



# Motor Accident Insurance Commission

Annual review of premium components as at 31 December 2022

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24 March 2023

# 1

Summary

# Risk premium estimates

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Previous annual review  
*Dec-21*

**\$187.18**

TF Advised

*Frequency: 0.180%*  
*ACS: \$103,989*

This annual review  
*Dec-22*

**\$190.08**

TF Advised

*Frequency: 0.167%*  
*ACS: \$113,820*

# Changes since the Dec-21 review

	Experience	Response	Change to RP
Core claim frequency	Notifications were <b>8% lower than expected</b> in the 2022 year	<ul style="list-style-type: none"> <li>The core claim frequency assumption has <b>reduced by 7%</b></li> <li>We have placed more weight on favourable 2022 experience which appears to have been driven by low traffic volumes</li> </ul>	<b>- \$12.54</b>
Claim severity profile	Experience was <b>overall neutral</b> this year	<ul style="list-style-type: none"> <li>A reduction in the proportion of Severity 1Y claims was largely offset by an increase in the proportion of Severity 2 claims</li> <li>Movements are minor across the other severity groups</li> </ul>	<b>+ \$0.06</b>
Core average claim size	Overall average claim size experience was <b>6% higher than expected</b> in the 2022 year	<ul style="list-style-type: none"> <li>Experience for all severities except Severity 3 was higher than expected over 2022</li> <li>An overall <b>3% increase</b> in ACS, driven by increases for Sev1Y and Sev2 and the unwinding of the Claims Mix Model</li> </ul>	<b>+ \$4.97</b>
IS, WC & NSW assumptions	Frequency lower than expected, ACS higher than expected	<ul style="list-style-type: none"> <li>Frequency for NSW and WC claims reduced in response to favourable experience</li> <li>Partially offset by higher ACS selections</li> </ul>	<b>- \$0.98</b>
<b>Weakening of actuarial assumptions in response to scheme experience</b>			<b>- \$8.49</b>
<b>Economic assumptions:</b> 6.1% increase over the year using the smoothed seasonally adjusted Nov-22 ABS AWE series*			<b>+ \$11.39</b>
<b>Overall change:</b> Risk premium estimate increases from \$187.18 at Dec-21 to <b>\$190.08</b> at this review (in Dec-22 values)			<b>+ \$2.90</b>

\*Although not impacting the risk premium in Dec-22 values, the economic gap increased from -1.15% to -0.40%

# Risk premium components

Components of the Estimated Risk Premium for the 2023Q3 underwriting quarter

Risk premium components	Frequency	Average claim size (\$)	Risk premium (\$)
<b>Core claims</b>			
Baseline	0.1475%	122,197	180.24
<b>Estimated core claims</b>	<b>0.1475%</b>	<b>122,197</b>	<b>180.24</b>
NSW accident postcode claims	0.0054%	143,374	7.71
Interstate sharing	0.0015%	71,920	1.08
Workers' compensation recovery	0.0129%	8,118	1.05
<b>Estimated risk premium at 31 Dec 2022</b>	<b>0.1670%</b>	<b>113,820</b>	<b>\$190.08</b>

# 2

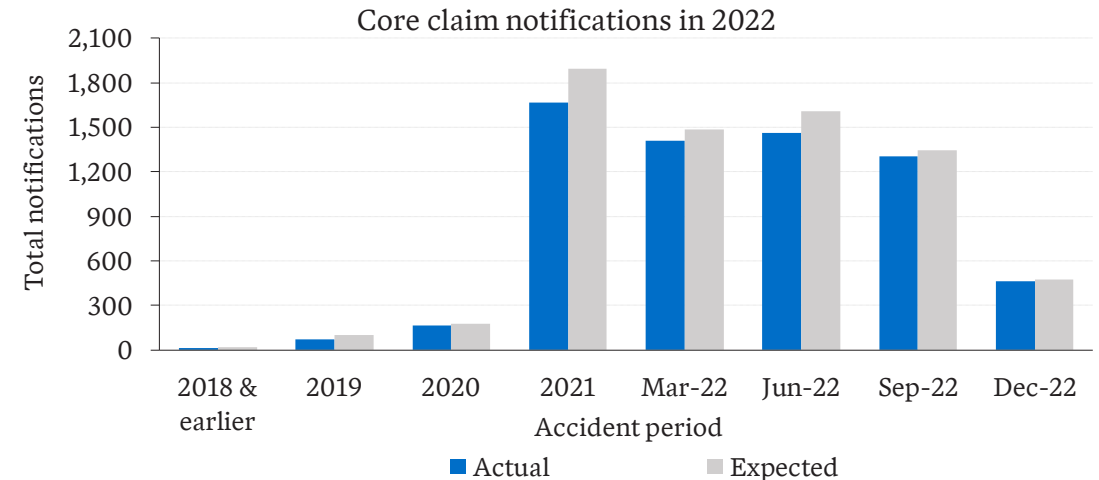
Core claim frequency

# Claim notifications have been lower than forecast at Dec-21

## Experience

- We have observed 4 successive quarters of favourable notification experience with notifications over 2022 being **8% lower** than Dec-21 forecasts
  - This lower-than-expected experience was consistent across all accident years
  - The early experience for the Dec-22 accident quarter is mostly in-line with expectations, noting this accident period is underdeveloped
- The favourable notification experience appears to be largely driven by **low traffic volumes** over 2022 (see next slide)

## Projection

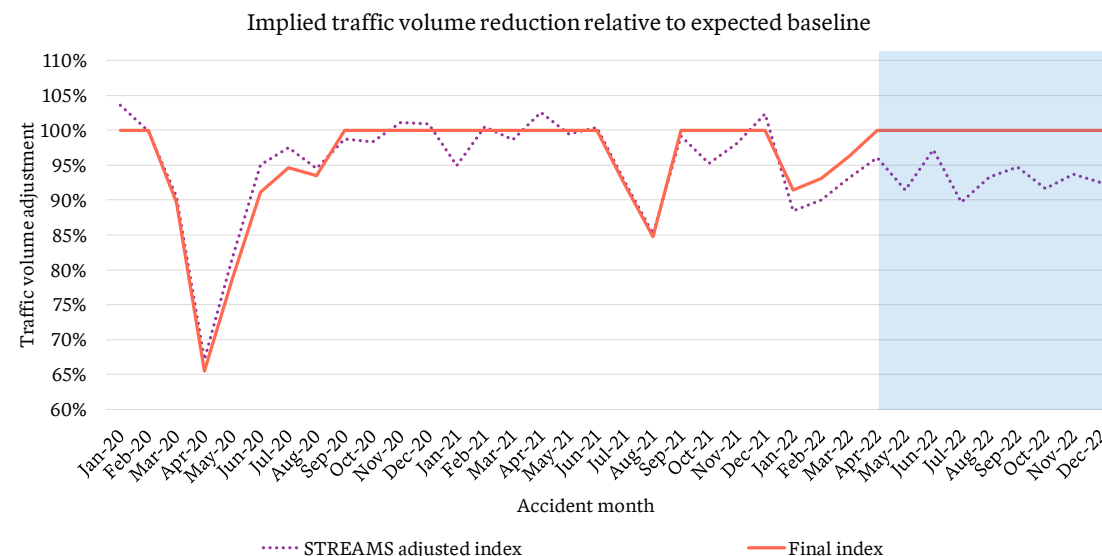


# Traffic volumes have remained low over the past year

## Experience

- The graph on the right shows the **reduction in seasonally adjusted traffic volumes** compared to 2019 levels using the STREAMS dataset provided by the TMR
- The adjusted STREAMS index (which allows for the changes in the number of registered vehicles at each accident month) shows:
  - Significant depressions in traffic volumes over 2020 and 2021 due to **COVID-related lockdowns**
  - A reduction in traffic volume over Mar-22 quarter due to the **Eastern Australian Floods and longer school holidays**
- We adjusted experience to **exclude the effect of these extreme events** from our baseline claim frequency assumption
- Traffic volumes over **Jun-22, Sep-22 and Dec-22** quarters have **been consistently low**
  - No adjustments have been made for low traffic volumes over these quarters as they have not resulted from identifiable extreme events

## Projection



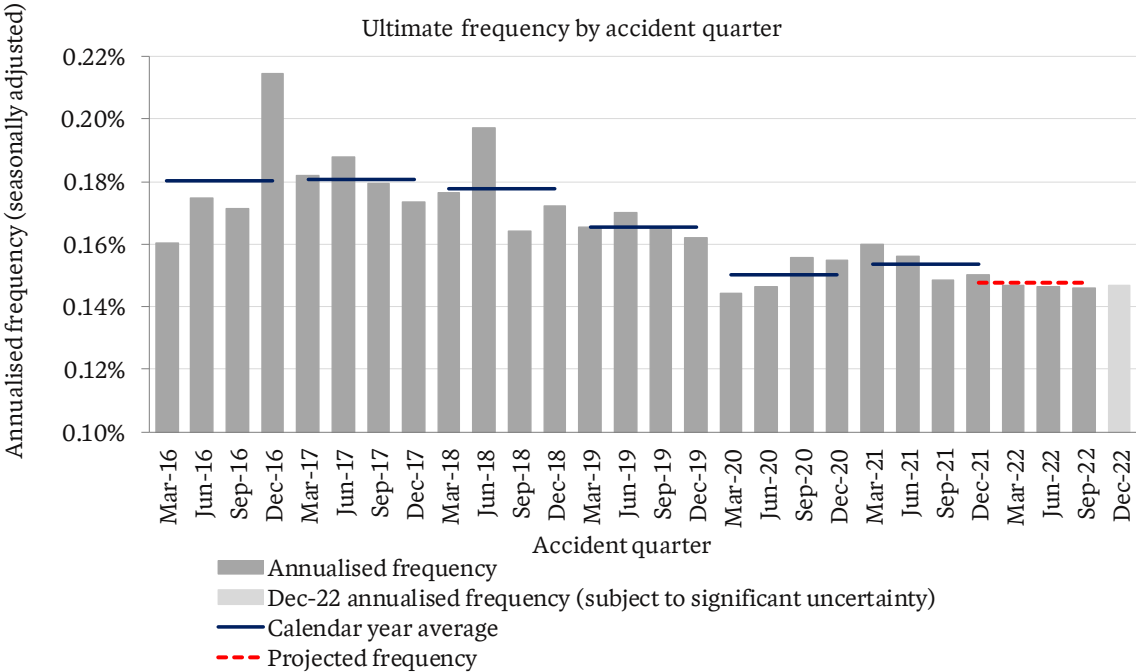
\* Adjustments for 2020, 2021 and 2022Q1 (orange line) are unchanged from the previous review.



# Core claim frequency has decreased over the year

Experience	Projection
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- The chart shows a **clear decrease** in frequency in accident year 2022 relative to 2021, which corresponds with low traffic volumes over the same period
- Our estimated core claim frequency for the 2023Q3 underwriting quarter is **0.1475%**, representing a **7% decrease** from our frequency assumption of 0.1580% at Dec-21
- The frequency assumption is estimated using a 1-year average over the **Dec-21 to Sep-22 accident quarters**



# 3

Severity profile

# Severity profile experience has been neutral

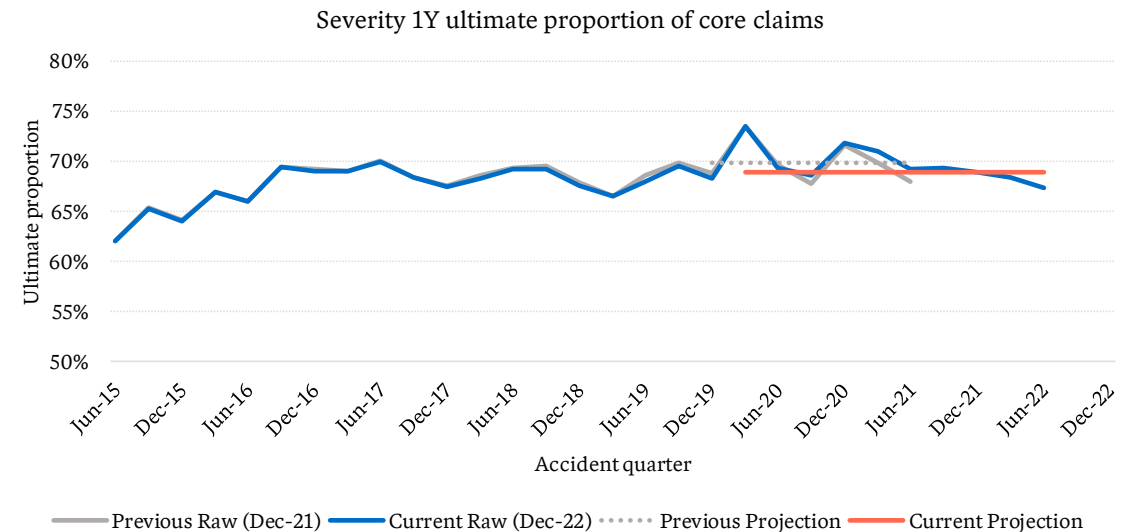
- Experience was overall **neutral** this year across the severity groups, resulting in a small net **\$0.1 increase** to the risk premium
- The reduction in the proportion of Severity 1Y claims has been largely offset by a small increase in the proportion of Severity 2 claims
- Movements are minor across the other severity groups

Severity	Estimated ultimate severity profile in future			Impact on risk premium (\$)
	Dec-21 basis	Dec-22 basis	Movement	
1N	7.4%	7.5%	0.1%	+0.0
1Y	69.8%	68.9%	-0.9%	-1.1
2	12.2%	12.5%	0.3%	+0.7
3	5.8%	5.8%	0.0%	+0.0
4	0.9%	0.9%	0.0%	-0.0
5	0.4%	0.4%	0.0%	+0.4
6	1.0%	1.0%	0.0%	+0.0
9NA	2.5%	3.1%	0.5%	+0.1
All	100%	100%	-	+0.1

# Severity 1Y experience has emerged lower than forecast at Dec-21

Severity 1N	Severity 1Y	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 9
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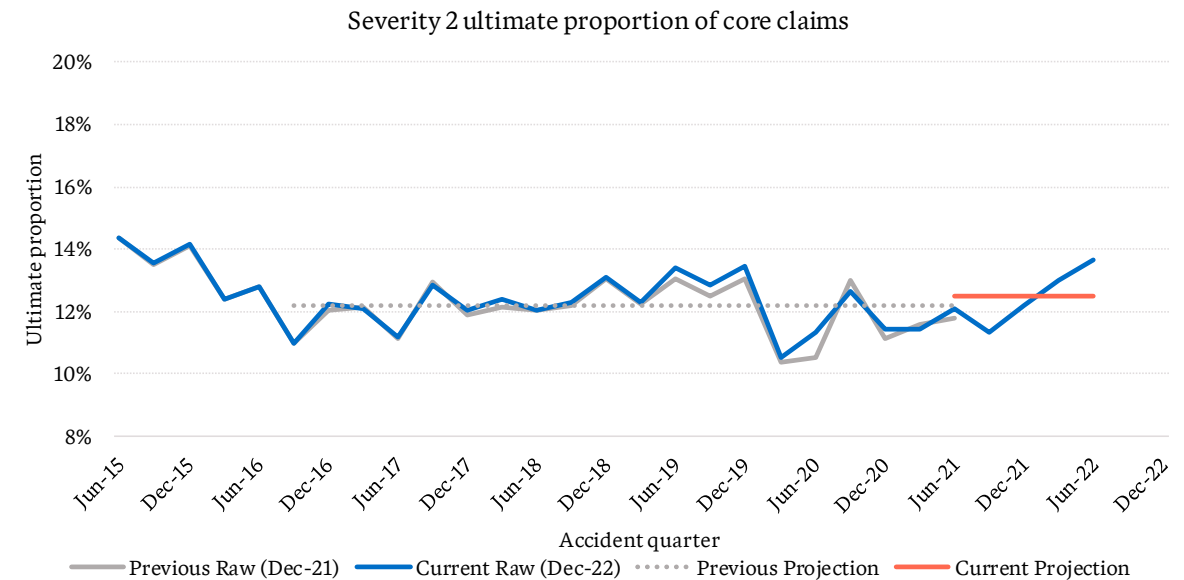
- Experience for severity 1 and legally represented claims (1Y) emerged **lower** than our Dec-21 forecast of the **proportion** of claims for recent accident periods
- Experience for the recent accident quarters have emerged at levels **similar to the pre-claim farming reform** proportions
- The severity 1Y frequency and proportion **selections have decreased** from our Dec-21 selection



# Severity 2 experience has emerged higher than forecast at Dec-21

Severity 1N	Severity 1Y	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 9
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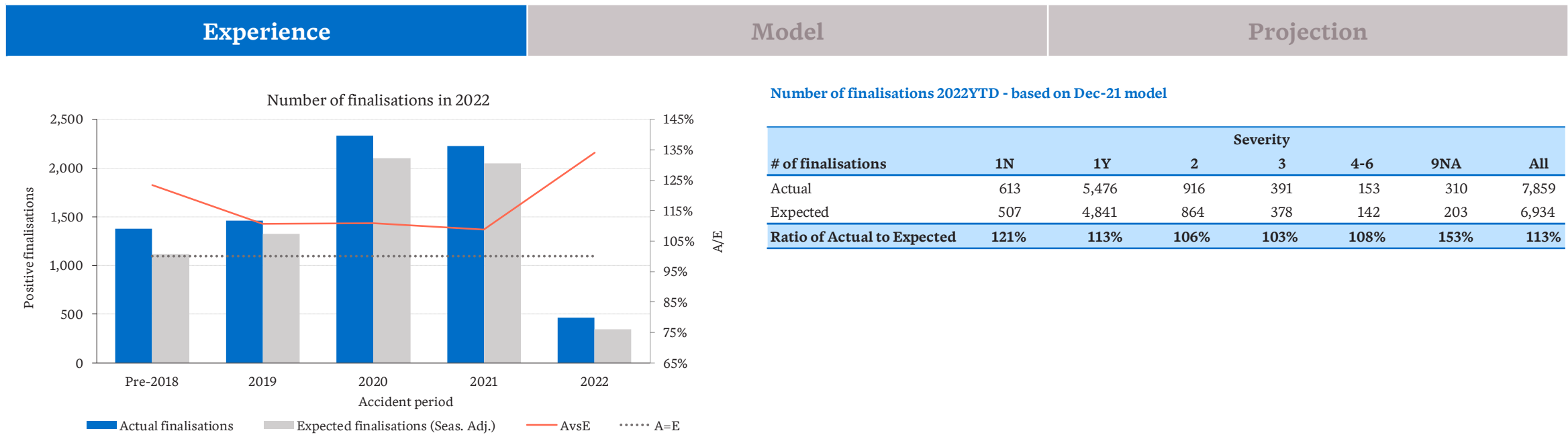
- Experience for severity 2 claims emerged **higher** than our Dec-21 forecast of the **proportion** of claims for recent accident periods
- The previous forecast assigned less weight to the low experience over 2020
- The severity 2 frequency and proportion **selections have increased** from our Dec-21 selection



# 4

Baseline core claim size

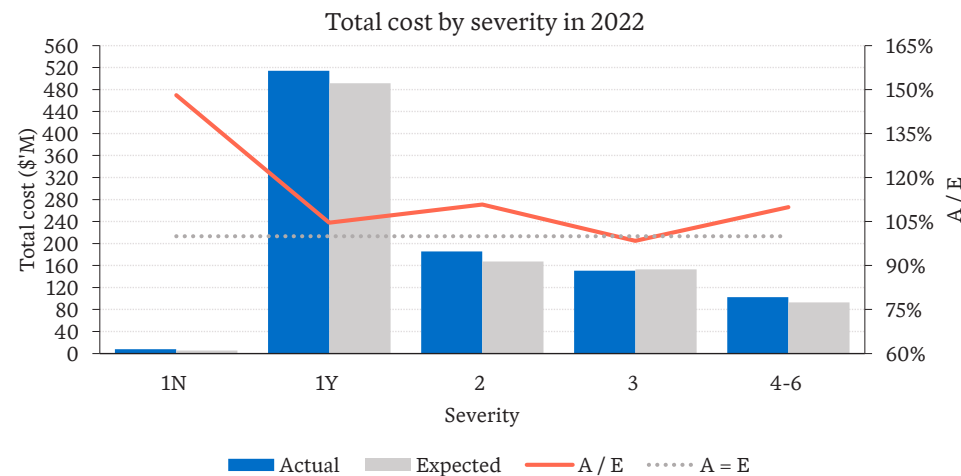
# Finalisations sped up in 2022



- The actual number of positive finalisations in 2022 were 13% higher than forecast at the Dec-21 review
- The actual number of positive finalisations in the Dec-22 quarter were 25% higher than expected at the Sep-22 review
- There has been a speed up in finalisations over 2022, observed across all severity groups, which accelerated during the Dec-22 quarter

# The average size of finalised claims was higher than forecast at Dec-21

Experience	Model	Projection
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Average claim size in 2022 - based on Dec-21 model

ACS (\$000s)	Severity						All
	1N	1Y	2	3	4-6	9NA	
Actual	13	94	203	377	660	28	124
Expected	9	90	183	383	600	16	117
Ratio of Actual to Expected	148%	105%	111%	98%	110%	182%	106%

Note: Severity 9NA not displayed on chart due to 3 large finalisations that distort the scale of the Y axes. MAIC has advised that claims have transitioned to other severities since the Dec-22 data extract.

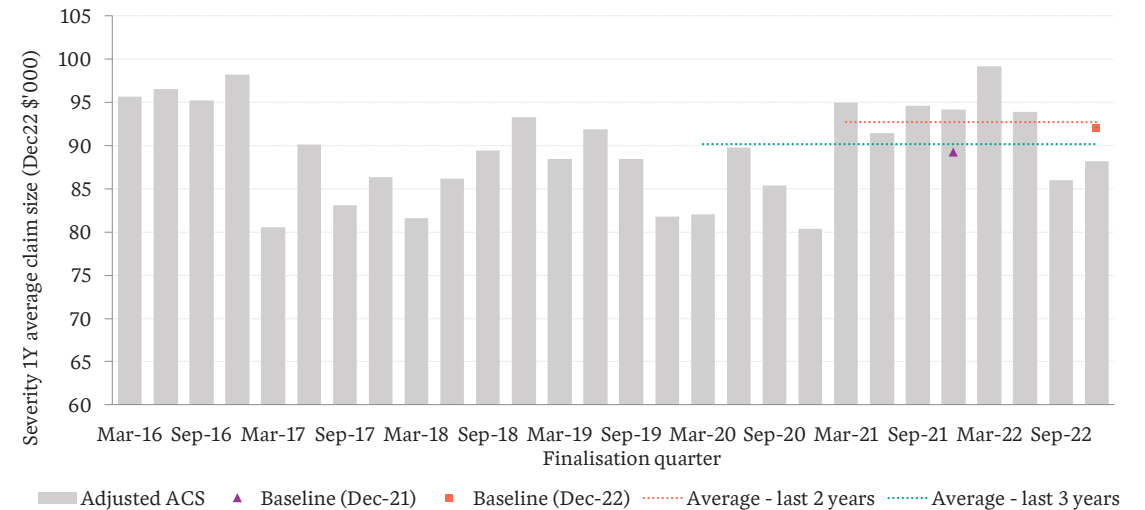
- The actual cost across all severities was 6% higher than projected at the Dec-21 review
- Experience was higher than expected across all severities except Severity 3
- Severity 9NA: high AvE ratio driven by 3 large finalisations in Dec-22 (accident years 2002, 2017, 2019)



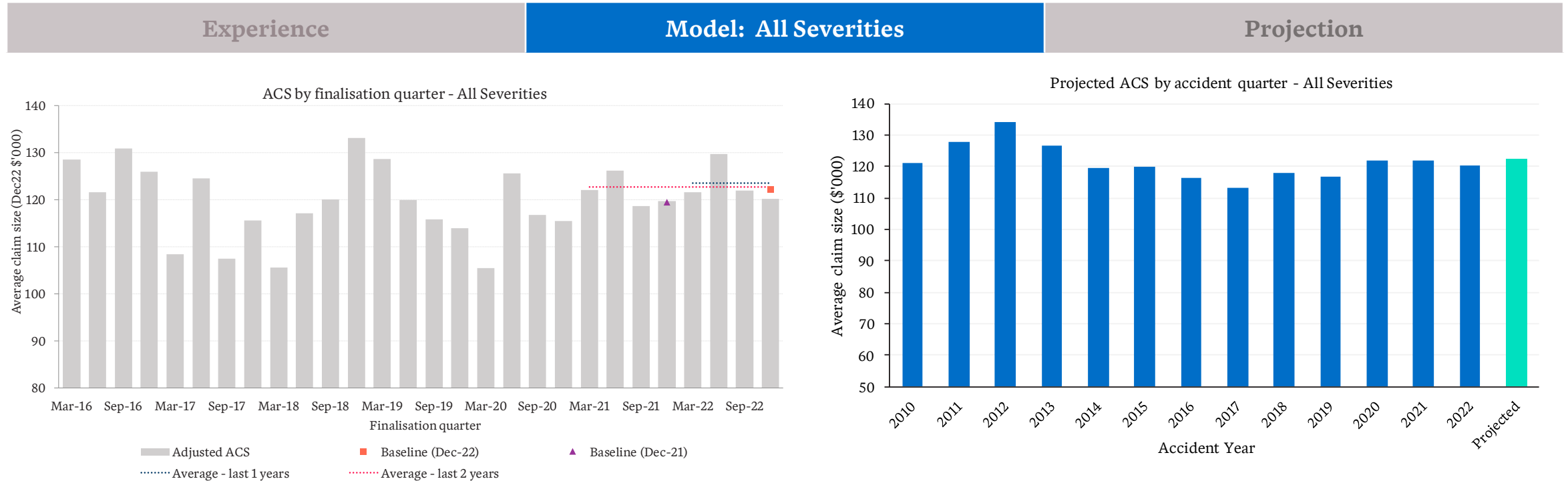
# Severity 1Y claim sizes have emerged higher than expected at Dec-21

Severity 1N	Severity 1Y	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 9
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- The finalised size experience for Severity 1Y claims has emerged **5% higher** over 2022 compared to our Dec-21 projections
- We have applied a 2-year averaging period across low-mid operational times when estimating the Severity 1Y average cost
- The averaging period for higher operational times is 3 years
- Experience over the year has led to a **3% increase** to our selected Severity 1Y average claim size



# The core average claim size assumption has increased by 2% since Dec-21



- Our baseline average claim size assumption has **increased by 2.3%** after standardising for the changes in the speed of finalisations and the severity profile
- The overall average claim size assumption is largely in line with the average experience of the past 2 years
- We observe an increase in the average claim size between AY2019 and AY2020 due to the severity profile strengthening associated with the claims farming reforms
- Our projection is in-line with AY2020 – AY2021

# The increase in the average claim size assumption is driven by severities 1Y and 2

Experience	Model	Projection			
<ul style="list-style-type: none"><li>The <b>baseline core claim size assumption</b> has <b>increased by 2.3%</b> over the year*</li><li>The increase is driven by the selected severity 1Y and severity 2 average claim sizes</li><li>Net changes to the severity profile this year have only a very small effect on the overall claim size</li></ul>	Estimated average claim size (Dec-22 \$000s)				
	Severity	Baseline as at Dec-21	Baseline as at Dec-22	Change (%)	Impact on risk premium (\$)
	1N	9	11	30.4%	+0.3
	1Y	89	92	3.1%	+2.8
	2	180	188	4.6%	+1.5
	3	368	360	-2.2%	-0.7
	4	664	694	4.5%	+0.4
	5	1,018	950	-6.7%	-0.4
	6	320	323	1.0%	+0.0
	9NA	14	14	2.6%	+0.0
	Total	119	122	2.3%	+4.0
	Change in SP	119		0.0%	+0.1
	Total	119	122	2.3%	+4.1

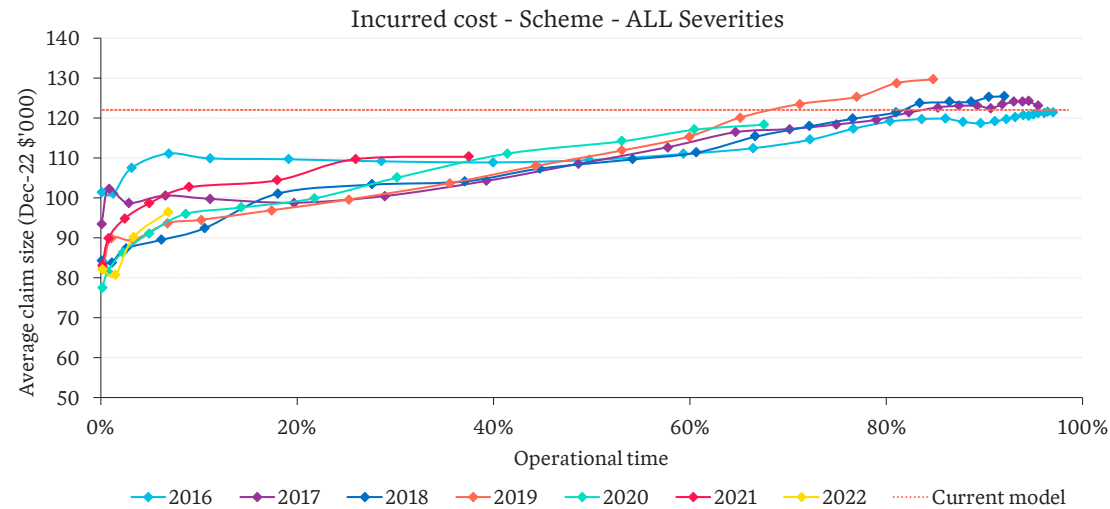
\* Excluding the impact of unwinding the claims mix model

# 5

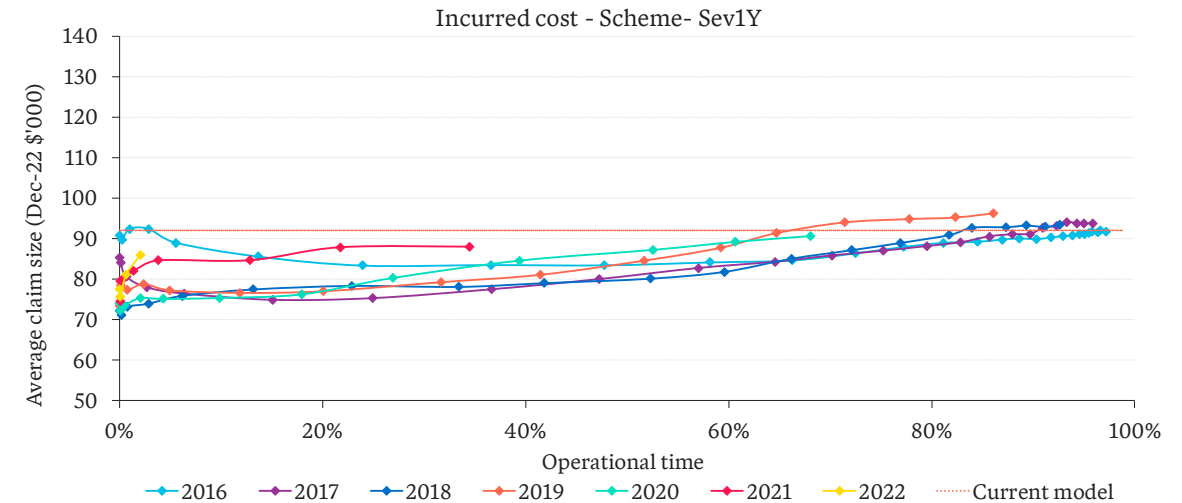
Incurred costs  
and psychological claims

# Incurred costs for recent AYs are developing at levels above older accident years

## Case estimates



## Psychological claims

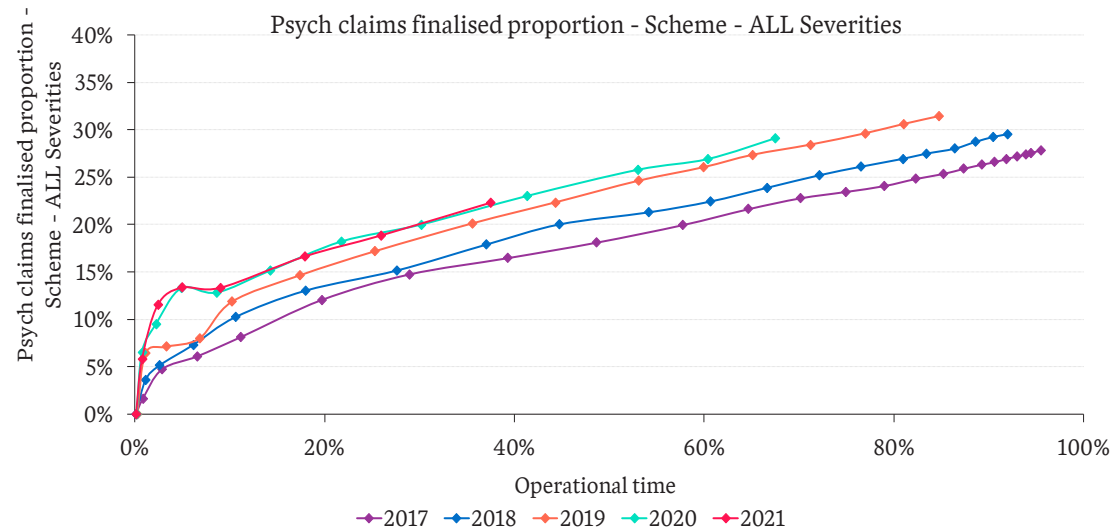


*Note: in these charts, we have scaled past incurred cost data for the expected cost differences between accident years so that they can be compared to our current ACS selection*

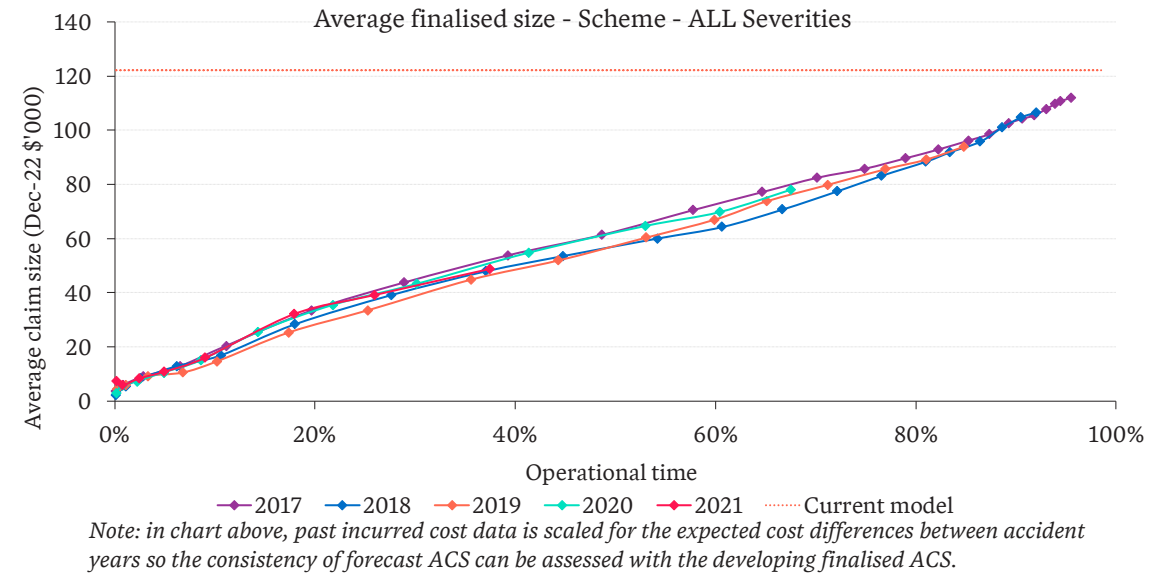
- Incurred costs for AYs 2018-2019 continue to develop **higher** than our current finalised cost projections allow for; this continues to be the result of high case estimates on open claims for one insurer
- AYs 2016-2017 develop in line with our average claim size projections across all severities, with AY2017 developing a little higher than our average claim size projection for severity 1Y
- AY2021 has developed above the levels seen over AYs 2016-2019 at the same stage of development likely due to earlier recognition of costs in insurer case estimates

# Psychological claims experience – all severities

## Case estimates



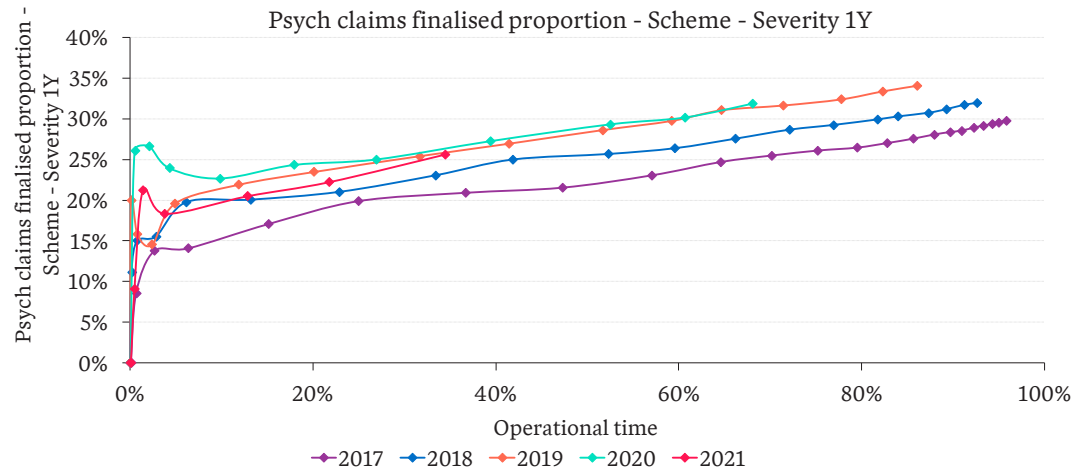
## Psychological claims



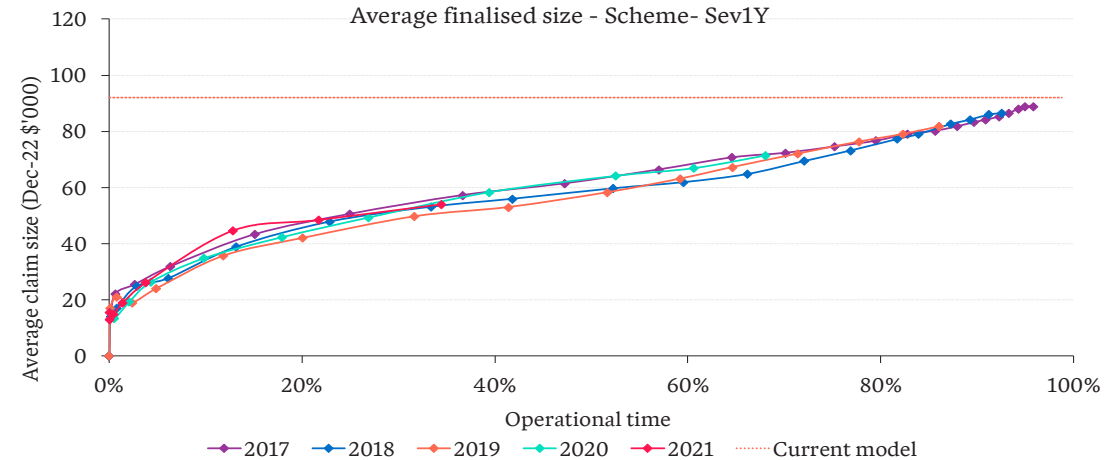
- Across all severities, there has been a year-on-year **increase in the proportion of finalised psychological claims** between AY2017 and AY2019, with the proportion of psychological claims then tracking at similar levels for AYs 2020 – 2022
- There is **no evidence** at Dec-22 that the finalised claim sizes for AY2018 and later are developing to a level **greater** than our current average claim size model allows for

# Psychological claims experience – severity 1Y

## Case estimates



## Psychological claims



Note: in chart above, past incurred cost data is scaled for the expected cost differences between accident years so the consistency of forecast ACS can be assessed with the developing finalised ACS.

- For severity 1Y, there has been a year-on-year **increase in the proportion of finalised psychological claims** between AY2017 and AY2019, with the proportion of psychological claims then tracking at similar levels for AYs 2020 – 2022
- Despite the increase in the proportion of finalised psychological claims, there is **no evidence at Dec-22** that the finalised claim sizes are developing to a level **greater** than our current average claim size model allows for
- For AY2018 and AY2019, at the same stage of development, the proportion of finalised psychological claims has increased relative to AY2017, but with little change to the average finalised cost. The proportion of open psychological claims has also increased relative to AY2017, but by less than the increase seen in finalised claims.

# 6

Risk premium uncertainty



# Scenarios illustrating key uncertainties associated with the risk premium estimate

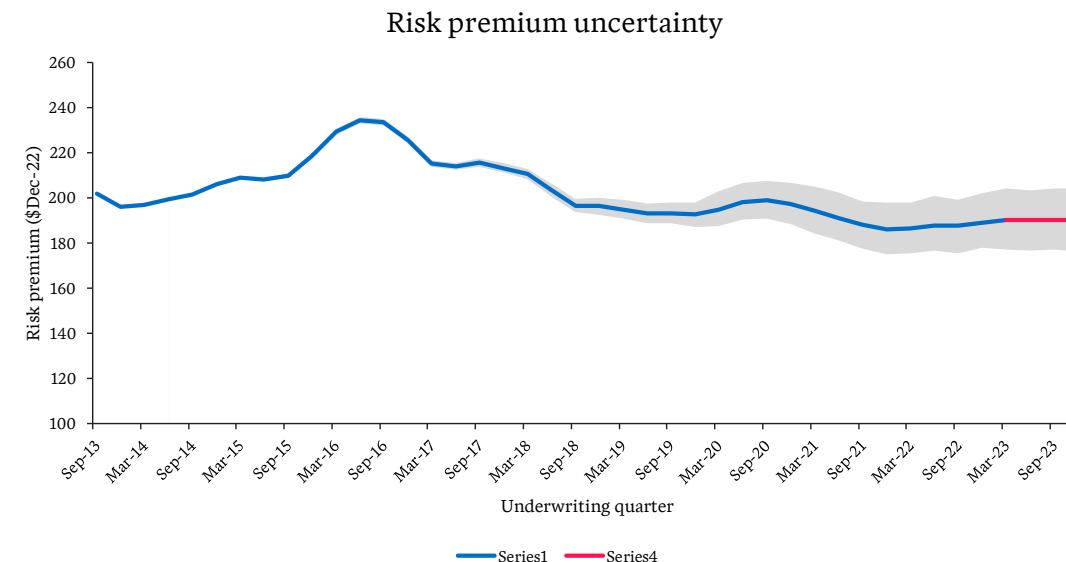
Risk premium scenarios	Impact on estimated risk premium
<b>Business as usual variation</b>	
Estimated risk premium - 50% confidence interval	+\$14.30 / -\$14.30
<b>Key Uncertainties</b>	
<b>Frequency/SP scenarios</b>	
Traffic volumes continue to stay down at 5% lower than 2019	-\$2.40
6 quarter averaging period is adopted for core claim frequency	+\$1.40
Severity 3+ frequency develops in line with AY2018	+\$1.80
Severity 3+ frequency develops in line with AY2022	-\$2.40
<b>Average claim size scenarios</b>	
ACS across all severities emerges in line with the finalisation experience over the last 1 year	+\$2.00
ACS across all severities emerges in line with the finalisation experience over the last 3 years	-\$2.20
Severity 1Y ACS emerges in line with the finalisation experience over the last 2 years	+\$0.70
Severity 1Y ACS emerges in line with the finalisation experience over the last 3 years	-\$1.90

Note:

- *Business as usual variation* represents the historical level of uncertainty in risk premium estimates.
- The *key uncertainties* show how the risk premium estimate would change if we made alternative assumptions.
- The estimated risk premium impacts across *business as usual* and *key uncertainty scenarios* are not additive.

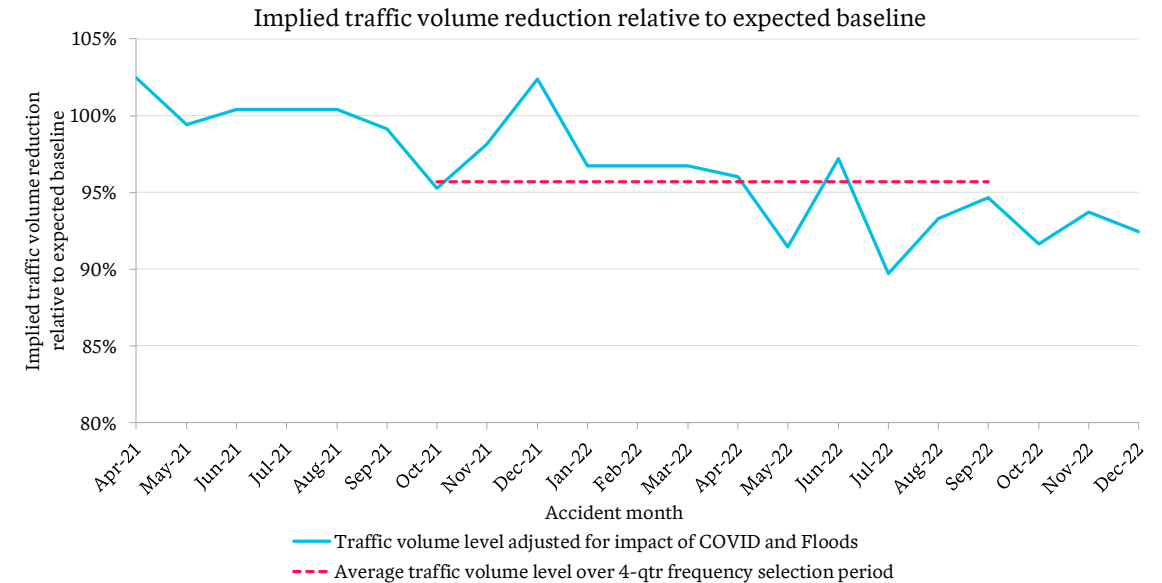
# Business as usual variation

- **Business as usual variation is estimated to be +/- 7.5% for underwriting quarter 2023Q3** – the range has been constructed such that there is an approximately 50% chance that the true risk premium will fall within the range (a 50% CI)
- The main source of this uncertainty is **risk premium evolution**:
  - The average claim for underwriting quarter 2023Q3 will finalise around 4 years later than the most recent finalised claim data available at this review. Historically there have been considerable movements in the risk premium over a 4-year period
- A comparison of our historical risk premium estimates with our current hindsight estimates of risk premium is consistent with a range of 6% to 9% depending on the historical periods analysed



# Impact of lower traffic volumes on core claim frequency

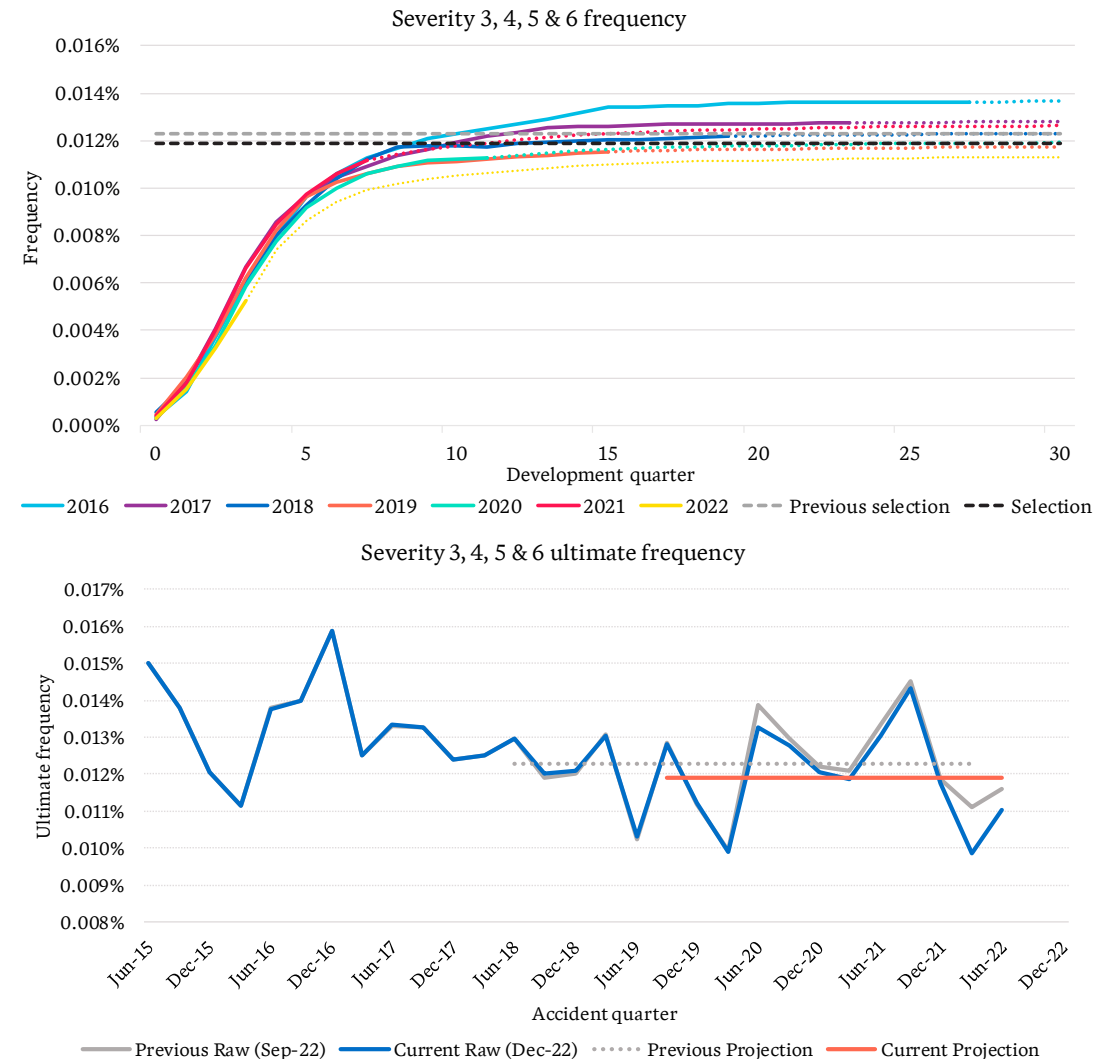
- Traffic volumes over 2022 were **~5.8% lower\*** than 2019 adjusted for the increase in vehicle registrations
- Our baseline frequency assumption is based on the average frequency experience over the Dec-21 to Sep-22 qtrs. Based on the STREAMS data, the average traffic volumes over this period were **~4.3% lower\*** than 2019
- Assuming future traffic volume levels stay 5% lower than 2019, then the corresponding reduction in claim frequency, together with a weakening of the overall severity profile, would result in the risk premium **decreasing by \$2.40**
- If the core frequency assumption is based on a longer 6-quarter averaging period between Jun-21 and Sep-22, the risk premium would **increase by \$1.40**



\* After removing the impact of the Eastern Australian floods from the Mar-22 experience

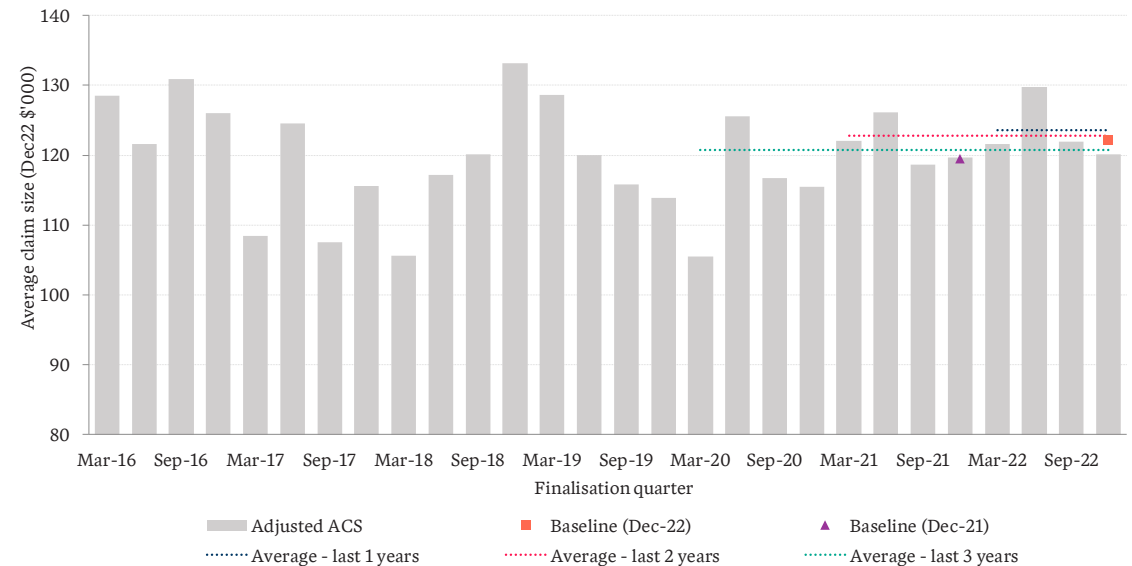
# Uncertainty in the frequency of high severity claims

- Our selected frequency for high severity claims (3, 4, 5 and 6) is based on the projected ultimate frequency for the 3-4 most recent accident years, resulting in a frequency between AY2018 and AY2022
- If the frequency for 2023Q3 is assumed to emerge similarly to that projected for [AY2018](#) then the risk premium estimate would [increase by \\$1.80](#)
- Frequency for AY2022 is emerging lower than previous accident years. The risk premium would [decrease by \\$2.40](#) if 2023Q3 frequency develops in line with [AY2022](#)



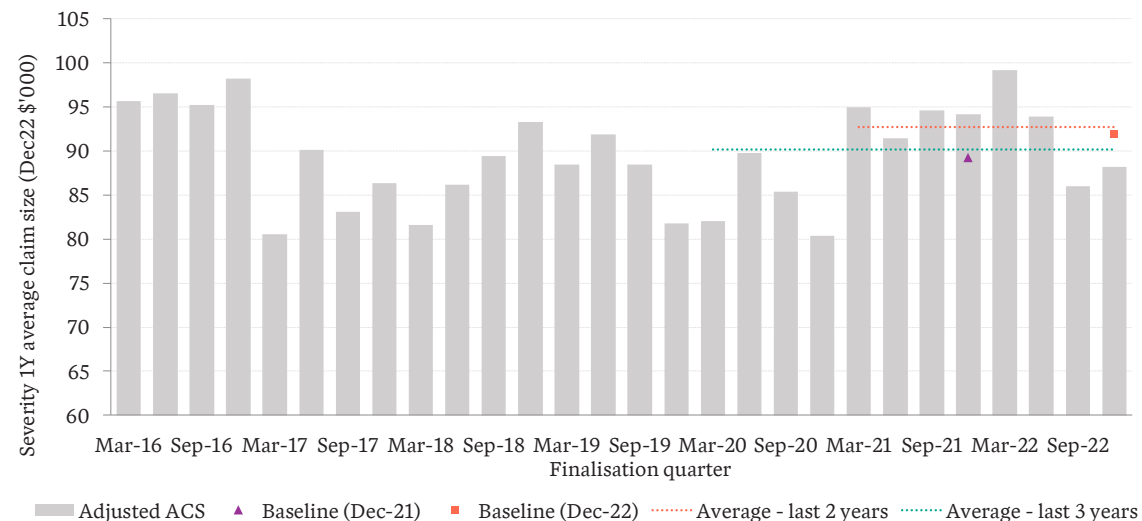
# All severities average claim size

- The overall average claim size assumption falls between the average experience of the last 1 to 3 years
- If average claim size across all claims continues to emerge at levels similar to that experienced over **the last year** then the risk premium would **increase by \$2.00**
- If average claim size across all claims continues to emerge at levels similar to that experienced over the **last 3 years** then the risk premium would **decrease by \$2.20**



# Severity 1Y average claim size

- The Severity 1Y average claim size stepped up materially for finalisations between Mar-21 and Jun-22
- The baseline projection at Dec-22 is based on a mix of a 2-year average for lower operational times and a 3-year average for higher operational time claims
- If we were to calibrate the Sev1Y ACS to a **2-year average throughout**, which excludes some of the lower ACS experience before Mar-21, the risk premium would **increase by \$0.70**
- Calibrating to a 3-year average throughout, reflecting more of the lower experience prior to Mar-21, the risk premium would **decrease by \$1.90**

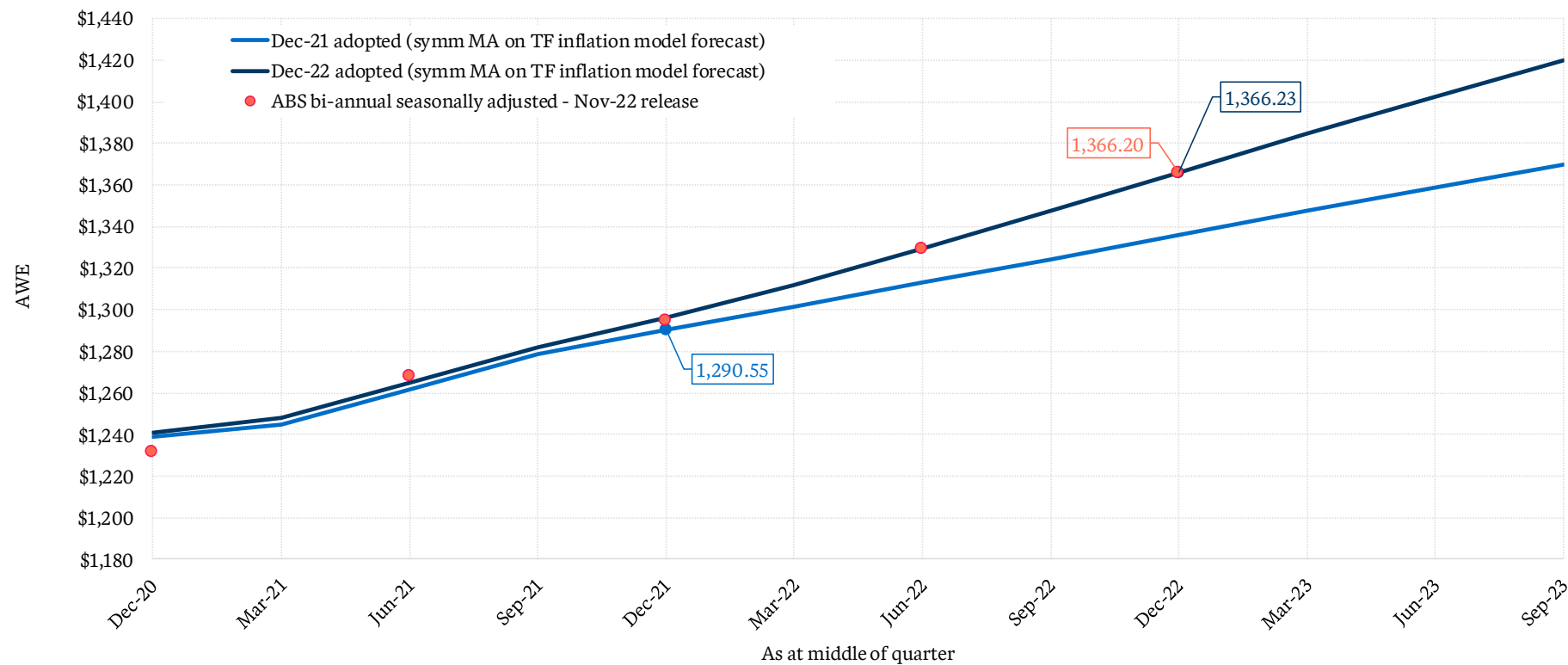


7

Economic parameters

# Wage inflation to 31 December 2022

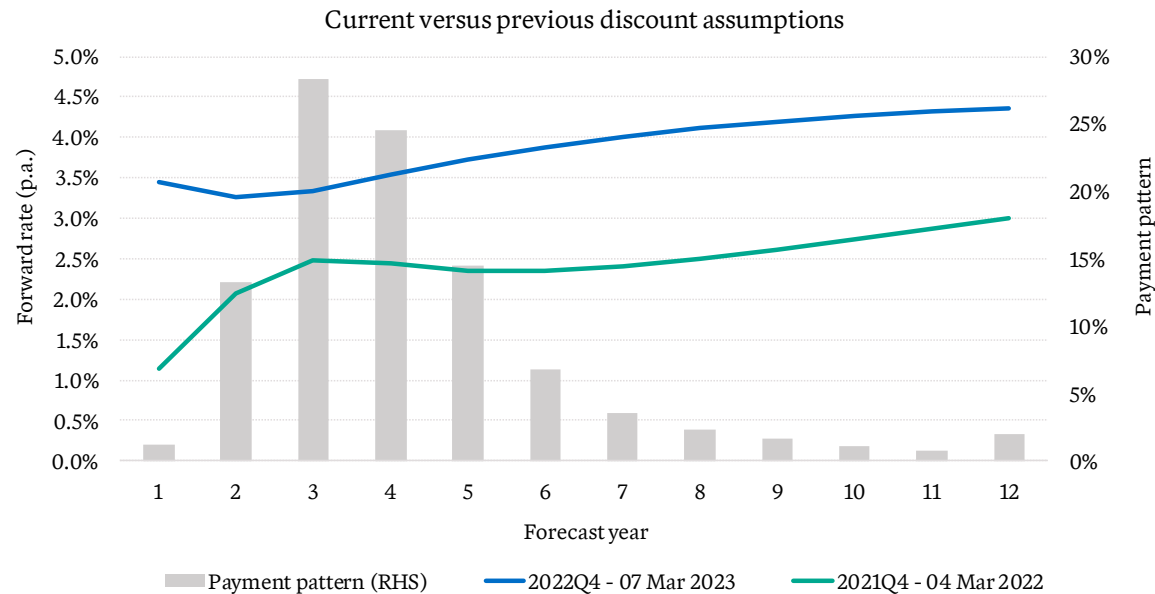
- We have applied the future inflation rates forecast by the TF inflation model to the AWE result released by the ABS in Feb-23
- This results in an AWE increase of 6.08% from the Dec-21 quarter to the Dec-22 quarter



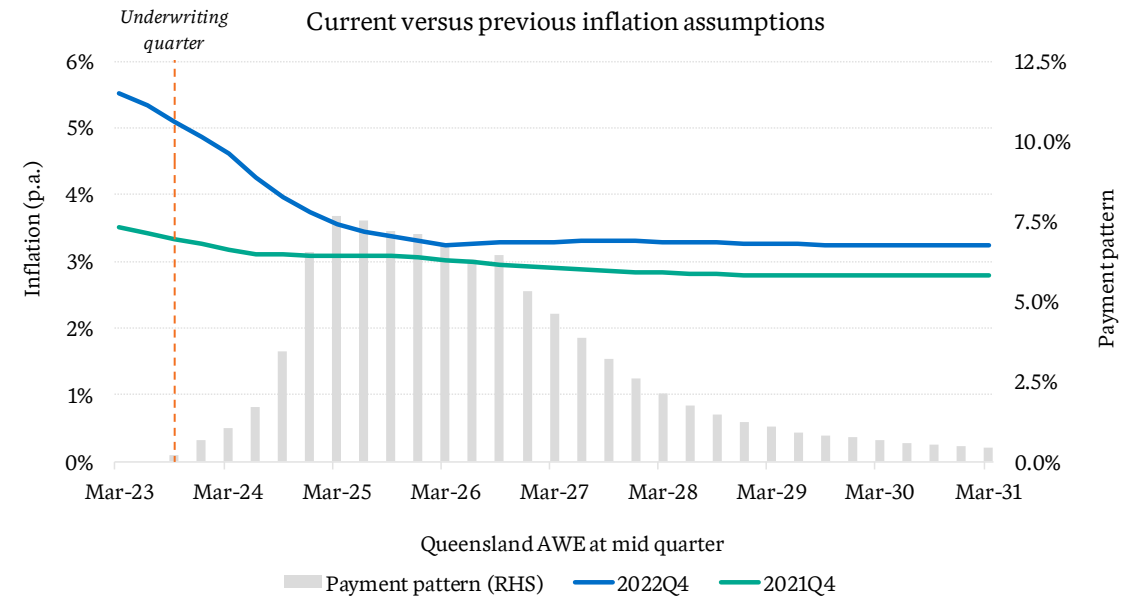


# Discount rates and future wage inflation

## Taylor Fry inflation model



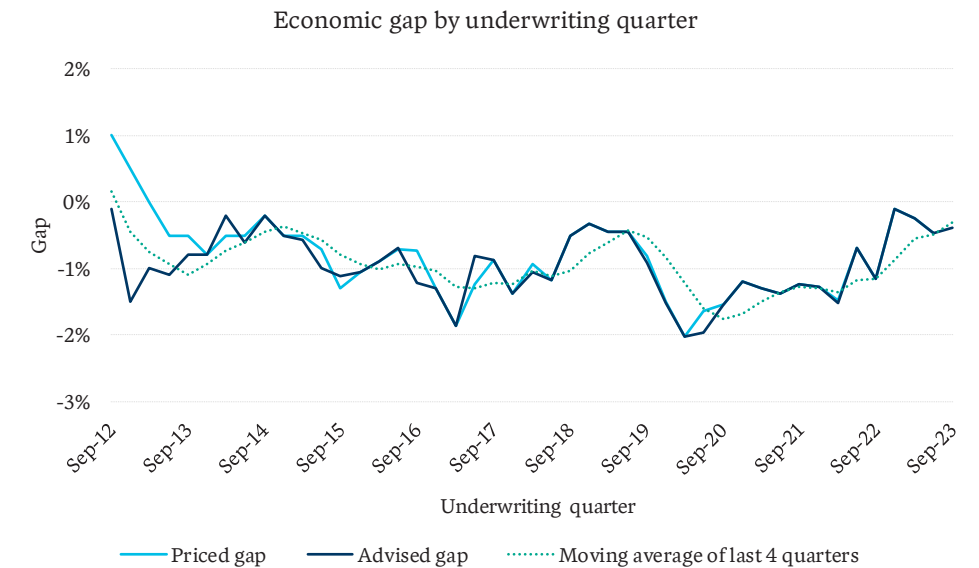
- Discount rates have been updated as at 7<sup>th</sup> March 2023
- Discount projections over short and long terms have **increased** significantly over the year



- Inflation projections over short and long terms are **higher** than projected at Dec-21
- In the short term, estimated CPI has increased due to nominal bond yields increasing by relatively more than inflation-linked bonds. Unemployment rates have also decreased, increasing projected AWE
- Assumed long term rates for CPI and AWE have increased

# Discount rates and future wage inflation – economic gap

Review	Economic assumption (%p.a.)		
	Discount rate	Wage inflation	Economic gap
Current	3.45%	3.85%	-0.40%
Last quarter	3.41%	3.87%	-0.46%
Last annual review	2.03%	3.17%	-1.15%
Change since:			
Last quarter	0.05%	-0.02%	<b>0.07%</b>
Last annual review	1.43%	0.67%	<b>0.75%</b>



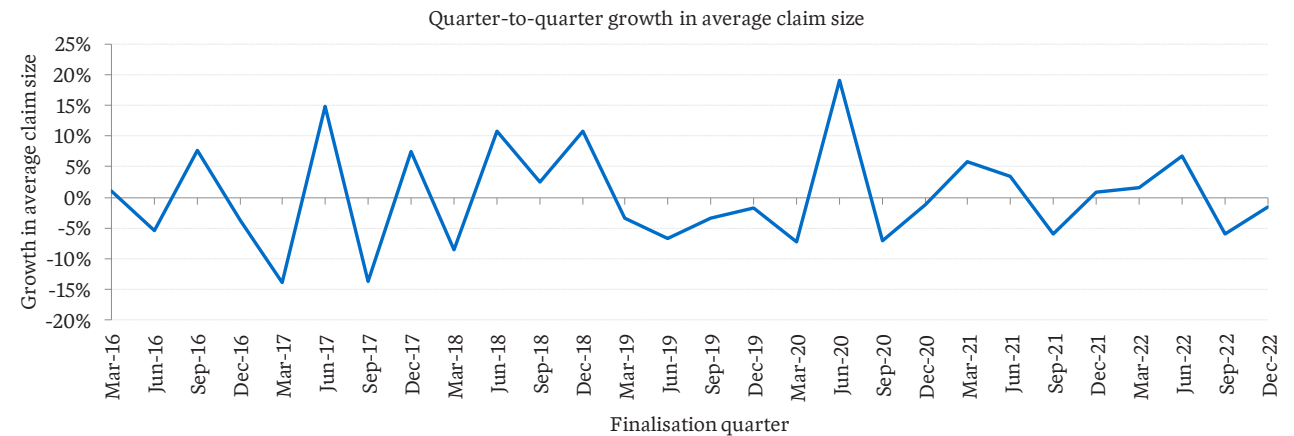
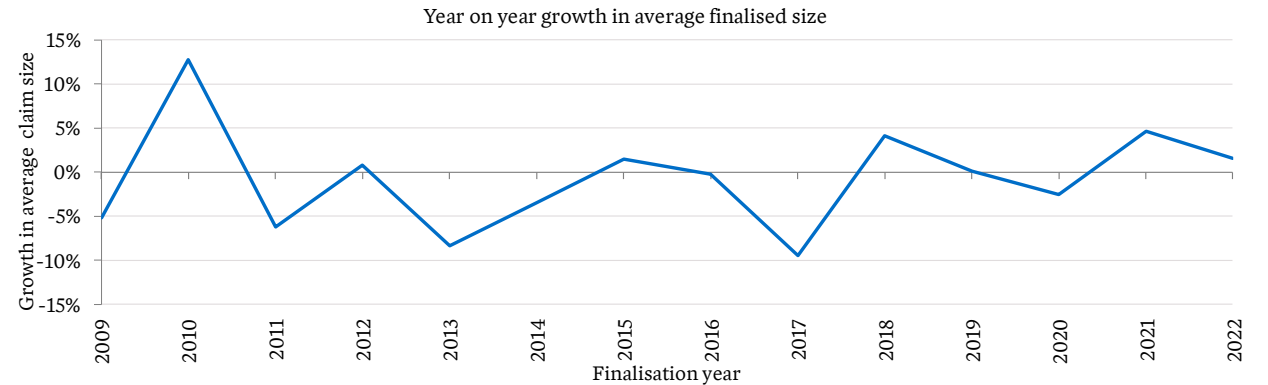
- The gap has **increased** from -1.15% at Dec-21 to -0.40% at Dec-22

# 8

Superimposed inflation

# Superimposed inflation has been benign over the long term

- The charts show **growth in average claim sizes** after controlling for severity profile and claims processing speed (operational time)
- Over the long term, superimposed inflation **has been benign**
- On a quarterly basis, the average claim size **decreased in both the Sep-22 and Dec-22 finalisation quarters**
- We recommend that future superimposed inflation assumptions are set based on observed long-term trends.
- Consistent with this approach, we are still recommending a superimposed inflation **assumption of 0%**





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