Queensland CTP Market Briefing

Review of the risk premium for the 2021Q2 underwriting quarter

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Risk premium

Taylor Fry estimates the components of the risk premium for the Queensland CTP scheme for each underwriting quarter and advises the Queensland Motor Accident Insurance Commission (MAIC) on these components. MAIC integrates our advice with its own views to set a floor and ceiling for insurer CTP premiums.

The risk premium is the expected future cost of claims made to insurers. 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 claim per registered vehicle and average claim size. These components make up the baseline risk premium.

As for our previous review, we have continued to incorporate an overlay to allow for the impact of claim-farming reforms on frequency. At this review, we have increased the weight given to the post-claim farming reform overlay.

As for the last few quarters, we have continued to incorporate adjustments for the Claims Mix model trends and the increasing trends in the number of claims with a psychological injury into our advice.

Taylor Fry's **estimated** risk premium is **$177.34**. The estimate is before the application of inflation and discounting and is based on modelling net costs to the CTP scheme after removing costs expected to be transferred to the National Injury Insurance Scheme Queensland (NIISQ). This estimate is **$6.13 lower** than our estimated risk premium made at the previous review (see Figure 1). The main contributor of the change in estimated risk premium is a reduction in the post-claim farming reform frequency overlay estimate as well as a higher weight being given to this overlay in our estimated frequency. **Our estimated risk premium includes an approximate adjustment to remove the impact of COVID related reductions in traffic volumes.**

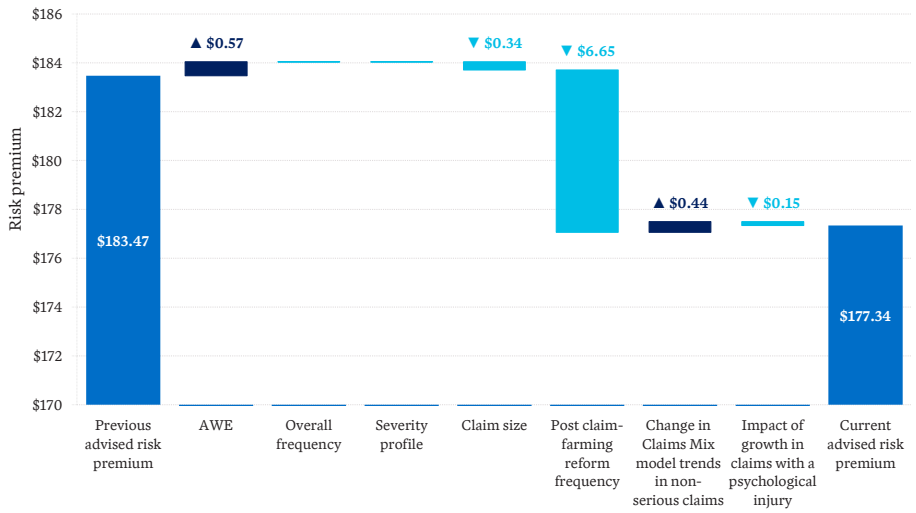
Risk premium

Table 1 Baseline estimate of risk premium at 30 September 2020

	Risk premium component		
	Frequency	Average claim size ($)	Risk premium ($)
Core claims			
Baseline	0.1700%	107,583	182.89
Overlay: Post claim-farming reform frequency	-0.0160%	3,031	-12.54
Overlay: claims mix trend		-3,425	-5.28
Overlay: Psychological claims		1,452	2.24
Estimated core claims	**0.1540%**	**108,640**	**167.31**
NSW accident postcode claims	0.0056%	125,754	7.09
Interstate sharing	0.0026%	66,442	1.73
Workers' compensation recovery	0.0123%	9,889	1.22
Estimated risk premium at 30 June 2020	**0.1750%**	**101,337**	**177.34**

Change in estimated risk premium estimate since the previous review

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



The main driver of the decrease in risk premium relative to the estimated premium at the Jun-20 review is a reduction in the post-claim farming reform frequency overlay as well as a higher weight being given to this overlay in our estimated frequency.

There is a slight positive AWE inflation since the last review and a small increase in the claims mix model overlay. These are partially offset by a slight decrease in the baseline average claim size and a small reduction in the psychological claims overlay.

Baseline core claim frequency and severity

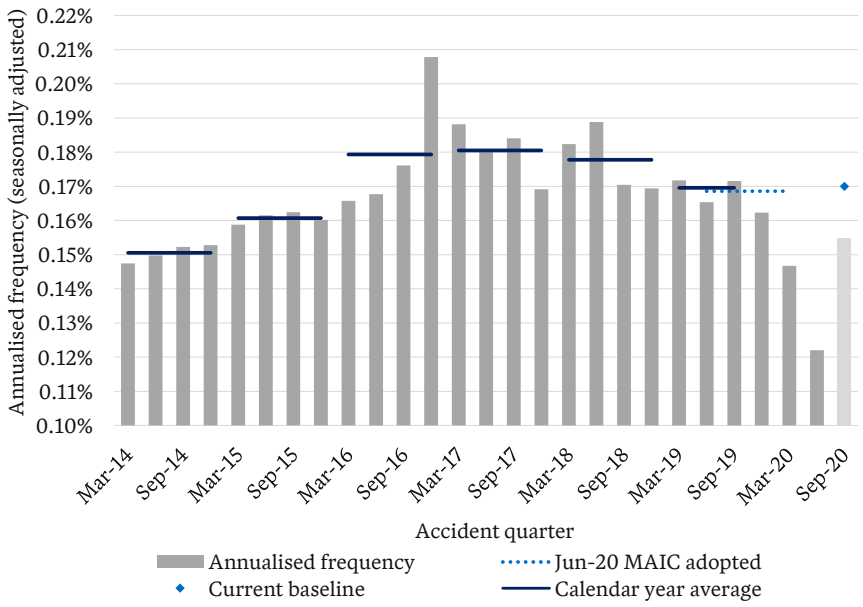
Typically, Taylor Fry reviews the core claim frequency and severity profile at each annual review, but the experience is monitored quarterly and changes are made if necessary. The frequency assumption and severity profile were previously revised in Jun-20.

Notifications for the 2020 accident year are lower than historically, as a result of COVID19 related shutdowns and claim-farming legislation. For forecasting purposes, we have set our 'baseline' frequency at our estimate of the pre claim-farming reform frequency level (i.e. pre Dec-19). This section outlines the assumptions for the baseline core claim frequency and severity profile. An allowance for impact of the claim-farming reforms has been incorporated to form our overlay frequency (i.e. post Dec-19) and is discussed in the next section.

Baseline core claim frequency

Although notifications in the September quarter for the 2019 accident year were 7% lower than expected, the claim frequency for accidents in 2019 is almost fully developed and so our estimate of baseline core claim frequency is unchanged from the previous review.

Figure 2 Estimated annualised baseline core claim frequency as at 30 September 2020



This figure shows the projected ultimate annualised baseline frequency for each historical accident quarter after allowing for seasonality.

As per our previous review, we have set our baseline frequency to the scheme's frequency prior to claim-farming reforms and COVID19. This is the average of the seasonally adjusted frequency over Apr-19 to Nov-19.

Our **baseline** estimate of core frequency is **0.1700%**. This has not changed since the last review.

Baseline severity profile

The majority of claims are legally represented severity 1 claims (severity 1Y). These contribute 69% of core claim notifications and 51% of the core risk premium. While there are relatively few high severity claims, these have higher average claim sizes.

Table 2 Baseline severity-specific frequency

Severity	Proportion	Baseline frequency
1N	8.5%	0.0144%
1Y	68.5%	0.1165%
2	12.8%	0.0218%
3	5.3%	0.0091%
4	0.8%	0.0014%
5	0.4%	0.0007%
6	0.9%	0.0016%
9NA	2.7%	0.0046%
Total	**100%**	**0.1700%**

The notification and transition experience over the quarter provides no evidence to change the baseline severity profile at this review.

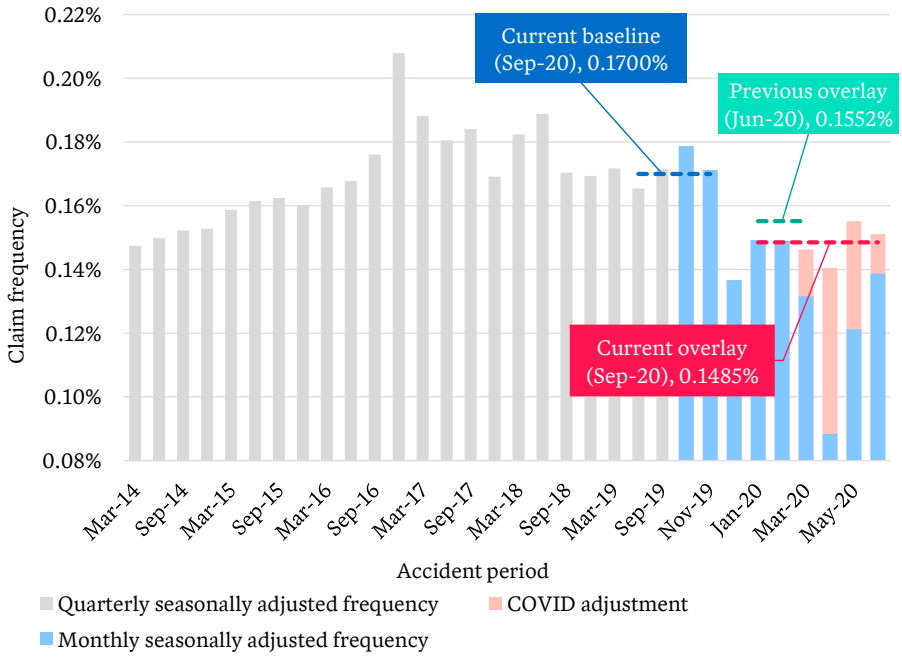
We have accounted for the impact of the drop in frequency since Dec-19 on the severity profile in our frequency overlay adjustment.

Core claim frequency overlay

As for the last quarter, we have continued to incorporate an overlay to allow for the impact of claim-farming reforms on frequency. The overlay frequency is based on the last two accident quarters of experience (excluding the Dec-19 accident month) adjusted to remove the impact of COVID19 induced reductions in traffic volumes. The final estimated core claim frequency gives 25% weight to the baseline frequency and 75% weight to the overlay frequency. This section outlines the assumptions for frequency and average claim size of our core claim frequency overlay.

Frequency of core claim frequency overlay

Figure 3 Core claim frequency pre and post claim-farming reform



Core claim notifications have shown a marked decrease after the Nov-19 accident month. The true reduction in frequency post claim farming is slightly confounded due to a delay in notification and the reduced traffic volumes after Mar-20 due to COVID19 related shutdowns. We have allowed for both factors as best as we can.

The resulting **post claim-farming reform frequency overlay** is **0.1485%** which excludes Dec-19 and incorporates an adjustment for the impact of COVID19.

This quarter we are increasing the assigned weight to the frequency overlay from 50% to 75% in our estimated risk premium.

This gives the **estimated** ultimate core claim frequency of **0.1540%,** a 5.5% decrease from the Jun-20 estimated frequency.

Severity profile of core claim frequency overlay

As the estimated frequency has reduced significantly due to claims farming reforms, we also need to consider changes to the severity profile of claims.

Our estimate of the post claim-farming core frequency is approximately equal to the 2014 accident year frequency. The increasing trend in frequency starting after accident year 2014 was almost exclusively an increase in the frequency of non-serious same direction claims. Assuming the post claim-farming reform frequency reduction is a reduction in the frequency of the same segment of claims leads to an increase in the expected average claim size as claims in this segment have a lower average claim size than the remaining claims.

Based on historical experience in claim frequency and average claim size relativity by claim segment, we estimate the full impact of the post claim farming scenario to be $16 ($22 reduction in risk premium due to a reduction in frequency, partially offset by a $6 increase in risk premium assuming the post claim-farming reform frequency reduction is from the non-serious same direction claims). This quarter we are assigning a 75% weight to the post claim-farming frequency overlay in our estimated risk premium, giving a weighted impact of a **$12 reduction** in risk premium compared to our baseline estimate of risk premium.

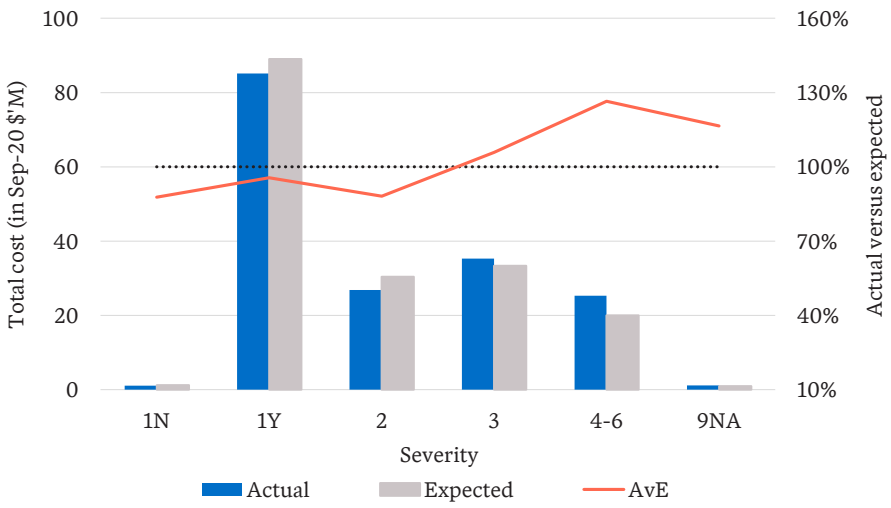
Finalised baseline average claim size

Taylor Fry reviews the average claim size by severity every quarter based on finalised claims. The average finalised claim sizes used for modelling are on a net of NIISQ basis. This section outlines the assumptions for our **baseline** average claim size.

Total cost of claims by severity

We compare the total cost of finalised claims in the Sep-20 quarter to what was forecast at the previous review for the same number of claims. This comparison reveals the difference in, and materiality of, movements in average claim size by severity.

Figure 4 Total cost of finalised core claims in Sep-20 by severity



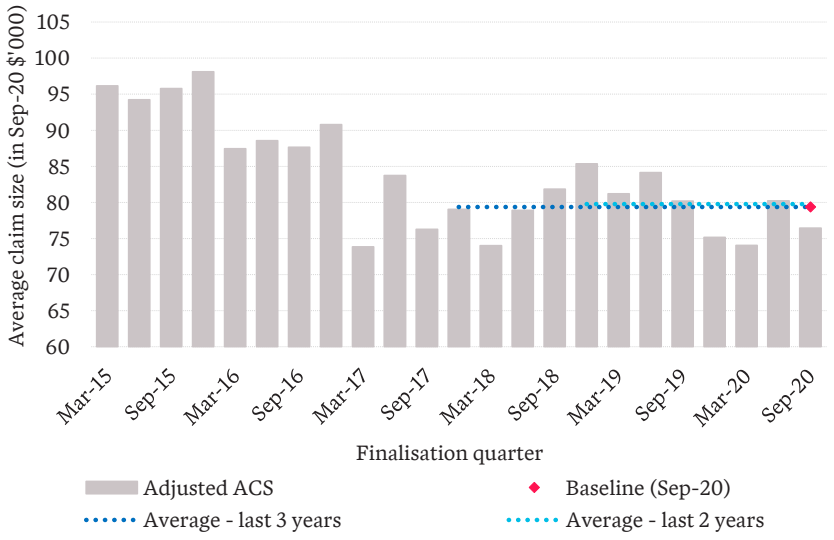
Overall, the average claim size for claims finalised over the quarter was **in line** with expected.

The average finalised claim size in severity 1Y was **4%** lower than forecast at the Jun-20 review. This result is particularly important as severity 1Y claims comprise 49% the total cost of claims finalised over the quarter, and outcomes are less volatile than higher severities.

Severity 3, 4-6 and 9NA claims finalised for higher amounts than expected. The less favourable finalisation experience for severity 3 and 4-6 claims was mainly attributable to the finalisation of some large claims.

Severity 1Y average finalised claim size

Figure 5 Severity 1Y average claim size



The projected average claim size for severity 1Y has reduced by **0.1%** from the estimated average size at the Jun-20 review to **$79,401.** The baseline average claim size is in line with the last two year and three-year averages.

The projected average claim size has decreased for severities 1N, 1Y and 3. This is partially offset by an increase in the average size of other severities. The overall projected average claim size has reduced by **0.2%** as a result.

Change in baseline average claim size since the previous review

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

	Severity								Total
	1N	1Y	2	3	4	5	6	9NA	
Baseline at Jun-20	7	79	160	349	674	1,132	314	13	108
Baseline at Sep-20	7	79	160	342	681	1,146	317	13	108
Change in baseline	-0.3%	-0.1%	+0.4%	-2.0%	+1.0%	+1.2%	+0.7%	+0.2%	-0.2%

Lead indicators of claim size

We use lead indicators of claim size to validate our average claim size assumption. Two lead indicators are used as overlays to form our **estimated average claim size**. These indicators are claims mix model trends in non-serious claims and the possible impact of a growth in claims with a psychological injury code.

Lead indicators of claim size

At the current time, 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**.

Our claims mix model indicates a growing frequency of legally represented, non-serious, same direction claims until the 2017 accident year and an established decreasing trend in the size of all legally represented, non-serious claims[1]. This suggests that further drops in claim size, beyond those reflected in our finalised claim models, are likely. We allow for this trend to arrive at a 3% reduction in our average claim size for the claims mix trend overlay. Although case estimates also provide some support for this reduction, they are also being affected by an increasing proportion of claims with a psychological injury. We will investigate the feasibility of separating the impact of the trends in the claims mix model from psychological claims trends in the annual review.

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 are historically finalised for higher costs compared to non-psychological claims. This implies that if there is a genuine increase in the frequency of claims with psychological injuries, we would expect claims costs to increase. While the incurred average claim sizes of psychological claims for the 2017 and 2018 accident years are approximately equal, the non-psychological claims' incurred average claim size for 2018 has developed below that of 2017. This suggests an element of substitution to the increase in the proportion of claims with psychological injuries. i.e. some of the increase is due to higher cost non-psychological claims now being recognised as psychological with no change in ultimate cost. Additionally, the finalised average claim size for accident year 2018 has developed well below that of 2017 in the past 3 quarters, suggesting that the proximity of the psychological claim incurred average sizes between 2017 and 2018 are mainly driven by insurer case estimates which are not yet supported by finalised experience.

Based on historical trends, we project the ultimate average incurred cost for each accident year allowing for trends in the proportion of claims with a psychological injury. The average claim size overlay for psychological claims is based on the difference between the projected average incurred cost for accident year 2018 and 2017.

We have continued to assign a weight of 25% to our psychological injury overlay mainly due to the reasons provided above. In addition, MAIC commissioned an investigation into the increase in the frequency of claims with a psychological injury by Jensen McConaghy. The investigation concluded that the increasing trend in the prevalence of psychological claims is "not the result of an intentional strategy or trend on the part of the legal profession in Queensland" and that claim farming and the progressive coding of injuries were potential drivers of the trend. Views of the insurers expressed to Jensen McConaghy were mixed, with no consensus that the issue was one of concern in terms of increasing claim costs.

We will continue to monitor experience as it emerges and update our advice accordingly. There is considerable uncertainty about the potential increase we have identified but there is also considerable scope for insurers to intervene and exercise control over the increasing costs.

Estimated core average claim size

The **previous estimated** average claim size incorporating the overlays for post claim-farming reform frequency, claims mix model trends in non-serious claims and potential impacts of psychological claims was **$106,752** ($Sep-20). The **current estimated** average claim size is **$108,640**, which is 1.8% higher than the previous estimated average claim size.

Notes:

1. *'Non-serious claims' refers to claims that are not fatal, do not result in brain and spinal cord injuries and do not require an overnight hospital stay.*

Risk premium scenarios

There is considerable uncertainty in the assumptions underlying our risk premium estimate. There is a risk that the claim frequency and size that ultimately emerge for the 2021Q2 underwriting quarter turn out to be different to our assumed values. We provide the impact on the estimated risk premium for some plausible scenarios with alternative sets of risk premium assumptions.

Risk premium advice and MAIC's pricing decisions

At each review we provide MAIC with our estimated risk premium and a range of plausible alternative scenarios. Our estimated risk premium is intended to reflect risk premium for the most recent past accident periods, to the extent we can reliably measure it, 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.

We can measure a 12-month frequency with reasonable accuracy about 6 months after the end of the year. Generally, we trade some uncertainty for a more recent measurement by basing our estimated risk premium on our estimate of frequency for the 12-month period ending 3 months before the measurement date. However, from time to time there are issues specific to the quarter that cause us to change this approach.

On average, our finalisation models reflect claim sizes for accidents 2-3 years before. Our overlays are intended to reflect changes in average claim size that are not yet in our finalisation models but which we expect for the most recent accidents, based on other analysis. The overlays are subject to more uncertainty because they are not based on actual settlement sizes. This uncertainty requires us to exercise judgement in translating the overlay analysis into dollar items in the estimated risk premium. MAIC make separate allowance for general claims cost growth in the form of a Superimposed Inflation allowance.

In the current context, our estimated risk premium is pre-COVID although MAIC has requested, and we have provided, a scenario that is intended to reflect recent post-COVID traffic levels.

MAIC are setting prices for an accident period which is approximately one year in the future, with claims settling on average 3 years after that. We consider it proper for them:

- To anticipate future changes in the risk premium which we have not allowed for in our estimated risk premium
- To make different judgments on how the issues we have highlighted are translated into dollar items in the risk premium
- Incorporate the impact of other issues we have not considered in formulating our advice.

We do not expect that MAIC will necessarily adopt our estimated risk premium or a risk premium that is within the range covered by our scenarios.

Plausible alternative scenarios

We provide risk premium impacts from a range of plausible alternative scenarios. The definitions of these scenarios are provided in Table 4 below.

Table 4 Scenario definitions

Category	Scenario	Description
BAU variation based on time elapsed between measurement and payment	*+/- 6% change in core frequency*	The impact of recent differences in actual and expected frequency on risk premium. The percentage change is determined by comparing the current baseline frequency to the 12 month average frequencies over the last 18 months
	+/- 8% change in core average claim size	The impact of recent differences in actual and expected average claim size on risk premium. The percentage change is determined by comparing the current baseline claim size to the ultimate claim size projected using the projected case estimate (PCE) model over the last 6 accident calendar years
Illustrative judgment variation, generally via the weighting of different trends and possibilities	*ACS overlay scenarios*	Change in weighting of average claim size overlays incorporated in the estimated risk premium
	Impact of claim farming legislation	» Change in weighting given to the estimated core claim frequency post the claim farming legislation i.e. Jan-20 to Jun-20 » Change in notification delay on post claim farming frequency
	NIISQ coverage	If the NIISQ covers gratuitous care (as currently supported by the Walters v Roche decision)
Scenarios requested by MAIC	*AY2014 risk premium*	MAIC has hypothesised that the increasing trend in frequency post 2014 has been due to claim farming which may be reversed as a result of the new claim farming legislation. This scenario aims to determine reasonable proxy for the reduction in risk premium expected as a result of claim farming reforms
	Traffic volume reduction sustained	This scenario is based on traffic volume reductions seen Jun 19 to Jun 20 due to COVID19 related shutdowns

We show sensitivity of the risk premium to some different scenarios below. Although the table below shows the impact of each scenario in isolation, it is possible that more than one scenario may occur at the same time. In particular, if more than one scenario in the middle group was to occur, we estimate the impact to be approximately additive.

Table 5 Change in estimated risk premium for plausible alternative scenarios

Risk premium scenarios	Impact on estimated risk premium
Business as usual variation	
Core claim frequency +/- 6% (excluding severities 4-6)	+$10 / -$10
Core average claim size +/- 8%	+$13 / -$13
Illustrative judgement variation	
Psychological claims ACS overlay credibility 0% / 25% / 50%	-$2 / - / +$2
NIISQ gratuitous care coverage by NIISQ 0% / 100% (as per Walters v Roche)	- / -$2.5
Post claim farming legislation claim frequency 0% / 75% / 100%	+$12 / - / -$4
Scenarios requested by MAIC	
Estimated frequency and severity profile set to AY2014 risk premium figures (no current ACS overlays included)	+$1
Traffic volumes continue to stay 5% below pre-COVID baseline leading to a 5% reduction in frequency	-$8

Economic assumptions

Taylor Fry uses AWE to bring past payments to current values, advises on the economic gap (the difference between risk-free investment return and QLD AWE inflation rate) and monitors superimposed inflation each quarter.

Economic gap

The economic gap is the difference between the projected risk-free investment return and the projected QLD AWE inflation rate up to the time of claim payment. A higher economic gap translates to a lower CTP premium.

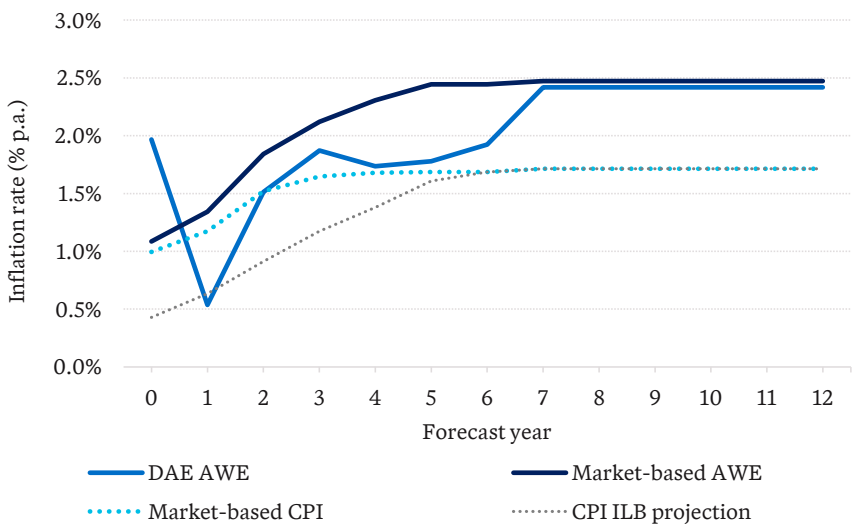
The projected risk-free investment return is derived from prevailing Australian Government bond yield curves available at the time of premium setting (as at 1st December 2020).

At the Sep-20 review, we have provided two projected QLD AWE inflation rates based on information available at the time of premium setting:

- One is derived 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.
- Another is derived from Deloitte Access Economic (DAE) inflation forecasts.

Figure 6 Projected wage inflation rates

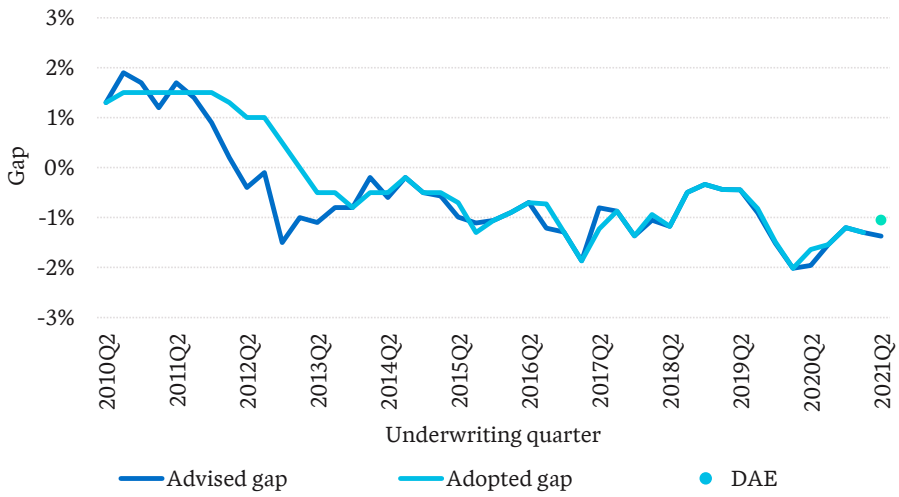


For the 2021Q2 underwriting quarter, the projected flat wage inflation rates are:

- **1.85% p.a.** based on the market-based model
- **1.53% p.a.** based on DAE inflation forecasts

The market-based estimate of Consumer Price Index (CPI) inflation rates and CPI inflation linked bond projection have also been shown for reference.

Figure 7 Economic gap



For the 2021Q2 underwriting quarter, **the economic gap based on the market-based forecast is -1.37%.** This is made up of a:

- Discount rate of 0.48% p.a. and
- Wage inflation of 1.85% p.a.

The economic gap widened slightly from -1.30% estimated at the previous review.

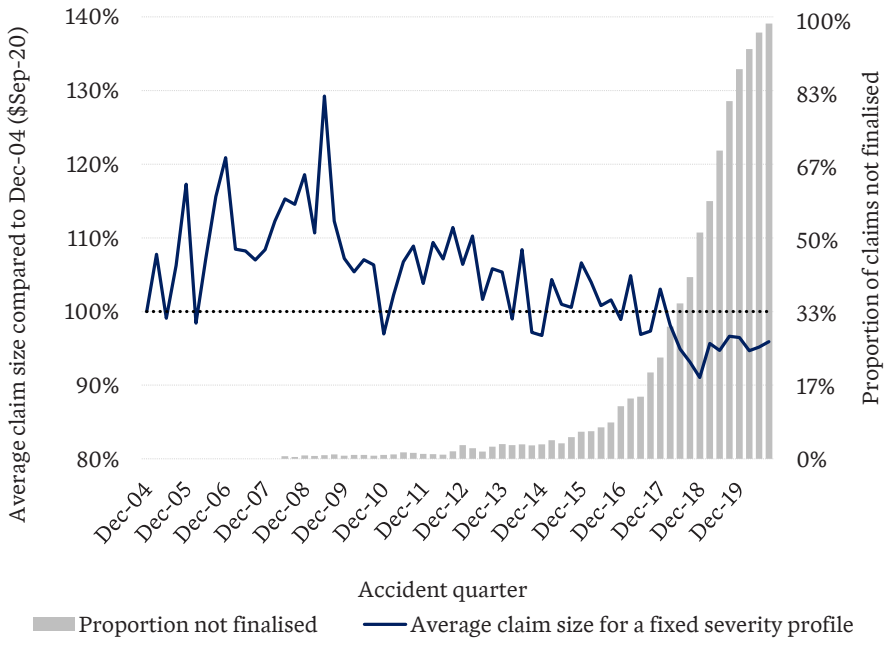
The economic gap for the 2021Q2 underwriting quarter **based on the DAE forecast is -1.05%**, compared to -0.98% last quarter.

There is a wide range of uncertainty in current economic forecasts. The market-based model only responds to around 50% of the immediate short-term forecasts of inflation and we are reluctant to make an ad hoc change. In our view it is open to MAIC to revert to the DAE model for a time.

Superimposed inflation

In the premium setting process, superimposed inflation is the growth in average claim size above the QLD AWE inflation rate that cannot be explained by changes in the severity mix. Currently, MAIC set the future superimposed inflation assumption at 0.5% p.a. We consider that the analysis of past superimposed inflation in the Scheme supports a future superimposed inflation assumption in the range 0% p.a. to 2% p.a.

Figure 8 Superimposed inflation illustration (adjusted for AWE inflation) assuming 0% p.a. *future* superimposed inflation



Superimposed inflation has been benign over the past decade. That is, average claim size has not increased at a materially faster rate than QLD AWE inflation.

With a high proportion of claims not finalised, there is potential for the average claim size for accidents in 2019 and 2020 to exhibit superimposed inflation before finalisation:

- At 0% p.a. future superimposed inflation, the 5-year change in average claim size to Sep-20 is -0.94% p.a.
- At 1% p.a. future superimposed inflation, the 5-year change to Sep-20 is -0.40% p.a.

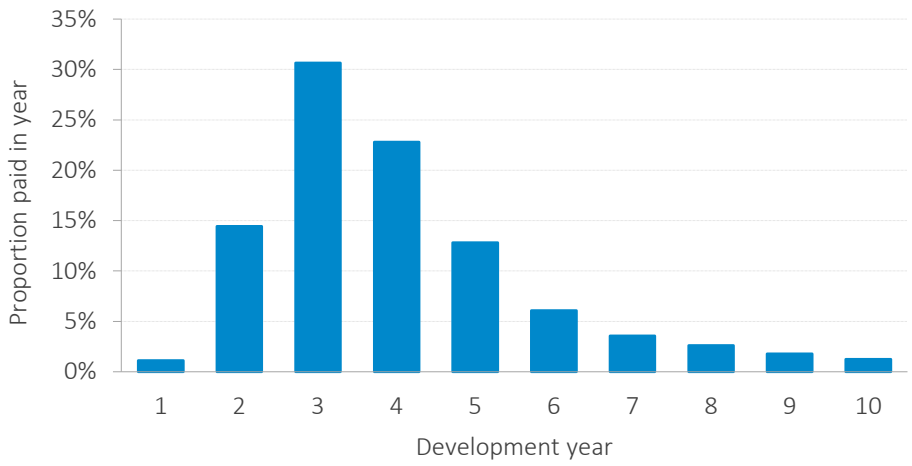
Other premium components

Taylor Fry advises on the pattern of future payments for applying the economic assumptions, and the vehicle class relativities.

Payment pattern

The payment pattern shows when claim payments are expected to be made following underwriting.

Figure 9 Payment pattern



The payment pattern at this review has remained unchanged to the payment pattern estimated at Dec-19. The mean term from underwriting to payment is **3.71 years.**

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