



Queensland CTP Market Briefing

Review of the risk premium for the 2020Q3 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. Our advice was prepared before the significance of COVID19 was apparent and the impact of it is **not** specifically addressed in our advice.

The risk premium is the expected future cost of claims made to insurers. We consider “core” claims separately from workers’ compensation recovery (WC) and interstate sharing (IS) claims. At this annual review, we have also modelled all NSW accident postcode claims as a separate claim type which includes an appropriate allowance for expected claim reporting as a result of the Dec-17 NSW CTP reforms. Each component is separated into the frequency of claim per registered vehicle and average claim size. These components make up the baseline risk premium.

At this review, we have added pricing overlays to the baseline risk premium to form our advised risk premium. These overlays incorporate Claims Mix Model trends in non-serious claims and the possible impact of a growth in claims with a psychological injury code.

Taylor Fry’s **advised** risk premium is **\$193.89**. 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 **\$12.31 higher** than our advised risk premium made at the previous review (see Figure 1). The previous advised estimate incorporated the Claims Mix Model trend in non-serious claims which was applied to the previous baseline risk premium. Major contributors of the change in advised risk premium are an increase in QLD Average Weekly Earnings (AWE) of 2% since the previous quarterly review and an allowance for the possible impact of a growth in claims with a psychological injury code.

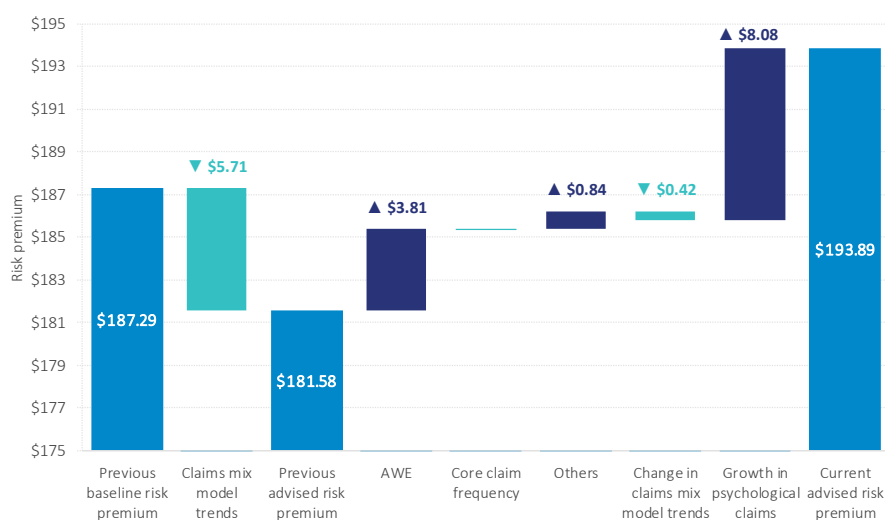
Risk premium

Table 1 Baseline estimate of risk premium at 31 December 2019

	Risk premium component		
	Frequency	Average claim size (\$)	Risk premium (\$)
Core claims			
Baseline	0.1720%	105,886	182.12
Overlay: Claims Mix Model trend		-3,566	-6.13
Overlay: Psychological claims		4,697	8.08
Advised core claims	0.1720%	107,017	184.07
NSW accident postcode claims	0.0056%	123,039	6.94
Interstate sharing	0.0026%	65,007	1.69
Workers’ compensation recovery	0.0123%	9,676	1.19
Advised risk premium at 31 Dec 2019	0.1930%	100,461	193.89

Change in advised risk premium estimate since the previous review

Figure 1 Change in advised risk premium since the Sep-19 review



The main drivers of the increase in risk premium relative to the advised premium at the Sep-19 review are an increase in QLD AWE since the previous quarterly review and an allowance for the possible impact of growth psychological claims. These have increased the advised risk premium by \$3.81 and \$8.08 respectively.

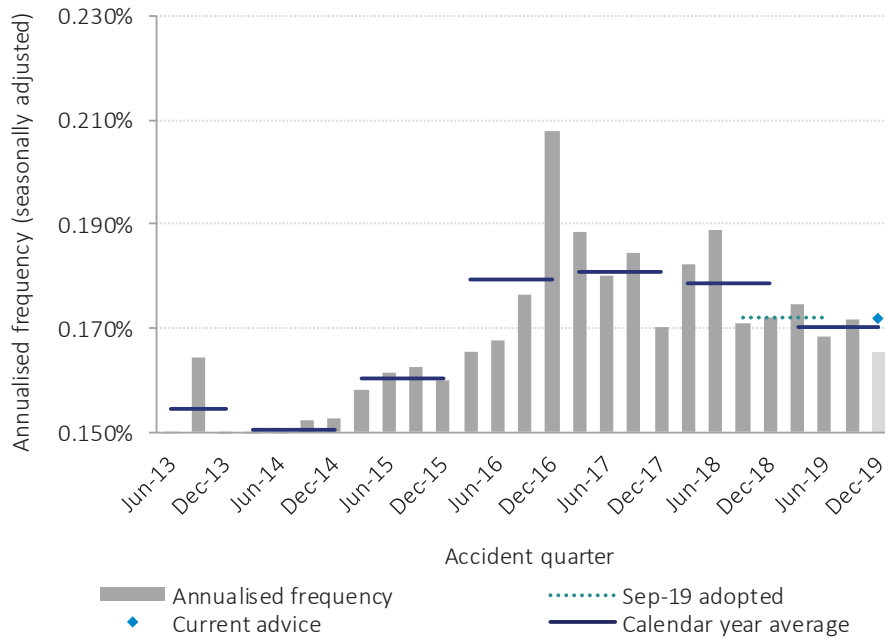
The impacts of changes in the average claim size, severity profile, modelling of NSW postcode claims, and claims mix model trends largely offset each other.

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. For this annual review we have reviewed and updated the core claim frequency and severity profile assumptions used to set the risk premium. The frequency assumption and severity profile were previously revised in Sep-19. This section outlines the assumptions for core claim frequency and severity profile excluding NSW postcode claims, which is covered in a separate section further below.

Overall core claim frequency

Figure 2 Estimated annualised core claim frequency as at 31 December 2019



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

We have observed an overall decreasing trend from the peak in late 2016. The total number of notifications in the quarter was **4%** lower than expected at Sep-19. The 2019 accident year notifications were **5%** lower than the baseline forecast at Dec-18.

For future accident quarters we now advise a frequency assumption (excluding NSW postcode claims) of **0.1720%**, which is based on the 4 quarter average to Sep-19. This advised frequency remains unchanged since the last quarter but has fallen by 5% over the year.

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.

Figure 3 Severity-specific frequency

Severity	Proportion	Advised frequency
1N	8.5%	0.0146%
1Y	68.5%	0.1179%
2	12.8%	0.0220%
3	5.3%	0.0092%
4	0.8%	0.0014%
5	0.4%	0.0007%
6	0.9%	0.0016%
9NA	2.7%	0.0046%
Total	100%	0.1720%

At this annual review, we have updated the severity profile assumptions. This has increased the advised risk premium by \$0.59 over the quarter.

We have responded to the following trends in the severity profile:

- » An increase in the proportions of severity 2 and 3 claims
- » A small decrease in severity 4 frequency
- » A decrease in severity 6 frequency
- » A decrease in the proportion of severity 9NA claims

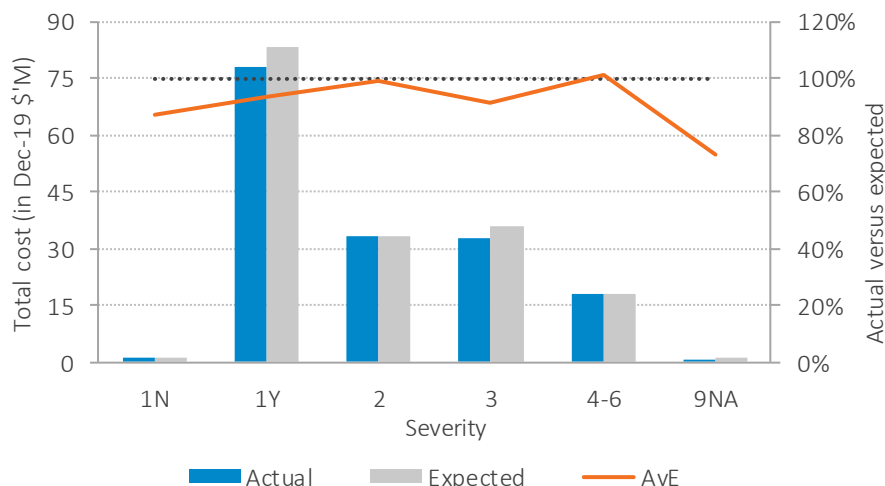
Finalised average claim size

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 NISQ basis. This section outlines the assumptions for our **baseline** average claim size excluding NSW accident postcode claims.

Total cost of claims by severity

We compare the total cost of finalised claims in the Dec-19 quarter to what was forecast at the previous review for the same number of claims. This reveals the difference in, and materiality of, movements in average claim size by severity.

Figure 4 Total cost of finalised core claims in Dec-19 quarter by severity



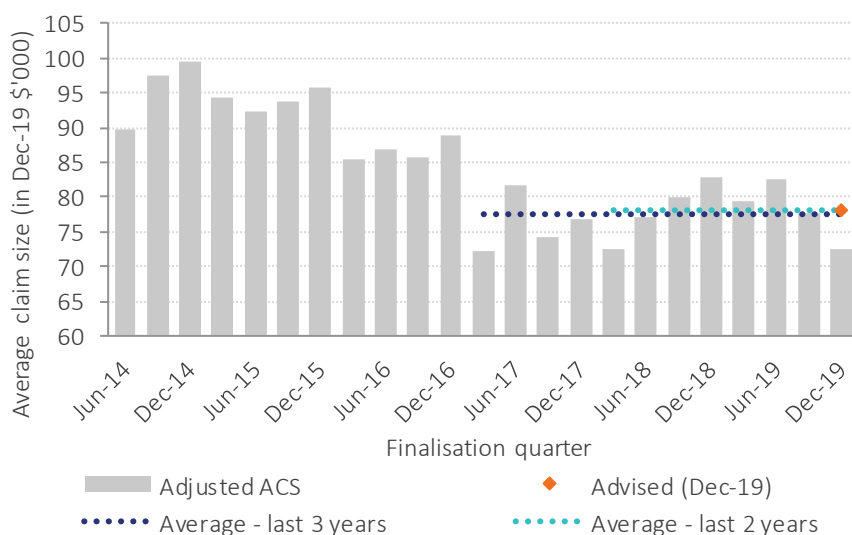
Overall, the average size for claims finalised over the quarter was 5% lower than expected at the Sep-19 quarterly review.

The average finalised claim size in severity 1Y was 6% lower than forecast at the Sep-19 review. This result is particularly important as severity 1Y claims comprise half the total cost, and outcomes are less volatile than higher severities.

Severity 4-6 claims have finalised for 1% higher than forecast. The finalisation experience in other severities was in line with or more favourable than forecast.

Severity 1Y average finalised claim size

Figure 5 Severity 1Y average claim size



We have reduced the baseline average claim size for severity 1Y by 2% to \$78,206. The baseline average claim size is in line with the last two year and three year averages.

We have increased baseline average claim sizes for severities 5 and 6 and decreased baseline average sizes for other severities. Together with the adjustment to the severity profile and the removal of NSW accident postcode claims, these lead to a **negligible impact on the baseline average claim size** and a \$0.43 increase in the advised risk premium.

Change in baseline average claim size since the previous review

Table 2 Change in baseline average claim size by severity (\$'000, adjusted for inflation)

	Severity									Total
	1N	1Y	2	3	4	5	6	9NA		
Baseline at Sep-19	7	79	156	346	662	1,070	253	15	106	
Baseline at Dec-19	7	78	156	345	650	1,135	304	13	106	
Change in baseline	-1.9%	-1.6%	+0.0%	-0.1%	-1.9%	+6.1%	+20.4%	-12.5%	+0.0%	

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 **advised 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 claims¹. This suggests that further drops in claim size, beyond those reflected in our finalised claim models, are likely. We advise reducing our baseline average claim size by 3% to allow for this trend.

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 expected proportion for accident year 2018 much higher than 2017. Psychological claims are historically finalised for higher costs compared to non-psychological claims. While the incurred average claim sizes for psychological claims for accident years 2017 and 2018 are lower than for accident years 2011-2016, this is not enough to offset the increasing proportion. This suggests a potential increase in the overall average claim size.

Based on historical trends, the average claim size for accident year 2018 could develop to 8% above the baseline average claim size. There are several reasons the increase may be lower than 8%. For instance, the higher proportion of psychological claims in recent years may be due to an acceleration of recognition of psychological injuries or to the extent that the increased proportion is due to claims which would not, in previous years, have been classed as psychological claims, we would expect these new claims to be of a lower size. There is also a very small proportion of claim cost for accident year 2018 which has been finalised. 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.

Although there is considerable uncertainty about this increase, a trend may have been established. On balance, we advise increasing our baseline average claim size by 4% for pricing purposes. We will monitor experience as it emerges and update our advice accordingly.

Advised core average claim size

The **previous advised** average claim size incorporating the claims mix model trends in non-serious claims is \$102,471 (\$Dec-19). At this review, we have incorporated the change in claims mix model trends in non-serious claims (-3%) as well as the possible impact of a growth in psychological claims (+4%) into our **advised average claim size of \$107,017**. This is **1%** higher than the current baseline average claim size and **4%** higher than the previous advised estimate.

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 2020Q3 underwriting quarter turn out to be different to our assumed values. The table below shows the impact on the advised risk premium for some plausible scenarios with alternative sets of risk premium assumptions.

We have constructed scenarios with different assumptions for core claim frequency and **advised** average claim size. The average claim size scenarios incorporate both the variability in severity profile and the variability in the size of claims within severities and across accident years. 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. If more than one independent scenario was to occur, we estimate the impact to be approximately additive. There is considerable variation in risk premium indicated by a number of realistic scenarios.

Table 3 Change in advised risk premium for plausible alternative scenarios

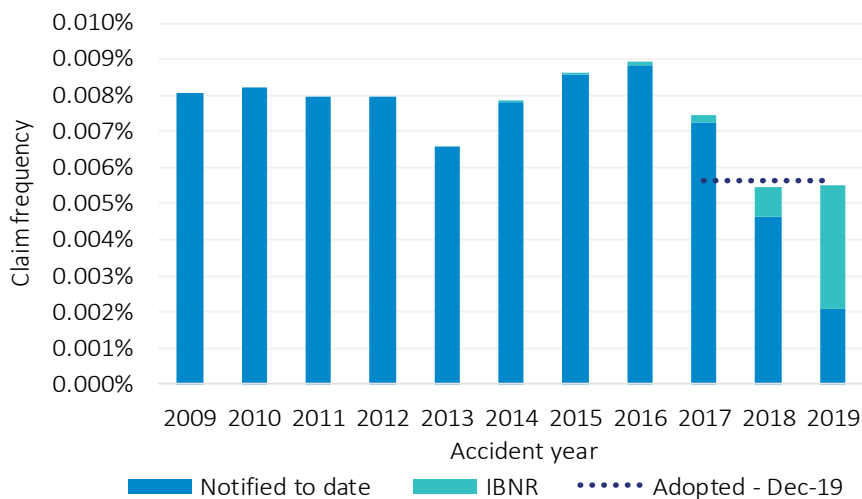
Risk premium scenarios	Impact on advised risk premium
Frequency scenarios	
Increase by 5% (excluding severities 4-6)	+\$8
NSW post reform claim frequency 20% lower than expected	-\$1
Decrease by 5% (excluding severities 4-6)	-\$8
AY2015 claim frequency and severity profile	-\$8
Average claim size scenarios	
Developed AY2018 psychological claims proportion	+\$9
AY2015 developed incurred cost	+\$7
Reverse adjustment for established trends in non-serious claims	+\$6
AY2016 developed incurred cost	-\$4
Pre AY2017 psychological claims proportion	-\$8
AY2018 developed incurred cost	-\$9
AY2017 developed incurred cost	-\$10

NSW accident postcode claims

The Dec-17 NSW CTP reforms have resulted in claim processing delays and changes in claim type coding for NSW accident postcode claims. At this annual review Taylor Fry has modelled all NSW accident postcode claims as a separate claim type which includes an appropriate allowance for missing NSW claims.

Frequency of NSW claims

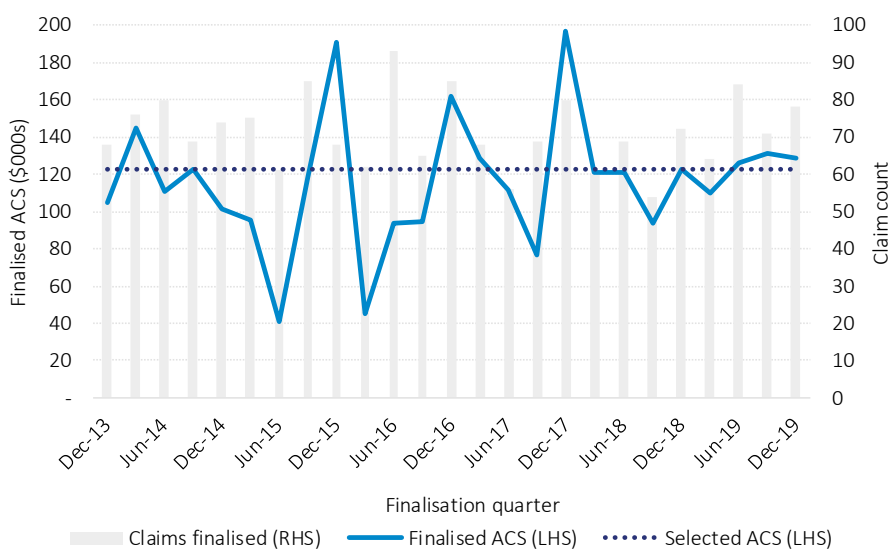
Figure 6 NSW claim frequency by accident year



The frequency estimate for NSW accident postcode claims is 0.0056%. This estimate incorporates an allowance for the expected impact of the Dec-17 NSW CTP reforms.

Average claim size of NSW claims

Figure 7 NSW claim finalised ACS by finalisation quarter



The average claim size estimate for NSW accident postcode claims is \$123,039. This estimate is based on the historical finalisation experience of NSW claims and incorporates an allowance for the expected impact of the Dec-17 NSW CTP reforms.

NSW claims risk premium

The risk premium for NSW accident postcode claims is \$6.94. The post-reform risk premium is 26% lower than the pre-reform risk premium, mostly driven by the expected reduction in frequency of NSW postcode claims. The net impact on advised risk premium of the modelling change for NSW accident postcode claims is negligible.

Economic assumptions

Taylor Fry 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

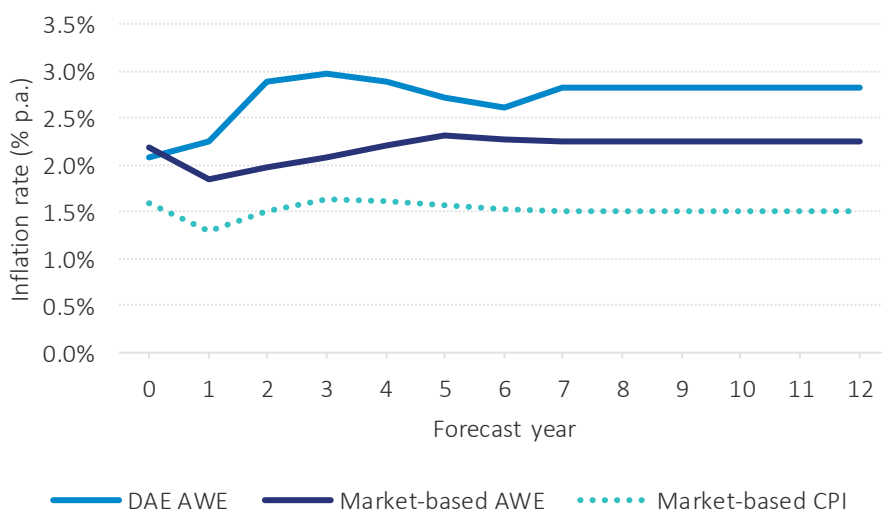
The economic gap is the difference between the projected risk-free investment return and the projected QLD AWE inflation rate up to the time of claim payment. A higher economic gap translates to a lower CTP premium.

The projected risk-free investment return is derived from prevailing Australian Government bond yield curves available at the time of premium setting (as at 3rd March 2020).

At the Dec-19 review, we have provided two projected QLD AWE inflation rates based on information available at the time of premium setting:

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

Figure 8 Projected wage inflation rates

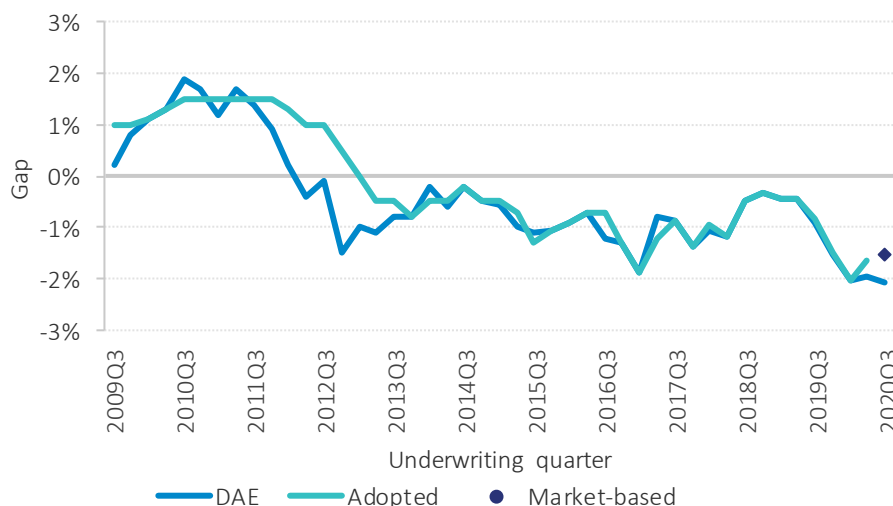


For the 2020Q3 underwriting quarter, the projected flat wage inflation rates are:

- » **2.65% p.a.** based on DAE inflation forecasts
- » **2.13% p.a.** based on the market-based model

The market-based estimate of Consumer Price Index (CPI) inflation rates has also been shown for reference.

Figure 9 Economic gap



For the 2020Q3 underwriting quarter, **the economic gap based on the DAE forecast is -2.06%**. This is made up of a:

- » Discount rate of 0.59% p.a. and
- » Wage inflation of 2.65% p.a.

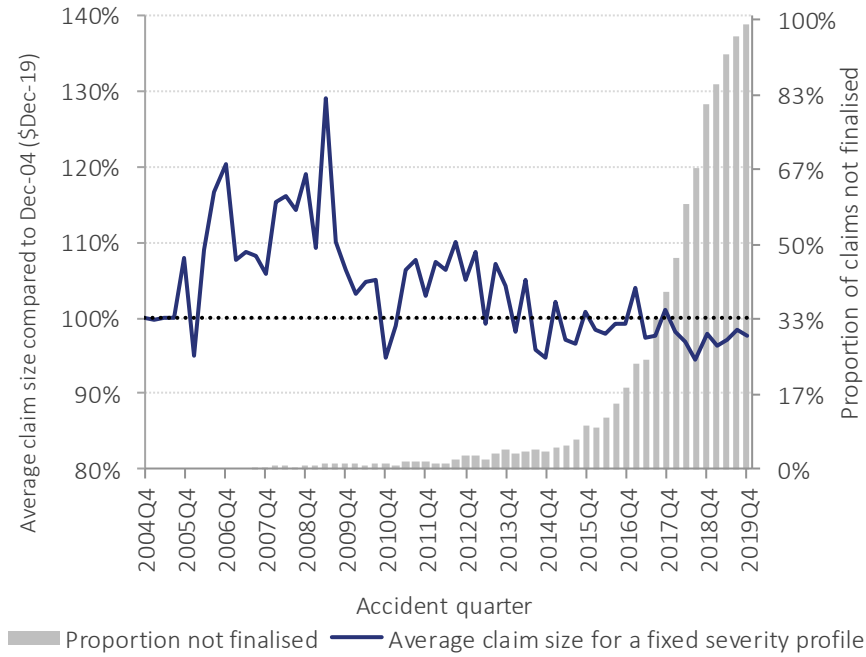
The economic gap reduced from 1.96% advised at the previous review.

The economic gap for the 2020Q3 underwriting quarter **based on the market-based model is -1.54%**.

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 10 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 2018 and 2019 to exhibit superimposed inflation before finalisation:

- » At 0% p.a. future superimposed inflation, the 5-year change in average claim size to Dec-19 is 0.08% p.a.
- » At 1% p.a. future superimposed inflation, the 5-year change to Dec-19 is 0.64% p.a.

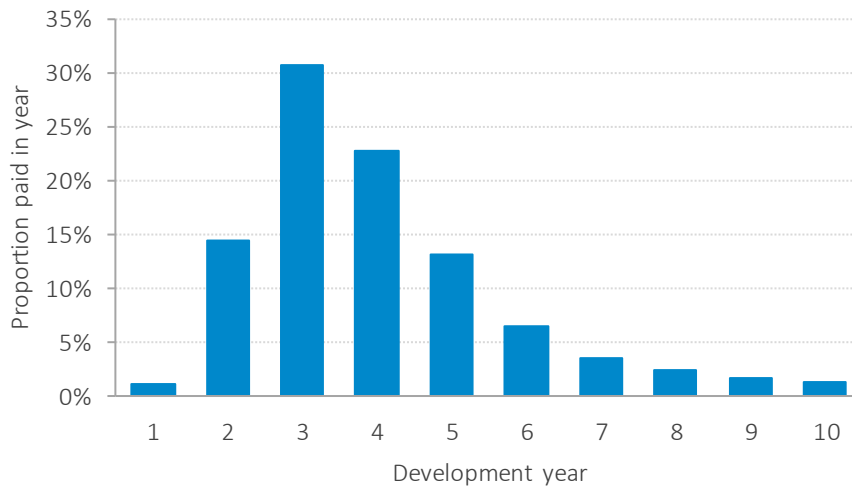
Other premium components

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 11 Payment pattern



The payment pattern at this review has been lengthened relative to the payment pattern advised at Dec-18, reflecting the lower finalisation rates over the past year. **The mean term from underwriting to payment is 3.71 years.**



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