



Queensland CTP Market Briefing

Review of the risk premium for the
2021Q4 underwriting quarter

Peter Mulquiney and Soroush Amirabadi

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

Taylor Fry Pty Ltd



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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.

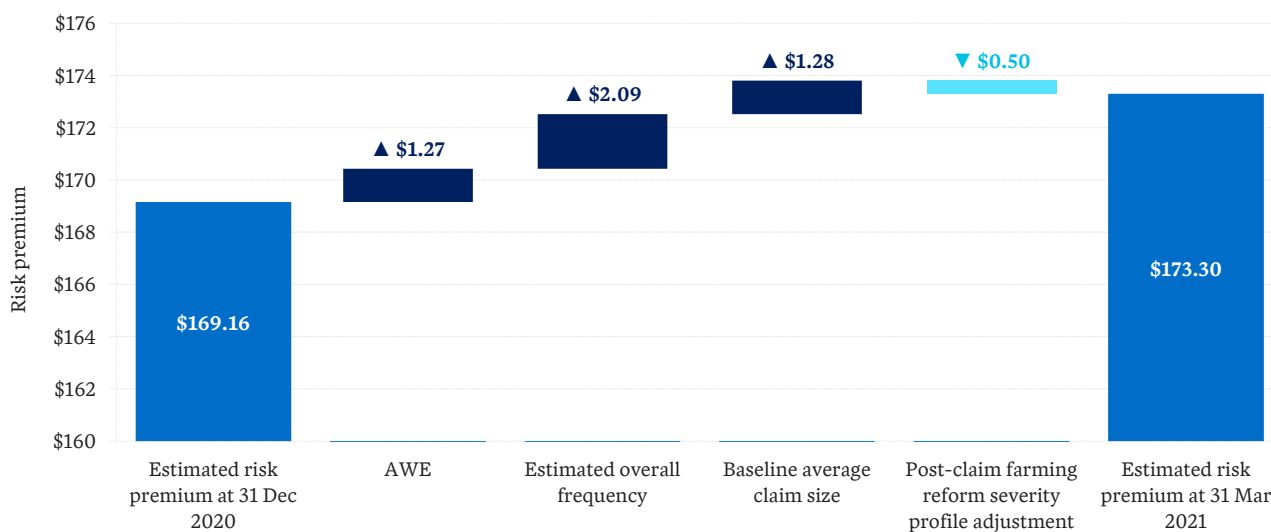
Risk premium and change since last review

Taylor Fry’s **estimated** risk premium is **\$173.30** which is **\$4.14 higher** than our estimate made at the previous review. The estimate is in Mar-21 dollars before the application of inflation and discounting. We have assumed that the impacts of COVID-19 related shutdowns on claim frequency over 2020 will not apply to the exposure periods of the 2021Q4 underwriting quarter. The main contributors to the increase in estimated risk premium are:

- An increase in our **core claim frequency** assumption. Since the introduction in December 2019 of legislation intended to limit claim farming in the Scheme, there has been a significant reduction in claim frequency. At the Dec-20 annual review, we estimated the impact of the claim-farming reforms to be an 11% decrease in core claim frequency based on post-claim farming experience adjusted to remove the impact of COVID-19. However, in response to higher than forecast claim notification experience over 2021Q1 we are now forecasting a 10% decrease in core claim frequency due to the claim-farming reforms.
- An offsetting weakening of the **severity profile**. The frequency increase estimated at this review is assumed to result from less low severity claims exiting the scheme than assumed at the Dec-20 annual review.
- An increase in **Average Weekly Earnings** (AWE) for QLD. Since benefit levels have historically been closely tied to earnings, we base our estimated risk premium on current and projected Average Weekly Earnings.
- An increase in baseline **Average claim size** driven by several large Severity 1Y finalisations over the quarter.

Figure 1 shows the sizes of the most important changes.

Figure 1– Change in estimated risk premium since the Dec-20 review



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 several overlays that aim to reflect lead indicators of claim size, frequency and severity profile. Table 1 shows the components of our risk premium estimate.

Table 1 Estimated risk premium at 31 December 2020

	Risk premium component		
	Frequency	Average claim size (\$)	Risk premium (\$)
Core claims			
Baseline	0.1530%	105,404	161.27
Overlay: Post claim-farming reform severity profile		3,068	4.69
Overlay: claims mix trend		-2,210	-3.38
Estimated core claims	0.1530%	106,262	162.58
NSW accident postcode claims	0.0060%	129,254	7.81
Interstate sharing	0.0026%	65,674	1.71
Workers' compensation recovery	0.0123%	9,775	1.20
Estimated risk premium at 31 March 2021	0.1740%	99,598	173.30

Risk premium uncertainty

Our risk premium estimate for the 2021Q4 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.

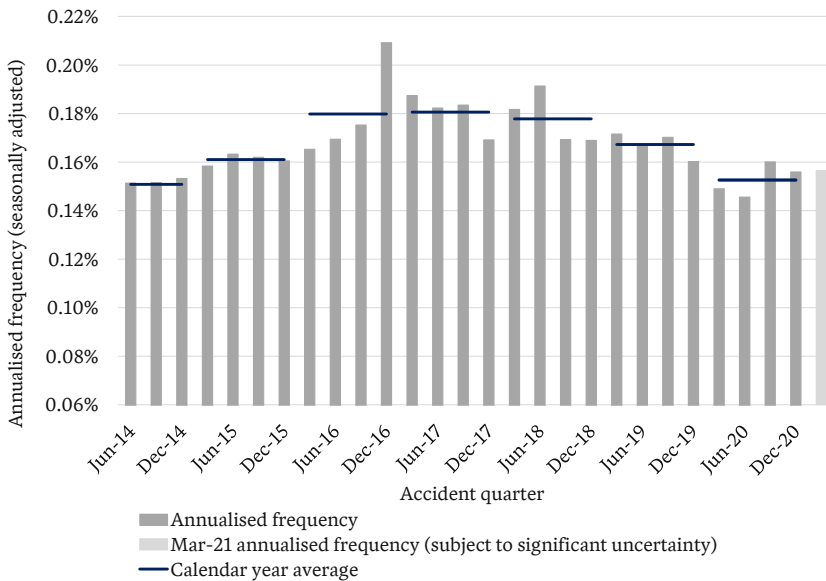
More details on this uncertainty are found in Section 5.

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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 quarterly review, we have updated the core claim frequency assumption. The frequency assumption and severity profile were previously revised in Dec-20. This section outlines the assumptions for core claim frequency.

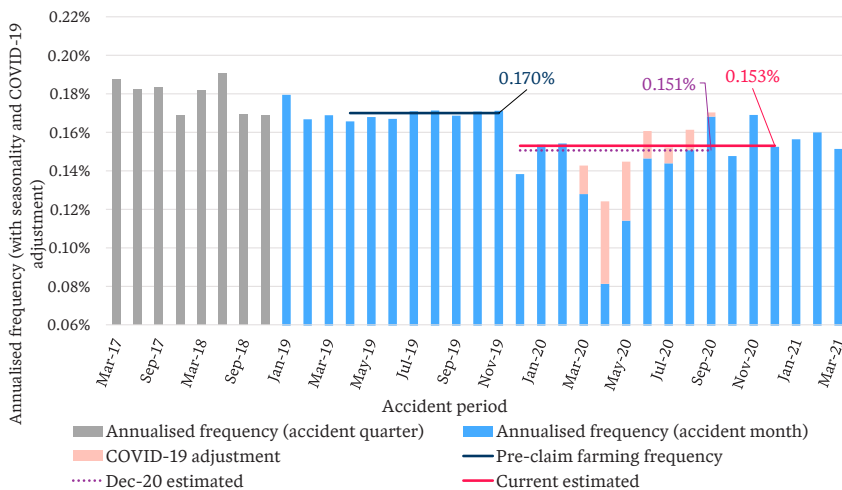
Figure 2 - Estimated annualised core claim frequency as at 31 March 2021



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 notifications have shown a marked decrease after the Nov-19 accident month. The true reduction in frequency post-claim farming reform is difficult to estimate due to a delay in notification and the reduced traffic volumes after Mar-20 due to COVID19 related shutdowns. As per the annual review, we have allowed for both factors but these allowances are highly uncertain.

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



Our current estimate of frequency incorporates experience from Dec-19 to Dec-20 accident periods excluding the Apr-20 accident month. This leads to a 1% increase from the previous estimated frequency.

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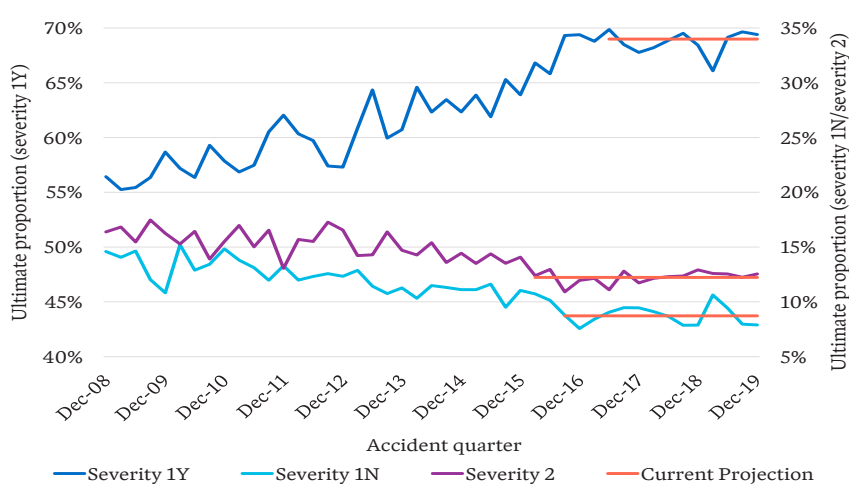
Severity Profile

3.1 Baseline 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. The significant reduction in frequency and change in notification pattern in the 2020 accident year has led to additional difficulties in estimating the severity profile for the most recent accident year. Our current severity profile assumption is estimated using a two-stage process. First, we estimate the baseline (i.e. pre-claim farming reform) severity profile using experience up to the Dec-19 accident month. We then make an allowance for impact of the post-claim farming reform frequency reduction on the severity profile through our severity profile overlay which is discussed in the next section. At this quarterly review, we have maintained the same baseline severity profile as at the annual review.

This section outlines the assumptions for the baseline severity profile.

Figure 4 – Historical frequency of less severe claims as a proportion of overall frequency



Prior to the claim farming reforms, the core claim severity profile was stable for a few years.

Severities 1N, 1Y and 2 – the less severe claims – have been a stable proportion of the total core claim frequency since 2017 while Severities 3 to 6 – the more severe claims – have had stable frequencies since 2013.

We have calibrated our baseline severity profile assumptions using the pre-claim farming reform frequency of 0.1700%.

Table 2 – Baseline severity profile

Severity	Previous review (Dec-20)	Current review (Mar-21)	Movement
1N	8.7%	8.7%	0.0%
1Y	69.0%	69.0%	0.0%
2	12.2%	12.2%	0.0%
3	5.5%	5.5%	0.0%
4	0.9%	0.9%	0.0%
5	0.4%	0.4%	0.0%
6	0.9%	0.9%	0.0%
9NA	2.4%	2.4%	0.0%
Total	100%	100%	

There has been no change to the baseline severity profile since the previous review.

3.2 Post-claim farming reform severity profile overlay

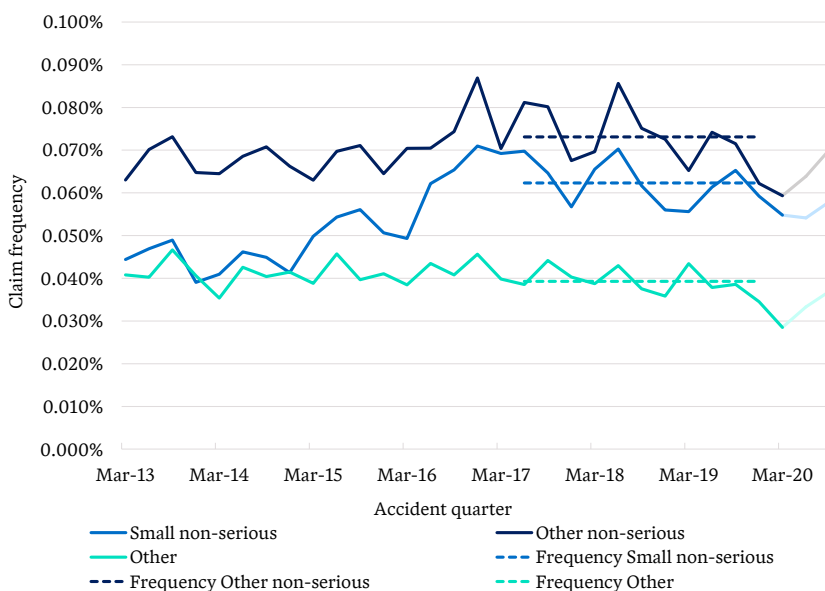
The significant reduction in frequency and change in notification pattern in the 2020 accident year has led to additional difficulties in estimating the severity profile for this period. The severity profile overlay is an allowance for the impact of this frequency reduction on the baseline severity profile.

This section outlines the assumptions for our post-claim farming reform severity profile overlay.

The severity profile overlay uses a broader segmentation of claims compared to the typical severity-based segmentation.. It is based on claim characteristics that are known early in the life of a claim and are less likely to develop compared to claim severity. The three resulting segments are introduced below:

- Segment 1: Small non-serious claims are defined as claims which are legally represented, don't involve an overnight stay in hospital, don't involve an ambulance and where the accident involved vehicles travelling in the same direction.
- Segment 2: Other non-serious claims are defined as claims which are legally represented, don't involve an overnight stay in hospital and are not in Segment 1.
- Segment 3: Other claims are defined as claims which are not in Segments 1 or 2.

Figure 5 – Claim frequency by segment



The increasing trend in frequency between 2014 and 2017 was almost entirely driven by an increase in non-serious same direction claims (Segment 1).

We have assumed the post claim-farming reform frequency reduction is from the same segment. Since segment 1 has the smallest claim size across the three segments, a reduction in its frequency leads to a strengthening in the overall severity profile.

This strengthening leads to a 3% increase in average claim size, equivalent to a \$5 increase in risk premium.

The increase in RP is \$0.50 less than at the annual review due to the lower assumed frequency impact of the claims farming reforms.

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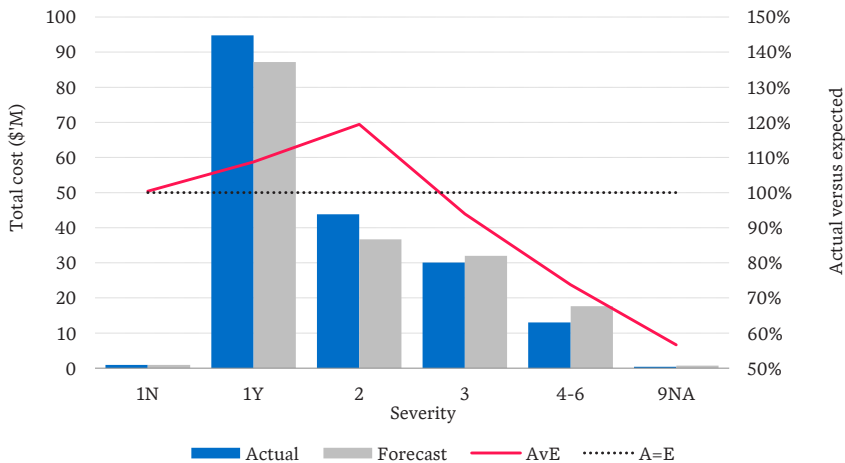
Average claim size

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 since the previous review driven by several large Severity 1Y finalisations over the quarter.

Figure 6 – Finalisation experience by severity in Mar-21 against Dec-20 model



Actual cost for the Mar-21 quarter across all severities was 4% higher than expected by our Dec-20 model.

Severity 1Y claims have finalised for 9% higher than forecast driven by several large Severity 1Y finalisations over the quarter.

Severity 2 claims have finalised for 19% higher than forecast.

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

	Severity									All
	1N	1Y	2	3	4	5	6	9NA		
Baseline at Dec-20	7	78	159	331	607	953	316	13	105	
Baseline at Mar-21	7	79	159	333	608	945	302	13	105	
Change	-1.8%	+1.5%	+0.5%	+0.6%	+0.3%	-0.8%	-4.3%	-2.7%	+0.8%	

Figure 7 – Average claim size by finalisation quarter

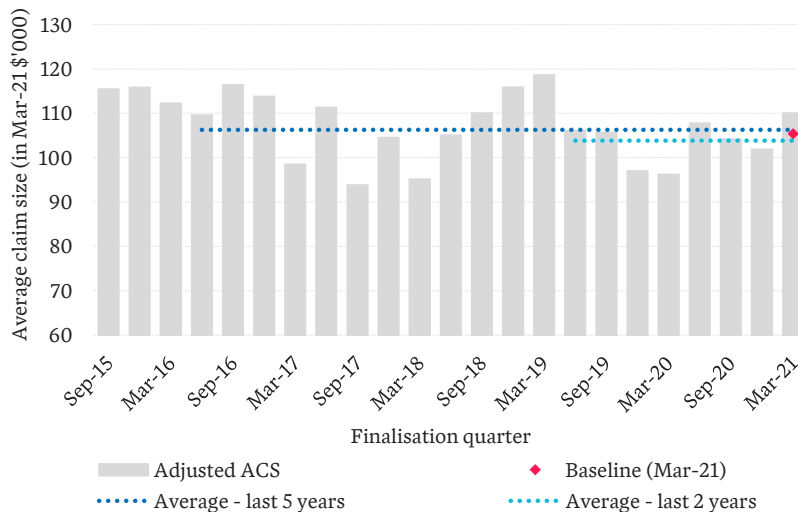
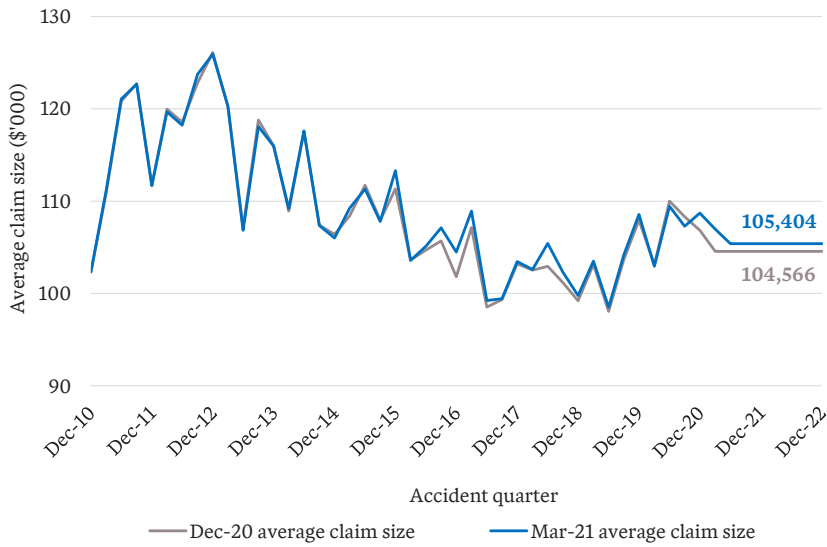


Figure 5 shows historical finalized claim sizes by finalisation quarter standardised for severity profile and stage of claim development.

Our current estimate of claim size is in line with recent experience.

Figure 8 –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 annual review. The current estimate is \$105,404.

4.2 Core average claim size: lead indicators and overlays

We use alternative average claim size models that use lead indicators to validate our average claim size assumption. The three lead indicators are: the claims mix model, the developed incurred costs model and the emerging trend in psychological claims proportion. As for the last few quarters, we have continued to incorporate the claims mix model trends into our advice.

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. Therefore, we monitor three lead indicators of claim size: a **separate claims mix model** which responds to the mix of claims yet to be finalised, such as legal representation, accident circumstance and hospitalisation; **insurers' case estimates of open claims**; and the **emerging proportion of psychological claims**.

Claims mix model and overlay

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. This suggests that further drops in claim size, beyond those reflected in our finalised claim models, are likely. We have recognised these trends only to the extent that they are supported by insurer case estimates up to the 2019 accident year. We allow for this trend to arrive at a 2% reduction in our average claim size for the claims mix trend overlay. We have not allowed for continued reductions beyond the 2019 accident year as the large frequency decreases observed in accident year 2020 and later increase the uncertainty around the continuation of the trend.

Developed incurred cost model

Historically, case estimates had been relatively stable, however, since early 2018, we have seen significant quarter on quarter development in these estimates including a significant strengthening over the last quarter driven by case estimate development in AY2018 and 2019. This has reduced our confidence in the reliability of insurer case estimates as a lead indicator of claim size. We have developed the case estimates to ultimate for the incurred cost model although caution is required given the recent unpredictability. Our baseline average claim size is consistent with ultimate incurred costs for AY2016/2017. We do not consider the developed costs for more recent accident years to be sufficiently reliable to inform our estimates.

Psychological claims

There was a decreasing trend in the proportion of claims with a psychological injury code up to accident year 2015. Since then, it has been increasing, with the expected proportions for accident years 2018 and 2019 much higher than 2017. Psychological claims have historically finalised for higher costs compared to non-psychological claims. This alone would imply that if there is a genuine increase in the frequency of claims with psychological injuries, we would expect claims costs to increase.

The current incurred costs for accident years 2018 and 2017 psychological claims are very close. However, the finalised psychological and non-psychological average sizes for accident year 2018 have been developing significantly below that of 2017 over the past year. This suggests that a large proportion of the apparent increase in costs caused by the increasing proportion of psychological claims is driven by insurer case estimates which are not currently supported by the finalised claim costs. The current finalised claims experience for the most recent accident years indicates that there is no net cost impact from the increase in psychological claims.

Estimated claim size

The estimated average claim size is \$106,262 which incorporates the claims mix model trend overlay and post claim-farming reform severity profile overlay as discussed in the previous section. This is also summarised in Table 4.

Table 4 Average claim size of core claims

	Average claim size (\$)
Baseline at Mar-21	105,404
Overlay: Post claim-farming reform severity profile	3,068
Overlay: Claims mix model trend	-2,210
Estimated at Mar-21	106,262

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 2021Q4 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 +/- \$13.

5.2 Key uncertainties

In addition, we have identified four key uncertainties that could impact the risk premium:

- The estimated impact of the claims farming reforms emerge differently than allowed for
- The decreasing trends in average size projected for non-serious claims emerge differently than allowed for
- The severity profile strengthening we have allowed for following the claims farming reforms emerge differently to expected
- The increasing proportion of claims coded as psychological results in a higher average claim size.

We have illustrated the potential impact of these uncertainties with a range of scenarios that 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%	+\$13 / -\$13
Key uncertainties	
Core claim frequency emerges in line with the May-20 to Dec-20 experience	+\$3
Core claim frequency emerges in line with post-claim farming reform frequency (Dec-19 - Dec-20 including April-20)	-\$2
CMM adjustment not realised/Apparent size reduction in segment 2 fully realised	+\$3 / -\$2
Post claim farming frequency reduction coming from All severities/Severities 1N,1Y, 2 & 9/Severity 1Y only	-\$4.6 / -\$1.5 / -\$1.1
AY2018 psych/non-psych finalised ACS develops to the same level as AY2017	+\$7

5.2.1 Impact of the claims farming reforms emerge differently than allowed for

Claim frequency reduced sharply from December 2019 with the introduction of the claims farming reforms and again once the impact of COVID-19 was felt on economic activity, including traffic flow. It has been difficult to determine how much of the frequency drop is due to the claims farming reforms, and so might be sustained, versus the impact of COVID-19.

Our post-claims farming frequency assumption is uncertain as there is only a little over one year of post-claim farming experience. We have estimated our post-claim farming frequency using all post-claim farming reform accident months up to Dec-20 but excluding Apr-20 which was the month most severely impacted by the COVID-19 lockdowns.

Two scenarios illustrate the uncertainty surrounding the core claim frequency assumption. The first scenario assumes core claim experience emerges in line with the May-20 to Dec-20 experience. This has an estimated risk premium impact of *plus* \$3. The second scenario assumes core claim experience emerges in line with post-claim farming experience including April 20. This has an estimated risk premium impact of *minus* \$1.

5.2.2 Decreasing trends in average size projected for non-serious claims

Our estimated risk premium allows for a continuation of the observed decreasing trends in the average claim size of non-serious claims through the claims mix model overlay. There is some uncertainty associated with this overlay. If the decreasing trend is not realised then the estimated risk premium could increase by \$3. Alternatively, if the full decreasing trend forecast by the claims mix model is realised the estimated risk premium could decrease by \$2.

5.2.3 Severity Profile strengthening following the claims farming reforms

The significant reduction in frequency and change in notification pattern since the introduction of the claims farming reforms has made it difficult to measure the impact of the reforms on severity profile. For this review we have assumed that the reforms reversed the increase in frequency of small non serious claims that occurred between 2014 and 2017 – although it too early to see this in the available data. However other scenarios are possible.

For example, if the frequency reduction following the reforms occurred proportionally across all claim severities then the estimated risk premium would reduce by \$5. Alternatively, if the frequency reduction occurred only in the small severities (1N, 1Y, 2 and 9) there would be a \$1.50 reduction in risk premium. Finally, if the frequency reduction occurred only in severity 1Y there would also be a \$1 reduction in risk premium.

5.2.4 Psychological claims

We are currently forecasting a higher proportion of psychological claims in AY2018 and later compared to AY2017. However, this increasing proportion is not expected to have a cost impact as it is offset by lower assumed finalised sizes for AY2018 and later for both psychological and non-psychological claims.

However, if it emerges that both psychological and non-psychological claims for AY2018 and later ultimately finalise at levels similar to AY2017 the estimated risk premium would increase by \$7.

6

Structure of
Risk Premium advice

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.

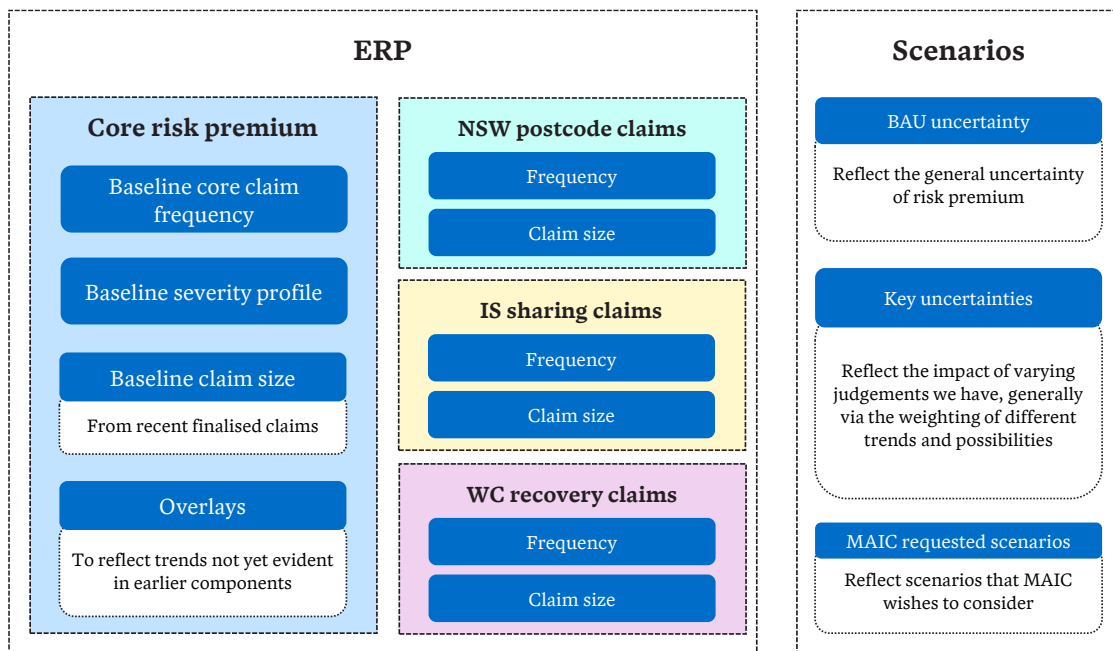
Our Estimated Risk Premium (ERP) for a given future underwriting quarter is comprised of our **baseline risk premium estimate** and **overlays**. The ERP reflects **risk premium** implied by **the most recent past accident periods**, adjusted for the impact of changes which meet the following criteria:

- 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.



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.
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 extent 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 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.

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