Queensland CTP Market Briefing

Review of the risk premium for the 2022Q3 underwriting quarter

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In this briefing

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Risk Premium

Each quarter, Taylor Fry gives advice to MAIC to assist in its role of setting a pricing band for the QLD CTP Scheme (the CTP Scheme). This market briefing is intended to summarise Taylor Fry's latest advice to MAIC. We suggest that the first-time reader reviews Section 6 before the remainder of this briefing to understand Taylor Fry's role and the structure of our advice.

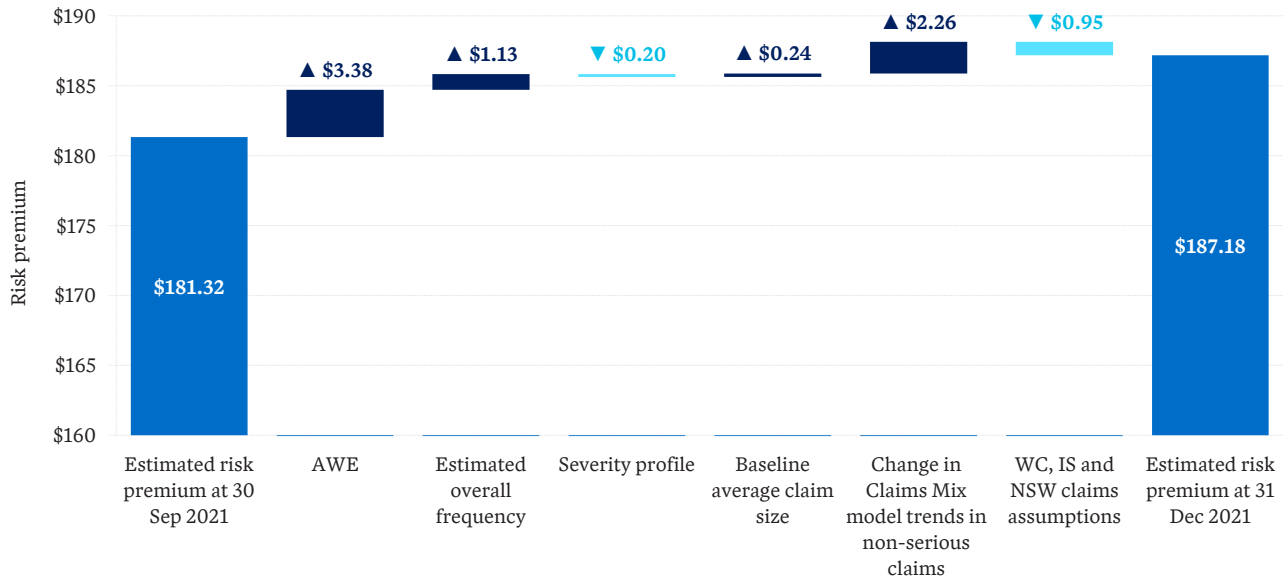
1.1 Risk premium and change since last review

Taylor Fry's **estimated** risk premium is **$187.18** which is **$5.86 higher** than our estimate made at the previous review. The estimate is in Dec-21 dollars before the application of inflation and discounting. The main contributors to the increase in estimated risk premium are:

- An increase in **Average Weekly Earnings** (AWE) for QLD. Since benefit levels have historically been tied to earnings, we base our estimated risk premium on current and projected Average Weekly Earnings. The latest ABS release of AWE showed a significant increase in AWE over the last six months.
- An increase in our **core claim frequency** assumption driven by higher-than-expected experience over the accident quarter.
- An increase in baseline **average claim size** driven by higher-than-expected experience and a reduced allowance for trends in average claim size for non-serious claims.
- A slight weakening of the **severity profile.**
- A decrease in non-core risk premium after more weight has been given to recent claims experience.

Figure 1 shows the sizes of the most important changes.

Figure 1– Change in estimated risk premium since the Sep-21 review



1.1.1 Components of risk premium

Our estimate is a combination of the risk premium relating to core claims, workers compensation, interstate sharing and NSW postcode claims. The baseline core claims risk premium is based on our estimate of core claims frequency, which typically relies on the notifications experience from the most recent accident periods, and our estimate of core claim size which relies on a reasonably long history of finalised claim sizes. In addition to this, our estimated risk premium incorporates an overlay to allow for trends in the average claim size of small non-serious claims. Table 1 shows the components of our risk premium estimate.

Table 1 - Estimated risk premium at 31 December 2021

	Risk premium component		
	Frequency	**Average claim size ($)**	**Risk premium ($)**
Core claims			
Baseline	0.1580%	112,592	177.89
Overlay: trends in non-serious claims		-579	-0.91
Estimated core claims		112,013	176.98
NSW accident postcode claims	0.0060%	134,444	8.12
Interstate sharing	0.0015%	66,644	1.00
Workers' compensation recovery	0.0144%	7,445	1.07
Estimated risk premium at 31 Dec 2021	**0.1800%**	**103,989**	**187.18**

1.1.2 Risk premium uncertainty

Our risk premium estimate for the 2022Q3 underwriting quarter is highly uncertain. As an illustration of this uncertainty:

- There is approximately one in four chance that the actual risk premium will be *more* than 7.5% higher than our risk premium estimate.
- There is approximately one in four chance that the actual risk premium will be *less* than 7.5% lower than our risk premium estimate.

More details on this uncertainty are found in Section 5.

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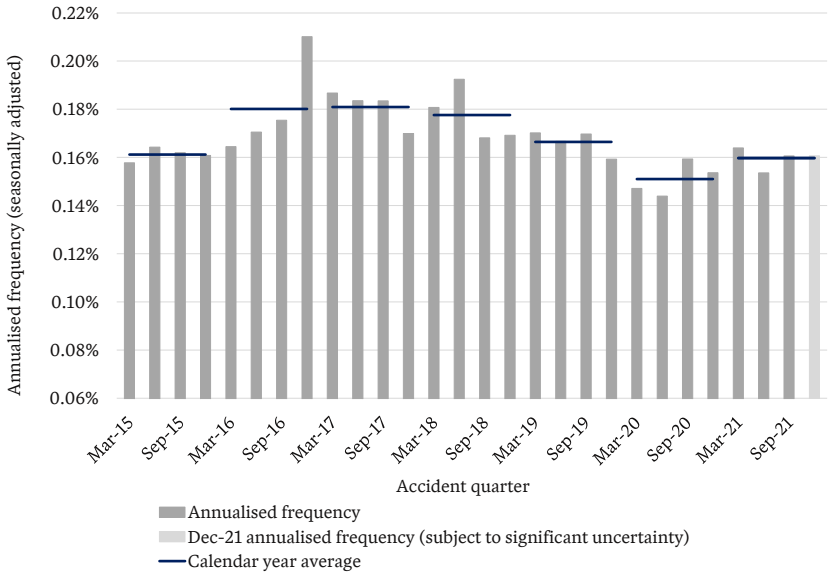
Frequency

Typically, we review the core claim frequency model at each annual review, but the experience is monitored quarterly, and changes are made if necessary. In this annual review, we have recalibrated our projection models so that our estimated frequency is set using post-claim farming reform notification experience, allowing for the impact of COVID related shutdowns and the apparent change in notification patterns. The frequency assumption and severity profile were previously revised in Sep-21. This section outlines the assumptions for core claim frequency.

2.1 Core claim frequency

Figure 2 - Estimated annualised core claim frequency as at 31 December 2021

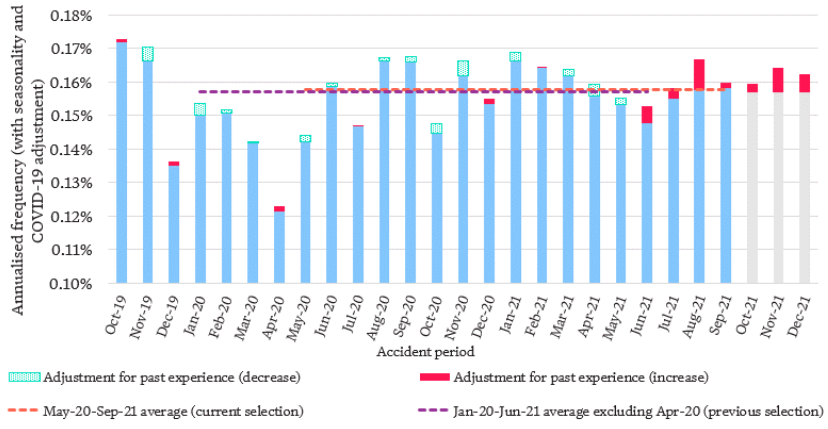


This figure shows the projected ultimate annualised baseline frequency for each historical accident quarter after allowing for seasonality and removing the estimated impact of COVID-19.

Core claim frequency decreased in the early part of 2020 following the introduction of the claim farming reforms. The true reduction in frequency post-claim farming reform is difficult to estimate due to a change in the notification pattern and the COVID impacted traffic volumes.

Following this drop, claim frequency has settled to a more stable level.

Figure 3 – Estimated core claim frequency as at 31 December 2021



Our current estimate of frequency incorporates experience from May-20 to Sep-21 accident periods. This leads to a 1% increase from the previous estimated frequency. This increase is driven by the exclusion of lower frequency accident months from Jan-20 to Mar-20 in the averaging period used to set the frequency assumption.

3

Severity Profile

3.1 Core claim severity profile

We typically review the severity profile formally every year but monitor experience quarterly, so MAIC can revise the severity profile if deemed appropriate. At this annual review, we have continued to estimate the core claim severity profile directly from the post-claim farming experience as we have a sufficient volume of developed experience for this period.

This section outlines the assumptions for the baseline severity profile.

Legally represented severity 1 claims (severity 1Y) represent 70% of core claim notifications and 52% of the core risk premium. While there are relatively few high severity claims, these have higher average claim sizes.

Table 2 – Baseline severity profile

Severity	Previous review (Sep-21)	Current review (Dec-21)	Movement
1N	7.3%	7.4%	0.08%
1Y	69.8%	69.8%	-0.03%
2	12.2%	12.2%	-0.02%
3	5.8%	5.8%	-0.03%
4	0.9%	0.9%	0.01%
5	0.4%	0.4%	0.00%
6	1.0%	1.0%	-0.02%
9NA	2.5%	2.5%	0.01%
Total	100%	100%	

At this annual review we have continued to estimate the core claim severity profile directly from the post-claim farming experience as it is now sufficiently developed.

Our adopted severity profile is largely unchanged from the previous review. A small weakening occurred as the frequency increase over the quarter was mostly attributed to lower severities. In addition, higher-than-expected experience in severity 1N and lower-than-expected experience in pre-claim farming accident periods for severity 2 caused small revisions.

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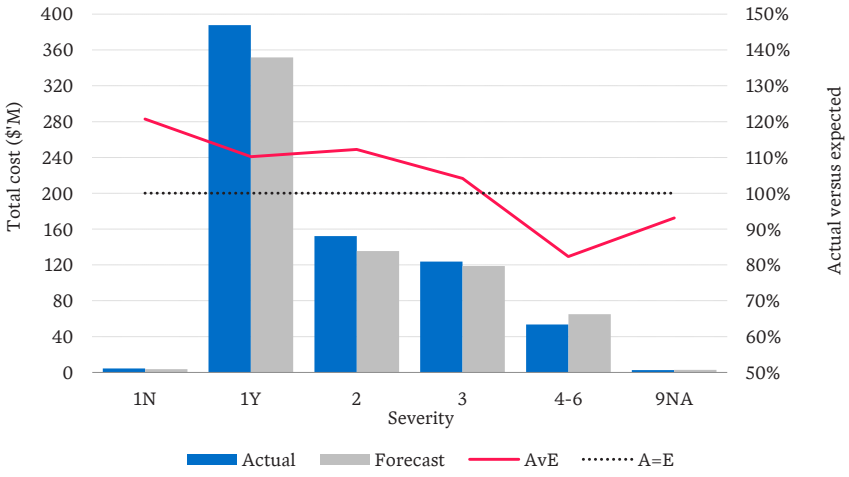
Average claim size

4.1 Baseline core average claim size

Taylor Fry reviews the average claim size by severity every quarter based on the payments to finalised claims. In this section, we compare the recent experience to our assumptions and show the resulting projected average claim size by accident quarter.

The baseline core average claim size has increased slightly since the previous review driven by higher-than-expected experience in severities 1Y and 2, offset by lower-than-expected experience in severity 3 finalisations from older accident periods.

Figure 4 – Finalisation experience by severity in 2021 against Dec-20 model



Actual cost for claims finalised in 2021 was 7% higher than expected at Dec-20.

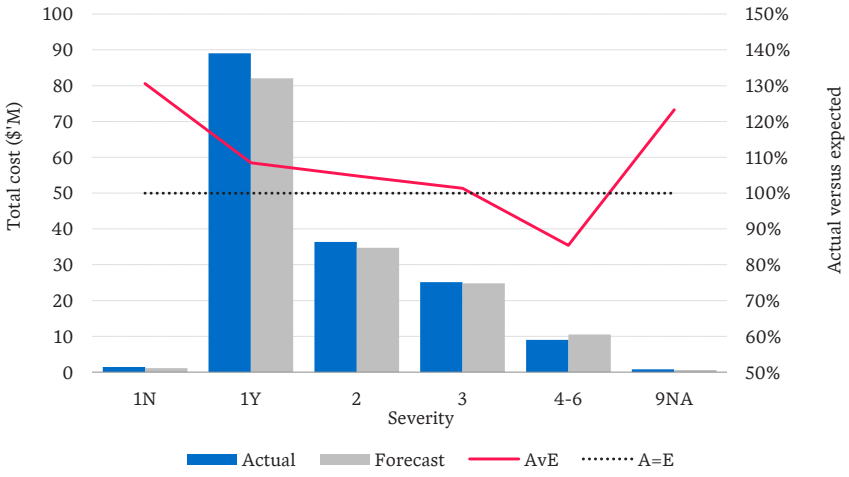
Severity 1Y claims have finalised for 10% higher than forecast.

Severity 2 claims have finalised fo 12% higher than forecast.

Severity 3 claims have finalised fo 4% higher than forecast.

Severity 4-6 claims have finalised for 18% lower than forecast.

Figure 5 – Finalisation experience by severity in Dec-21 against Sep-21 model



Actual cost for the Dec-21 quarter across all severities was 5% higher than expected by our Sep-21 model.

Severity 1Y claims have finalised for 8% higher than forecast.

Severity 2 claims have finalised for 5% higher than forecast.

Severity 3 claims have finalised for 1% higher than forecast overall, however, the experience of finalisations from older accident periods has been lower than expected, driving the decrease in baseline average claim size estimate for Severity 3 since the last review.

Severity 4-6 claims have finalised for 15% lower than forecast.

Table 3 – Change in baseline average claim size by severity excluding changes in SP ($'000, adjusted for inflation)

	Severity								All
	1N	1Y	2	3	4	5	6	9NA	
Baseline at Sep-21	8	84	167	353	629	965	307	13	**112**
Baseline at Dec-21	8	84	170	347	626	960	301	13	**113**
Change in baseline	+4.1%	+0.5%	+1.6%	-1.8%	-0.6%	-0.5%	-1.8%	+1.4%	**+0.1%**

Figure 6 – Average claim size by finalisation quarter

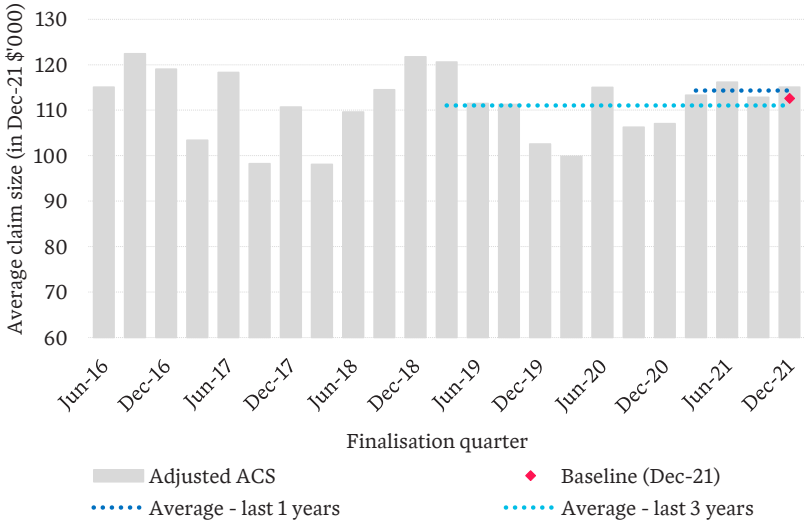
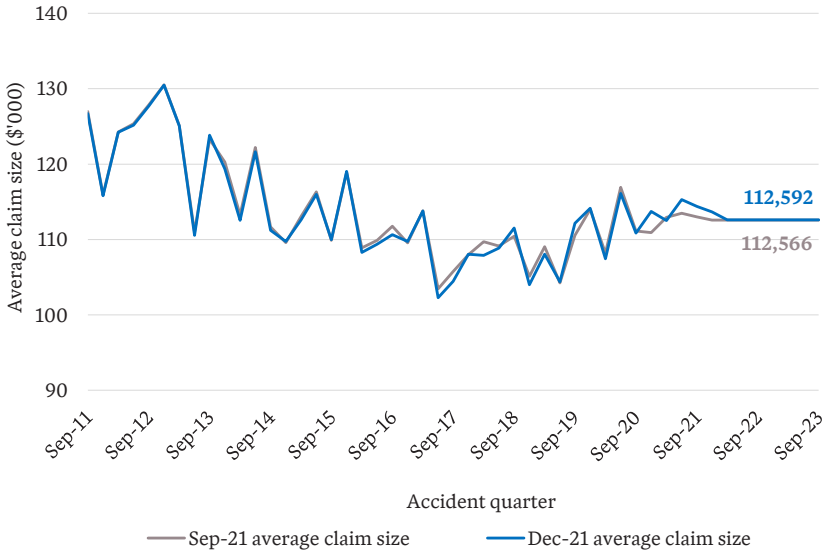


Figure 6 shows historical finalized claim sizes by finalisation quarter standardised for severity profile and stage of claim development.

Our current estimate of claim size gives is roughly equivalent to the average experience over the last two years and gives partial weight to the high experience over the last finalisation year.

Figure 7 –Projected average claim size by accident quarter (all severities) ($'000, adjusted for inflation)



The projected baseline average claim size has increased slightly from the previous review. The current estimate is $112,592.

4.2 Overlay: trends in small non-serious claims

We have continued to allow for the decreasing trend in average claim size for small non-serious claims through the claims mix model overlay. The weight given to this model has been reducing gradually over the last several reviews as the impact of this trend is absorbed into the estimates of our baseline average claim size. At this review we continue to recognise this trend but have given it a much lower weight due to greater uncertainty about its impact.

Currently, our advice regarding emerging claim size is informed primarily by the **size of finalised claims**. This is a proven and robust methodology and is established actuarial practice. However, it can be slow to recognise changes to the mix of claims or changes to the management/settlement environment, especially when the claims affected have not yet finalised. One way we monitor the impact of claims mix changes is through a **separate claim mix model** which responds to the mix of claims yet to be finalised, such as legal representation, accident circumstance and hospitalisation.

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 and continuing trend in the size of all legally represented, non-serious claims. In the last several reviews, we have decreased our average claim size assumption to allow for these trends, however the weight given to these trends has been gradually reducing as their impact is absorbed into the estimates of our baseline average claim size model.

Table 4 Average claim size of core claims

	Average claim size ($)
Baseline at Dec-21	112,592
Overlay: Claims mix model trend	-579
Estimated at Dec-21	**112,013**

4.3 Psychological claims

In recent accident years there has been a trend of increasing proportions of claims with psychological injury coding (psychological claims) and faster coding of psychological injuries with the expected proportions for accident years 2018 and 2019 much higher than 2017. To date, the increasing proportion of finalised psychological claims are not placing cost pressures on AY2018 and AY2019 relative to AY2017. A prospective view of costs in AY2018 and AY2019 made using insurer cases estimates – but excluding the experience of one insurer whose cases estimate development has been unstable and out of line with the rest of industry – is consistent with the view obtained from finalised claims.

Psychological claims have historically finalised for higher costs compared to non-psychological claims so the observed increase in the proportion of psychological claims and the faster coding of psychological injuries could place cost pressures on the Scheme.

However, the finalised average claim size for AY2018 and AY2019 are developing lower than would be expected given their higher proportion of psychological claims (Figure 8) mainly due to lower observed average claim sizes for non-psychological claims (Figure 9) and anxiety/depression claims (Figure 10) which make up the majority of psychological claims (73% of claims incurred in AY2018).

Figure 8 – Actual development of finalised claim size versus finalised claim size expected from the increasing proportion of psychological claims

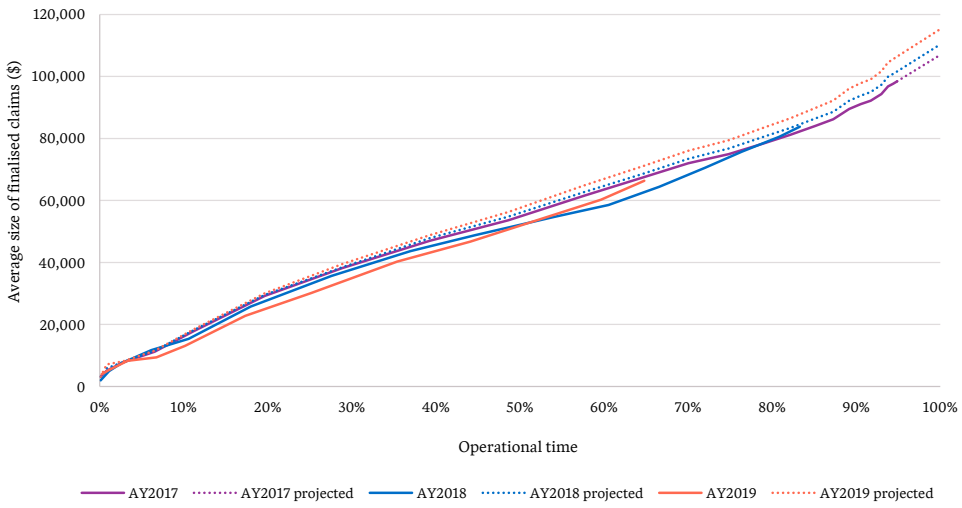


Figure 9 – Finalised average claims size for psychological and non-psychological claims

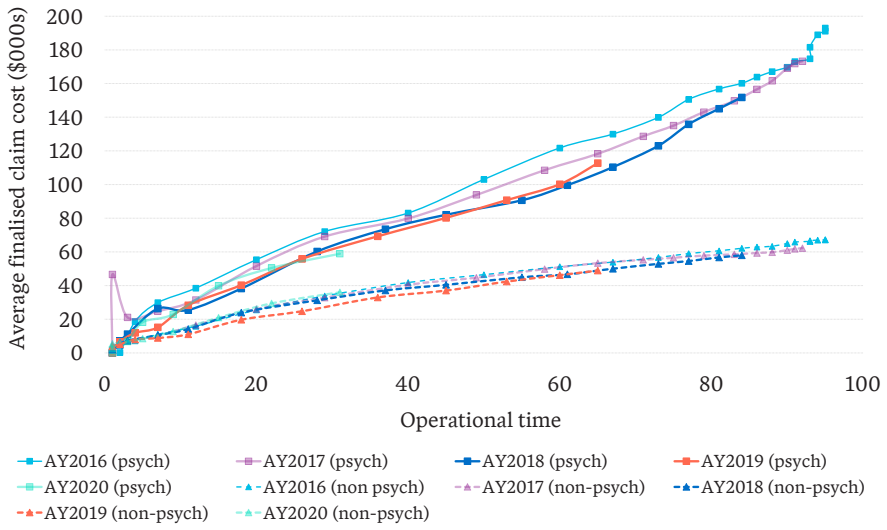
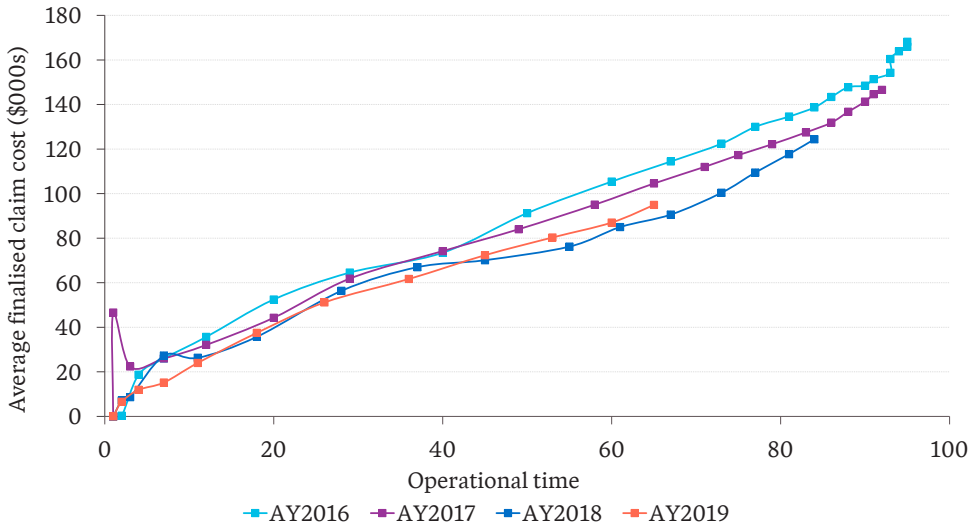
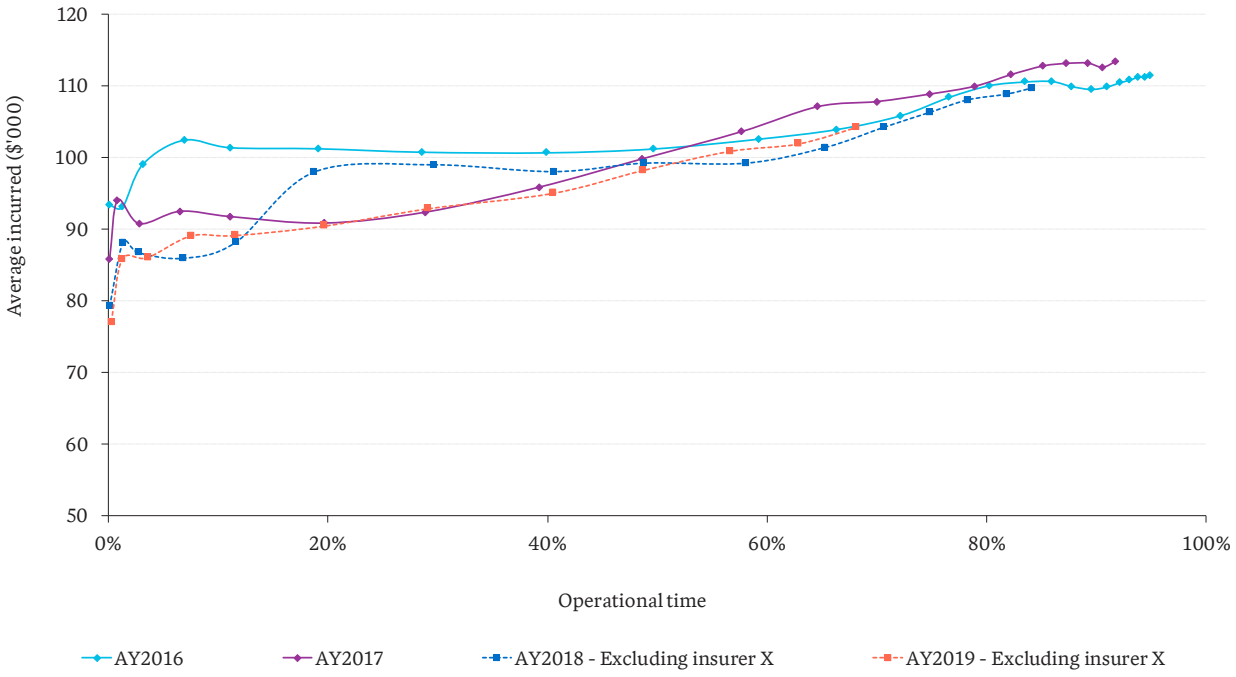


Figure 10 – Finalised average claims size for anxiety/depression claims



In addition, an analysis of incurred costs – which takes into account the costs of finalised claims as well as payments and insurer's case estimates on open claims – indicates that average claim sizes for AY2018 and AY2019 are emerging similar to AY2017 despite the higher proportion of psychological claims (Figure 11). Note that Figure 11 excludes one insurer's incurred costs for AY 2018 and later as their cases estimate development has been unstable and out of line with the rest of industry for these years.

Figure 11 – Average incurred cost development[1]



In summary, our analysis of finalised claims experience and incurred loss experience is yet to identify a cost impact of the higher proportion of psychological claims in more recent accident years. We note that there has been an increasing proportion of PTSD claims in recent accident years. While on average PTSD claims finalise at higher average costs than other psychological claims, our analysis suggests that no specific allowance is required for these claims at this stage. We will continue to monitor the emerging claims experience and we will adjust our advice as necessary.

[1] In this figure we have scaled past incurred cost data for the expected cost differences between accident years so that they are on a like for like basis in terms of severity mix.

5

Risk Premium Uncertainty

There is considerable uncertainty in the assumptions underlying our risk premium estimate. We provide risk premium impacts for a range of plausible alternative scenarios.

5.1 Business as usual variation

Our risk premium estimate is highly uncertain. This uncertainty has two main sources:

- Risk premium evolution – the average claim for underwriting quarter 2022Q3 will finalise around four years after the date of the data available to estimate the risk premium. Historically there have been large movements in the risk premium over a four-year period. In general, these movements are not predictable in advance.
- Historical risk premium estimation uncertainty – even for past underwriting quarters where a good volume of finalised claims data is available, there is considerable uncertainty in relation to the cost of 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 will fall within the range:

- Estimated risk premium +/-7.5%, or equivalently
- Estimated risk premium +/-$14.

5.2 Key uncertainties

In addition, we have identified several key uncertainties that could impact the risk premium. These are summarized in Table 5 and described below.

Table 5 Change in estimated risk premium for plausible alternative scenarios

Risk premium scenarios	Impact on estimated risk premium
Business as usual variation	
Estimated risk premium +/- 7.5%	+$14 / -$14
Frequency scenarios	
Core claim frequency develops in line with AY2021	+$2.0
Transitions from Sev1Y to Sev2 remain low	-$1.2
Severity 3+ frequency +/- 3%	+$1.5 / -$1.5
Reversion to pre COVID-19 traffic volumes	+$3.0
Decrease in traffic volumes from increasing public transport use in the future	-$8.8
Average claim size scenarios	
ACS across all severities emerges similar to the finalisation experience over the last 12 months	+$2.8
ACS across all severities emerges similar to the finalisation experience over the last 3 years	-$2.5
Removal of the allowance for the trends in the Claims Mix Model	+$0.9
Lapsed rates continue to emerge similar to the experience over AY2019	-$0.9
Psych claims scenarios	
Outstanding anxiety claims settle for 5% more in 2019 than 2017	+$1.8
Outstanding anxiety claims settle for 5% less in 2019 than 2017	-$1.8

5.2.1 Core claim frequency emerges differently than allowed for

Our core claim frequency assumption is uncertain as the recent experience has been volatile and our adjustments for the impact of COVID-19 are highly uncertain. Because of this uncertainty we base our core claim frequency selection on an 18-month average[2], excluding the last 3-months as these recent months are not sufficiently developed. However, if we were to set our core frequency assumption in line with AY2021 experience alone then the risk premium would increase by $2.0.

5.2.2 Severity profile emerging differently than allowed for following the claim farming reforms

For this review, we have continued to utilise post-claim farming reform experience to set our core claim severity profile assumptions. One uncertainty in the post-claim farming reform experience is that the proportion of severity 2 claims have been unusually low due to a significant drop in claim transitions from severity 1Y to severity 2. We have assumed that the reduction in transitions is a temporary effect likely due to operational changes and will not continue into the future. If transitions from severity 1Y to severity 2 continue to remain low in the future, the reduction in severity 2 claim proportion would result in a $1.2 *reduction* in risk premium.

There is also significant uncertainty around the frequency of high severity claims, which has historically been very volatile. Disruptions to the notification pattern over the 2020 notification period added additional uncertainty to the frequency of high severity claims. If the frequency for high severity claims is too low by 3%, then our risk premium estimate will *increase* by $1.5. Conversely, if our frequency is too high by 3%, then our risk premium estimate will *decrease* by $1.5.

5.2.3 COVID-19 and the estimated impact on risk premium

There is considerable uncertainty around the continuing impact of COVID-19 on future traffic volumes. On one hand, STREAMS traffic volume data suggests that traffic volumes are still slightly depressed relative to 2019. On the other hand, Queensland Apple mobility data suggests that public transport use has declined, with private vehicle use substituting for public transport.

If there was a reversion to pre COVID-19 traffic levels in future underwriting periods then the premium impact would be *plus* $3.0.

Alternatively, if the substitution of private vehicle use for public transport was to reverse causing a 5% decrease in traffic volumes, then the risk premium would reduce by $8.80.

5.2.4 The core average claim size emerges differently than allowed for

Core average claim size experience has historically been very volatile. To provide accurate claim size estimates in the face of this volatility we base our core claim size assumptions on averaging periods of two years and greater. This means we have not fully responded to the higher than forecast experience that has emerged over the last year. If future average claim sizes emerge at levels similar to experience over the last 12 months, then our risk premium estimate will be *too low* by $2.8. However, if future average claim size emerges at levels similar to experience over the last 3 years, then our risk premium estimate will be *too high* by $2.5.

5.2.5 Uncertainty in the claims mix model allowance

There is a considerable amount of uncertainty around the appropriate allowance to make for the decreasing trends in the average claim size of non-serious claims as outlined in Section 4.3. Because of this uncertainty, we have given these trends considerably less weight at this review compared to previous reviews. However, if the claims mix model allowance was removed completely, our risk premium estimate would *increase* by $0.9.

[2] For this review (and recent reviews) we have excluded the month of Apr-20 in our averaging period as it was heavily impacted by COVID-19 related lockdowns.

5.2.6 The proportion of lapsed claims emerges higher than allowed for

The proportion of lapsed claims has increased markedly in recent accident years. We estimate that allowing for this increase would reduce our risk premium estimate by around $0.9. No specific allowances have been added at this review due to potentially offsetting uncertainties around the cost impact of psychological claims and trends in small non-serious claims.

5.2.7 Finalised costs for psychological claims emerge differently than allowed for

The eventual cost impact of the higher proportions of psychological claims in recent years is highly uncertain. If open anxiety claims were to eventually settle for 5% more than current case estimates suggest then our risk premium estimate would *increase* by $1.8. Alternatively, if they were to settle for 5% less, then our risk premium would *reduce* by $1.8.

6

Structure of Risk Premium advice

6.1 Structure of Taylor Fry's advice to MAIC

This section describes the components of our advice to MAIC as well as the role of this advice in MAIC's premium setting process.

The **prescribed floor and ceiling premiums** for each underwriting quarter are calculated and set by **MAIC**, based on several inputs, including estimates of the average **risk premium** for the scheme**.** Taylor Fry estimates the components of the risk premium for the Queensland CTP scheme for each underwriting quarter and advises MAIC on these components.

In estimating the risk premium for each underwriting quarter, we consider **"core"** claims separately from workers' compensation recovery (WC), interstate sharing (IS) and NSW accident postcode (NSW) claims. Each component is separated into the **frequency** of claims per registered vehicle and **average claim size**. These components make up the baseline risk premium.

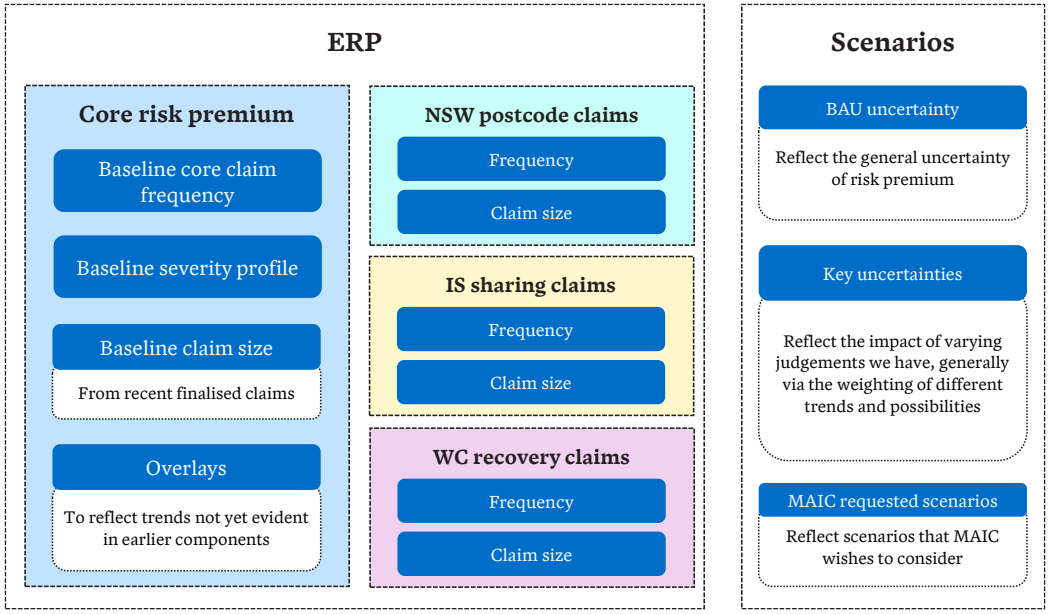
Our Estimated Risk Premium (ERP) for a given future underwriting quarter is comprised of our **baseline risk premium estimate** and **overlays**. The ERP reflects **risk premium** implied by **the most recent past accident periods**, adjusted for the impact of changes which meet the following criteria:

- Evidence of the change can be seen in the data
- The change is quantifiable with reasonable certainty
- We are reasonably confident that the change will continue into the future up until the time most of the cost of claims for the underwriting quarter has been paid.

The risk premium of recent accident years is captured in the baseline risk premium estimate and the other adjustments are made through the overlay component.

There is a large degree of **uncertainty** and **reliance on judgment** apparent in the overlays as they reflect our view of changes to the scheme experience occurring in either the very recent past or the future; the prescribed premiums are set for an accident period approximately one year in the future with claims settling on average 3 years after that.

In addition to the ERP, we provide MAIC with a series of scenarios focusing on key uncertainties in the ERP which reflect potential alternative scenarios relating to possible changes to underlying components of risk premium. Our ERP and scenarios are inputs for MAIC to utilise in their pricing process. We do not expect that MAIC will necessarily adopt our ERP or a risk premium that is within the range covered by our scenarios.



We consider it proper for MAIC to adopt a risk premium different to our ERP based on:

- Adopting a combination of provided scenarios which they consider to be the most likely to occur
- Their anticipation of future changes to the risk premium which we have not allowed for in our ERP or scenarios.

A

About the Market Briefing

A.1 About the Market Briefing

This report, alongside the accompanying market briefing and associated insurer annex spreadsheet, is provided by Taylor Fry to Queensland Motor Accident Insurance Commission (MAIC) for distribution to QLD CTP insurers each quarter.

Key definitions

Claim	All claims recorded as notified in the Scheme data, other than Nominal Defendant claims, but specifically including those for nil or trivial amounts.
Claim Severity	Claim severity refers to our severity band under which a claim falls under, which is a categorisation based on the maximum injury severity score of the claim and the status of the claim's legal representation.
Core claims	Claims excluding those categorised as workers' compensation recovery, interstate sharing claims or NSW accident postcode claims.
Operational time	The rank order of claims finalised from an accident quarter. For example, the first claims finalised have operational times near 0% and the last claims finalised have operational times near 100%.
Interstate sharing claims (IS) claims	Interstate sharing (IS) claims involve one party from Queensland and another from a different state. In some of these cases the claim cost is shared between schemes. These claims are managed by an interstate insurer. They are identified in the database by means of a specific injury code. Claims with a NSW accident postcode are excluded.
Workers' compensation recovery (WC) claims	Workers' compensation recovery (WC) claims are those notified to insurers by a workers' compensation insurer/authority. They have been identified separately in the database since 2009Q1 by means of a specific injury code. Claims with a NSW postcode are excluded.
NSW accident postcode claims	Claims with a NSW accident postcode, including those categorised as core, workers' compensation recovery and interstate sharing claims. They are identified in the database by means of accident postcodes.
Claim frequency	Number of claims per registered vehicle.
Severity profile	The severity profile refers to the final proportion of claims related to each claim severity.
Average claim size	Average size of claims with non-zero cost.
Risk Premium (RP)	Risk premium refers to the average premium required to cover claim costs which is calculated as the total ultimate claim costs of a period divided by the number of registered vehicles. This is equivalent to claim frequency multiplied by average claim size for each severity, summed across all claim severities.
Estimated risk premium (ERP)	The ERP refers to our estimate of risk premium that reflects claims costs for the most recent past accident periods, to the extend we can reliably measure them, adjusted for the impact of changes we are reasonably confident will occur up until the time most of the cost of claims for the underwriting quarter has been paid.
Claim farming reforms	On 5 December 2019, new legislation commenced which aims to stop the practice of insurance car crash scamming (commonly known in the industry as 'claim farming'). 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.

TAYLOR FRY