2.78%
Dec-29	1,642.96	2.78%
Mar-30	1,654.26	2.78%
Jun-30	1,665.63	2.78%
Sep-30	1,677.10	2.78%
Dec-30	1,688.66	2.79%
Mar-31	1,700.33	2.79%
Jun-31	1,712.09	2.80%
Sep-31 & later	1,723.96	2.86%

Notes; Queensland forecasts from Taylor Fry inflation model for December 2021
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

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-12	0.1	0.7	1.5	2.5	5.7	9.3	13.0	10.8	12.9	12.5	9.0	16.0	13.7	8.7	16.5	5.9	8.1	6.5	2.6	1.7	2.8	3.1	0.3	0.7	5.4	5.6	2.2	0.5	0.2	0.0	1.4	0.0	0.1	0.0	0.1	0.4	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	1.5	2.3	2.5	2.6	1.1	0.5	1.5	1.6	1.3	0.0	1.6	1.4	0.5	0.0	0.3	0.5	0.0		
Jun-13	0.1	0.9	1.2	1.8	7.3	11.4	15.2	13.0	14.9	12.9	8.4	7.8	9.1	8.6	7.5	2.6	5.1	4.1	2.0	3.6	1.0	0.8	4.2	1.0	0.9	0.5	0.2	0.0	1.7	0.7	0.0	0.3	0.0	0.7	0.0			
Sep-13	0.2	0.8	1.2	3.6	6.2	11.7	14.7	17.0	11.5	10.4	12.7	18.9	13.8	11.2	9.5	7.4	1.4	4.8	0.8	4.3	1.4	2.0	3.5	0.3	6.2	2.6	0.2	0.5	0.5	0.2	0.1	0.0	1.4	0.9				
Dec-13	0.1	0.9	1.2	2.1	5.6	9.6	14.9	13.3	14.1	8.2	10.6	13.9	9.1	8.8	12.2	7.2	4.5	1.4	5.6	3.2	0.6	2.7	0.2	0.6	0.9	0.7	3.4	1.0	0.0	0.2	0.0	0.0	0.3					
Mar-14	0.1	0.8	1.5	2.0	4.2	11.2	13.1	13.1	12.5	13.0	11.7	7.5	7.4	6.7	6.1	10.4	2.5	2.3	3.4	1.9	2.1	17.3	1.6	0.3	0.6	0.1	0.7	0.2	0.0	0.2	0.0	0.0						
Jun-14	0.2	1.2	1.7	2.8	7.9	14.5	19.8	11.3	16.5	17.2	11.0	9.3	9.6	10.7	8.2	6.5	5.1	8.2	17.6	1.2	1.8	1.8	15.2	2.5	0.5	1.4	0.4	0.9	0.2	1.3	0.0							
Sep-14	0.1	0.9	1.4	4.3	6.7	13.2	14.2	14.9	12.0	12.5	11.1	9.0	6.7	6.4	4.2	7.1	6.6	1.6	2.5	5.2	1.1	0.3	1.9	3.3	0.5	0.7	0.3	0.2	0.0	0.2								
Dec-14	0.2	0.8	2.5	2.3	8.7	9.8	16.4	13.4	14.0	9.3	7.8	8.6	10.3	8.7	12.2	4.2	6.8	1.1	5.8	4.9	0.6	1.3	1.1	0.0	0.5	0.0	0.1	0.0	1.1									
Mar-15	0.1	0.9	1.5	4.6	7.3	16.0	12.7	19.1	10.1	14.9	9.3	8.1	8.0	7.2	4.9	4.4	5.8	5.1	4.0	15.3	1.6	2.1	0.3	0.3	0.1	0.0	0.5	0.1										
Jun-15	0.2	1.4	2.3	3.7	8.5	13.8	14.1	17.2	14.0	10.5	19.3	10.9	11.1	5.1	6.7	9.8	7.1	5.3	7.0	3.5	2.5	1.6	2.5	0.6	2.2	1.9	0.6											
Sep-15	0.2	1.6	1.9	5.7	7.7	14.0	11.9	16.2	9.9	16.7	20.3	9.5	6.9	11.1	6.2	6.6	6.6	4.5	2.9	10.2	5.3	3.7	0.7	1.3	9.6	4.7												
Dec-15	0.2	1.2	2.0	3.4	6.7	9.4	18.3	12.7	13.4	9.3	11.8	12.0	10.8	6.1	5.4	6.8	4.6	11.6	5.1	5.1	9.2	5.0	2.5	3.7	2.6													
Mar-16	0.2	1.3	2.1	4.2	6.6	13.6	16.4	15.2	21.5	12.7	10.1	12.7	8.7	4.9	8.1	2.2	6.3	2.4	2.3	2.8	3.4	3.2	0.2	0.4														
Jun-16	0.2	1.3	2.4	3.0	8.6	14.0	15.4	13.8	17.5	13.1	13.1	11.7	7.8	7.7	10.3	4.7	5.6	12.3	5.0	2.0	5.1	2.3	0.5															
Sep-16	0.2	1.1	1.4	4.4	8.8	16.4	15.1	15.7	18.1	12.8	7.7	14.4	10.7	7.3	8.8	6.2	6.9	2.7	7.9	2.5	3.8	0.5																
Dec-16	0.2	1.4	1.8	3.2	8.4	14.4	24.0	17.8	13.9	16.7	12.4	9.3	9.8	5.2	6.5	6.5	6.4	9.9	5.1	5.6	1.6																	
Mar-17	0.2	1.1	1.9	3.2	7.6	17.6	16.0	14.2	12.5	18.1	12.4	13.8	7.7	6.6	8.4	8.7	7.0	5.3	4.7	0.8																		
Jun-17	0.1	1.1	2.0	2.3	9.3	14.8	18.1	15.5	18.2	13.5	12.4	8.3	9.4	5.8	12.0	5.8	4.6	4.0	1.7																			
Sep-17	0.1	0.9	1.5	3.2	7.4	15.2	13.4	20.0	13.7	15.0	12.6	11.1	11.0	8.4	5.7	7.4	8.7	1.5																				
Dec-17	0.1	0.7	1.4	2.7	7.4	17.0	16.2	16.9	11.9	10.5	15.4	9.1	9.5	7.9	9.2	2.3	3.9																					
Mar-18	0.1	1.0	1.5	2.9	5.1	14.8	16.5	17.6	10.9	10.9	10.0	12.9	11.3	11.3	10.2	4.4																						
Jun-18	0.1	1.0	1.7	2.6	7.9	13.9	12.9	13.1	14.2	14.5	16.8	15.5	10.4	11.3	7.2																							
Sep-18	0.1	0.9	1.6	3.5	9.0	12.4	13.7	14.8	10.1	13.8	15.7	14.4	13.4	9.6																								
Dec-18	0.1	0.8	1.7	3.0	5.9	9.9	14.2	10.1	16.2	11.0	13.6	10.9	7.0																									
Mar-19	0.2	1.0	1.6	2.2	4.5	11.9	11.5	12.5	10.0	14.2	9.0	8.9																										
Jun-19	0.2	1.2	1.7	2.0	6.0	9.0	14.0	11.9	13.8	15.2	8.6																											
Sep-19	0.2	1.0	1.4	2.6	5.4	14.4	11.4	13.8	13.7	12.8																												
Dec-19	0.2	0.6	1.2	2.6	8.5	9.8	15.0	11.1	8.6																													
Mar-20	0.1	0.5	0.9	1.7	3.4	9.8	12.1	5.9																														
Jun-20	0.0	0.4	1.0	1.1	3.5	6.5	7.2																															
Sep-20	0.1	0.6	1.1	1.4	4.1	6.9																																
Dec-20	0.1	0.4	0.8	1.4	4.9																																	
Mar-21	0.1	0.3	0.6	1.2																																		
Jun-21	0.1	0.4	0.5																																			
Sep-21	0.1	0.3																																				
Dec-21	0.1																																					

Notes; Sourced from the PIR system as at 31 December 2021 (as supplied by MAIC)

TAYLOR FRY

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-12																																						11.8
Mar-13																																					0.6	8.6
Jun-13																																				0.7	0.7	8.6
Sep-13																																			1.3	1.3	1.2	17.4
Dec-13																																		1.2	1.2	1.1	1.0	16.5
Mar-14																																	1.1	1.0	1.0	0.9	0.8	11.1
Jun-14																																1.4	1.3	1.3	1.2	1.1	1.1	15.5
Sep-14																															1.0	1.0	0.9	0.8	0.8	0.7	0.7	8.8
Dec-14																														1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.5	5.5
Mar-15																													1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	8.4
Jun-15																												1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.8	0.7	8.5
Sep-15																											1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.7	0.7	0.6	0.6	7.1
Dec-15																										1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.8	10.4
Mar-16																									1.8	1.6	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7	0.6	7.8
Jun-16																								3.1	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	16.6
Sep-16																							2.7	2.5	2.3	2.1	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	10.3
Dec-16																						3.9	3.4	3.1	2.8	2.6	2.3	2.1	2.0	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	13.1
Mar-17																					4.0	3.3	2.8	2.6	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	1.0	0.9	10.2
Jun-17																				4.2	3.6	3.0	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	9.3
Sep-17																			5.5	5.0	4.1	3.5	3.0	2.8	2.5	2.3	2.1	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9	11.0
Dec-17																		5.3	4.4	3.8	3.3	2.7	2.4	2.2	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	7.4
Mar-18																	6.6	5.8	4.8	4.2	3.7	3.0	2.5	2.2	2.0	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	9.6
Jun-18																10.2	8.8	7.9	6.5	5.9	5.0	4.3	3.5	3.2	2.9	2.7	2.4	2.3	2.1	2.0	1.8	1.7	1.6	1.5	1.3	1.2	1.1	13.7
Sep-18															9.7	8.1	6.8	6.1	5.0	4.5	3.8	3.2	2.7	2.5	2.2	2.1	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	10.4
Dec-18														11.8	9.6	8.1	6.8	5.8	4.9	4.2	3.7	3.1	2.6	2.4	2.1	1.9	1.7	1.6	1.5	1.4	1.2	1.1	1.1	1.0	0.9	0.8	0.7	7.7
Mar-19													13.3	11.0	9.1	7.7	6.7	6.0	5.0	4.4	3.8	3.2	2.6	2.4	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9	10.7
Jun-19												14.5	14.2	11.8	9.7	8.2	7.0	6.0	5.0	4.4	3.8	3.2	2.7	2.5	2.2	2.0	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1.1	1.0	0.9	0.8	9.5
Sep-19											16.2	15.2	15.0	12.5	10.5	8.8	7.5	6.6	5.5	4.8	4.2	3.5	3.0	2.7	2.5	2.3	2.0	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	10.8
Dec-19										14.2	14.2	13.3	13.1	11.0	9.1	7.7	6.7	6.0	4.9	4.5	3.8	3.3	2.7	2.5	2.2	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	10.7
Mar-20									12.1	12.3	12.5	11.7	11.5	9.6	8.0	6.7	5.7	5.0	4.1	3.6	3.1	2.6	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	0.8	0.7	8.3
Jun-20								11.3	10.9	10.8	11.0	10.4	10.4	8.8	7.4	6.3	5.4	4.9	4.0	3.6	3.1	2.6	2.3	2.1	1.9	1.7	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.8	9.6
Sep-20							14.2	14.2	13.8	14.2	14.2	13.4	13.2	11.1	9.3	7.9	6.8	6.0	5.0	4.4	3.9	3.2	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	1.0	0.9	11.2
Dec-20						11.1	13.7	13.7	13.5	13.6	13.3	12.3	12.2	10.2	8.6	7.4	6.3	5.7	4.6	4.2	3.6	3.1	2.6	2.4	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.9	0.9	10.9
Mar-21					5.2	11.9	14.4	14.3	13.9	14.3	14.1	13.1	13.1	11.0	9.3	7.9	6.8	6.0	5.0	4.5	3.9	3.2	2.7	2.5	2.2	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	11.7
Jun-21				2.3	5.7	11.9	14.5	14.6	14.4	14.5	14.3	13.4	13.3	11.3	9.6	8.2	7.1	6.3	5.3	4.7	4.2	3.4	2.9	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	12.7
Sep-21			0.9	2.1	5.5	11.5	14.2	14.2	14.0	14.2	13.9	13.0	12.9	10.9	9.2	7.9	6.8	6.0	5.0	4.5	3.9	3.3	2.8	2.5	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	11.5
Dec-21		0.3	0.9	2.1	5.6	11.8	14.5	14.5	14.3	14.5	14.2	13.3	13.2	11.1	9.3	8.0	6.9	6.1	5.1	4.5	3.9	3.3	2.8	2.5	2.3	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.2	1.2	1.1	1.0	0.9	11.7

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	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2,526,643	2,587,192	2,630,759	2,682,781	2,738,530	2,785,016	2,821,602	2,855,719	2,917,808	2,977,982
2	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	13,050	13,738	14,417	15,109	15,673	16,379	16,866	17,377	18,061	19,037
3	2291%	1627%	1627%	1627%	1627%	1627%	1627%	1627%	1627%	1627%	2,701	2,698	2,712	2,699	2,638	2,649	2,608	2,483	2,063	2,085
4	159%	159%	159%	159%	159%	159%	159%	159%	159%	159%	43,865	43,820	41,928	39,883	41,894	43,780	50,287	50,352	37,003	43,657
5	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	20,741	22,527	24,088	25,696	27,343	29,193	31,571	34,400	36,225	37,712
6	100%	101%	102%	103%	104%	105%	105%	105%	105%	105%	729,000	760,895	786,403	811,452	837,849	869,093	900,592	928,602	964,853	1,006,218
7	308%	308%	308%	308%	308%	308%	308%	308%	308%	308%	74,031	75,806	75,260	73,939	73,782	75,742	78,216	79,608	81,014	84,597
8	142%	142%	142%	142%	142%	142%	142%	142%	142%	142%	5,469	5,537	5,592	5,729	5,781	5,830	5,842	5,886	6,117	6,261
9	153%	153%	153%	153%	153%	153%	153%	153%	153%	153%	3,715	3,712	3,686	3,722	3,731	3,846	3,909	3,953	4,025	4,105
10A	555%	555%	555%	555%	555%	555%	555%	555%	555%	555%	2,735	2,696	2,683	2,648	2,598	2,646	2,713	2,773	2,445	2,572
10B	2242%	2043%	1861%	1861%	1861%	1861%	1861%	1861%	1861%	1861%	2,203	2,163	2,152	2,147	2,170	2,218	2,188	2,235	2,260	2,272
11	460%	460%	460%	460%	460%	460%	460%	460%	460%	460%	6,509	6,768	6,805	6,617	6,470	6,647	6,777	6,554	5,814	6,043
12	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	59,333	62,066	64,824	70,808	78,389	83,129	87,194	90,928	98,655	103,997
13	28%	27%	26%	24%	23%	22%	22%	22%	22%	22%	116,961	122,786	126,235	125,915	125,972	125,055	123,970	122,224	123,230	123,627
14	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	25,014	25,075	24,901	24,896	24,996	25,136	25,194	25,187	25,313	25,622
15	86%	86%	86%	86%	86%	86%	86%	86%	86%	86%	8,585	7,924	7,652	7,262	6,869	6,648	6,657	6,641	6,624	6,674
16	247%	247%	247%	247%	247%	247%	247%	247%	247%	247%	1,062	1,037	1,068	1,087	1,063	1,137	1,134	1,149	1,193	1,212
17	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	38,146	38,240	38,074	38,197	38,715	38,795	38,542	38,427	38,554	38,750
18																				
19	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	40,429	43,039	43,424	44,128	44,967	46,420	48,160	48,701	49,337	51,649
20	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	11,226	11,685	11,777	11,802	11,731	11,856	12,064	12,187	12,525	13,006
21	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	9,061	9,394	9,191	8,873	8,740	8,687	8,670	8,714	8,795	9,091
22																				
23	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	5,568	5,783	5,805	5,998	6,029	6,043	6,146	6,163	6,357	6,617
24	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	2,343	2,651	2,807	2,843	3,392	3,507	3,909	4,371	4,722	5,572
25																				
26						400%	400%	400%	400%	400%						5,890	15,732	18,144	15,919	14,211

Notes; Sourced from the Annual Advice

Appendix C. 2 Modelled Scheme size relativities by accident period

Class	Size relativities by accident year									
	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2	105%	105%	105%	105%	105%	105%	105%	105%	105%	105%
3	84%	80%	76%	73%	73%	73%	73%	73%	73%	73%
4	119%	119%	119%	119%	119%	119%	119%	119%	119%	119%
5	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
6	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
7	134%	134%	134%	134%	134%	134%	134%	134%	134%	134%
8	147%	147%	147%	147%	147%	147%	147%	147%	147%	147%
9	116%	116%	116%	116%	116%	116%	116%	116%	116%	116%
10A	111%	111%	111%	111%	111%	111%	111%	111%	111%	111%
10B	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
11	116%	116%	116%	116%	116%	116%	116%	116%	116%	116%
12	173%	173%	173%	173%	173%	173%	173%	173%	173%	173%
13	180%	180%	180%	180%	180%	180%	180%	180%	180%	180%
14	127%	127%	127%	127%	127%	127%	127%	127%	127%	127%
15	178%	178%	178%	178%	178%	178%	178%	178%	178%	178%
16	86%	86%	86%	86%	86%	86%	86%	86%	86%	86%
17	178%	178%	178%	178%	178%	178%	178%	178%	178%	178%
18										
19	224%	224%	224%	224%	224%	224%	224%	224%	224%	224%
20	76%	76%	76%	76%	76%	76%	76%	76%	76%	76%
21	223%	223%	223%	223%	223%	223%	223%	223%	223%	223%
22										
23	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
24	39%	39%	39%	39%	39%	39%	39%	39%	39%	39%
25										
26						103%	103%	103%	103%	103%

Class	Number of claims by accident year									
	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
1	4,463	4,429	4,471	4,603	4,944	5,560	5,467	5,183	4,365	4,511
2	10	10	6	9	6	11	8	5	7	11
3	112	79	78	106	73	87	88	76	51	30
4	134	86	143	111	135	139	136	119	101	80
5	2	2	2	0	0	0	4	2	3	2
6	1,233	1,234	1,298	1,410	1,420	1,832	1,823	1,788	1,536	1,526
7	381	439	396	397	385	486	493	446	322	349
8	6	21	16	21	18	15	18	8	6	19
9	12	10	7	20	8	14	12	8	10	3
10A	40	43	16	40	22	24	28	23	12	8
10B	90	89	67	72	53	96	89	72	58	59
11	56	70	56	47	57	65	44	45	35	20
12	13	13	14	8	26	18	22	17	29	23
13	58	45	65	49	48	47	59	38	54	25
14	1	0	2	3	2	0	1	3	1	0
15	19	16	14	8	11	20	7	10	12	6
16	7	3	5	3	7	6	7	3	2	1
17	17	27	18	25	19	14	21	38	14	24
18										
19	13	8	2	11	18	10	6	5	7	5
20	1	0	0	3	0	0	0	2	0	0
21	2	2	2	1	0	0	0	0	1	1
22	0	0	0	2	1	0	0	0	5	0
23	4	1	1	3	0	1	2	7	2	3
24	2	0	0	0	0	2	0	1	1	0
25										
26							49	86	120	113

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

	Scheme average premium ($, excluding GST, levies)		Claims handling expenses	Acquisition Costs ($)	Reinsurance Cost ($)	ANTS Impact	Profit margin	Insurer average
Underwriting	Floor	Ceiling						filed gross premium ($)
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	195.99	213.30	6.25%	7.98	1.71	-9.1%	7.8%	213.30
Mar-19	191.06	208.37	6.25%	7.98	1.71	-9.1%	7.8%	208.37
Jun-19	190.87	208.14	6.25%	7.98	1.71	-9.1%	7.8%	208.14
Sep-19	200.42	218.85	6.25%	9.97	1.73	-9.1%	7.8%	218.85
Dec-19	207.92	226.34	6.25%	9.96	1.72	-9.1%	7.8%	226.34
Mar-20	206.42	225.71	6.25%	9.96	1.72	-9.1%	7.8%	225.71
Jun-20	200.97	218.41	6.25%	9.96	1.72	-9.1%	7.8%	218.41
Sep-20	204.78	221.52	6.25%	9.96	1.74	-9.1%	7.8%	221.52
Dec-20	199.05	221.58	6.25%	9.96	1.74	-9.1%	7.8%	221.58
Mar-21	198.73	221.26	6.25%	9.96	1.74	-9.1%	7.8%	221.26
Jun-21	191.82	213.42	6.25%	9.96	1.74	-9.1%	7.8%	213.42
Sep-21	189.45	207.16	6.25%	9.96	-	-9.1%	7.8%	207.16
Dec-21	193.59	209.21	6.25%	9.96	-	-9.1%	7.8%	209.21

Notes; Supplied by MAIC

Appendix E Comparison of estimates

E.1 Hindsight estimation of all class risk premiums based on data to 31 December 2021

E.2 Hindsight estimation of all class profitability based on data to 31 December 2021

Appendix E

Appendix E. 1 Hindsight estimation of all-class premiums based on data to 31 December 2021

				0% p.a. superimposed inflation				
Underwriting	Scheme Frequency	Scheme Average size ($)	Profit Margin	Net RP ($)	CHE ($)	Acquisition Costs ($)	Reinsurance Costs ($)	Hindsight Premium ($)
Dec-12	0.179%	95,472	7.75%	155.48	9.41	4.99	5.52	190.13
Mar-13	0.177%	94,469	7.75%	152.17	9.21	4.99	5.52	186.33
Jun-13	0.177%	98,264	7.75%	157.95	9.56	4.99	5.51	192.97
Sep-13	0.175%	99,780	7.75%	159.13	9.63	6.99	4.38	195.26
Dec-13	0.174%	95,695	7.75%	151.77	9.18	6.99	4.37	186.79
Mar-14	0.179%	94,356	7.75%	153.34	9.28	6.99	4.37	188.59
Jun-14	0.180%	93,093	7.75%	152.29	9.21	6.99	4.37	187.38
Sep-14	0.181%	93,186	7.75%	153.28	9.27	6.99	4.35	188.49
Dec-14	0.181%	100,053	7.75%	165.08	9.99	6.99	4.34	202.06
Mar-15	0.182%	103,437	7.75%	171.42	10.37	6.98	4.34	209.33
Jun-15	0.183%	101,839	7.75%	169.83	10.27	6.98	4.34	207.51
Sep-15	0.186%	102,342	7.75%	173.37	10.49	7.98	4.34	212.67
Dec-15	0.195%	99,962	7.75%	177.18	10.72	7.98	4.34	217.03
Mar-16	0.204%	100,780	7.75%	186.51	11.28	7.98	4.33	227.76
Jun-16	0.207%	102,485	7.75%	193.27	11.69	7.98	4.33	235.52
Sep-16	0.210%	101,105	7.75%	193.15	11.69	7.98	4.33	235.38
Dec-16	0.207%	90,800	7.75%	170.48	10.76	7.98	1.71	206.98
Mar-17	0.202%	90,356	7.75%	165.62	10.46	7.98	1.71	201.38
Jun-17	0.203%	90,707	7.75%	167.59	10.58	7.98	1.71	203.64
Sep-17	0.204%	91,372	7.75%	169.22	10.68	7.98	1.71	205.51
Dec-17	0.201%	92,078	7.75%	168.65	10.65	7.98	1.71	204.86
Mar-18	0.200%	91,412	7.75%	166.45	11.44	7.98	1.71	203.35
Jun-18	0.197%	91,968	7.75%	164.30	11.30	7.98	1.71	200.85
Sep-18	0.193%	92,222	7.75%	161.77	11.12	7.98	1.71	197.92
Dec-18	0.190%	96,181	7.75%	166.45	11.44	7.98	1.71	203.34
Mar-19	0.185%	101,003	7.75%	170.07	11.69	7.98	1.71	207.53
Jun-19	0.174%	105,809	7.75%	167.06	11.49	7.98	1.71	204.04
Sep-19	0.163%	107,573	7.75%	159.58	10.97	9.97	1.73	197.56
Dec-19	0.160%	109,587	7.75%	159.45	10.96	9.96	1.72	197.39
Mar-20	0.162%	111,342	7.75%	163.82	11.26	9.96	1.72	202.45
Jun-20	0.170%	112,495	7.75%	174.22	11.98	9.96	1.72	214.50
Sep-20	0.176%	113,937	7.75%	181.86	12.50	9.96	1.74	223.37
Dec-20	0.176%	112,622	7.75%	180.34	12.40	9.96	1.74	221.62
Mar-21	0.177%	113,245	7.75%	182.03	12.51	9.96	1.74	223.58
Jun-21	0.177%	114,673	7.75%	184.34	12.67	9.96	1.74	226.25
Sep-21	0.179%	110,792	7.75%	180.32	12.40	9.96	-	219.71
Dec-21	0.180%	109,045	7.75%	178.71	12.29	9.96	-	217.84

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 2021

	0% p.a. superimposed inflation							
Underwriting	Floor	Ceiling	MAIC Centeral Estimate	Average	Floor ($)	Ceiling ($)	MAIC Centeral Estimate	Average ($)
Dec-12	29%	39%	34%	39%	73.07	110.23	92.14	110.20
Mar-13	32%	41%	37%	41%	81.32	118.44	100.39	118.42
Jun-13	32%	39%	36%	39%	83.07	115.13	102.11	115.11
Sep-13	29%	37%	34%	37%	73.76	105.54	92.65	105.54
Dec-13	34%	41%	38%	41%	88.49	120.27	107.34	120.27
Mar-14	32%	41%	36%	41%	81.03	118.77	99.88	118.77
Jun-14	33%	41%	37%	41%	83.66	121.38	102.52	121.04
Sep-14	32%	41%	37%	41%	82.70	119.33	101.31	118.99
Dec-14	27%	36%	32%	36%	69.67	106.28	88.27	105.83
Mar-15	24%	34%	29%	34%	60.74	99.16	79.45	98.70
Jun-15	25%	34%	30%	33%	62.16	100.55	80.85	96.37
Sep-15	21%	31%	26%	31%	50.62	89.04	69.37	87.22
Dec-15	19%	30%	25%	30%	47.61	85.05	66.32	84.66
Mar-16	14%	26%	20%	26%	34.39	74.67	53.09	74.29
Jun-16	14%	25%	20%	25%	34.06	74.33	52.76	73.95
Sep-16	11%	24%	17%	24%	26.91	67.14	45.59	67.14
Dec-16	16%	24%	23%	24%	37.13	61.48	55.63	61.48
Mar-17	18%	26%	24%	26%	41.74	66.05	60.19	65.16
Jun-17	12%	21%	19%	21%	25.44	48.83	42.96	48.83
Sep-17	7%	15%	14%	15%	14.36	32.60	30.57	32.60
Dec-17	8%	15%	14%	15%	15.74	34.02	32.00	34.02
Mar-18	10%	17%	16%	17%	20.07	38.35	36.33	38.35
Jun-18	11%	18%	17%	18%	22.04	40.29	38.50	40.29
Sep-18	9%	17%	16%	17%	17.87	36.13	34.07	36.13
Dec-18	4%	12%	11%	12%	8.40	25.72	23.68	25.72
Mar-19	0%	8%	7%	8%	- 0.39	16.92	14.87	16.92
Jun-19	1%	10%	9%	10%	2.64	19.91	17.90	19.91
Sep-19	9%	17%	16%	17%	18.17	36.60	34.66	36.60
Dec-19	12%	20%	19%	20%	25.83	44.25	42.29	44.25
Mar-20	10%	17%	17%	17%	19.66	38.95	37.02	38.95
Jun-20	2%	9%	9%	9%	3.10	20.54	18.62	20.54
Sep-20	-1%	7%	7%	7%	- 1.27	15.46	15.38	15.46
Dec-20	-3%	8%	5%	8%	- 5.39	17.14	11.27	17.14
Mar-21	-4%	7%	4%	7%	- 7.52	15.02	9.15	15.02
Jun-21	-9%	2%	-1%	2%	- 16.89	4.71	- 1.19	4.71
Sep-21	-7%	2%	1%	2%	- 13.23	4.48	1.39	4.48
Dec-21	-4%	4%	4%	4%	- 7.37	8.26	8.20	8.26

Notes; Derived from previous appendices

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