



CTP Insurance Regulator

Review of scheme efficiency
as at 31 December 2021

9 August 2022



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Executive summary

The South Australia Compulsory Third Party Insurance Regulator (the Regulator) has requested Taylor Fry to calculate the efficiency of the South Australian CTP scheme (the scheme).

We do this by calculating at a whole-of-scheme level the proportion of the customer premium that is returned to claimants, on average, across all vehicle classes.

Definition

When a premium is paid by the policyholder, it is invested and subsequently used to fund payments to various parties. We have defined the *scheme efficiency index* as:

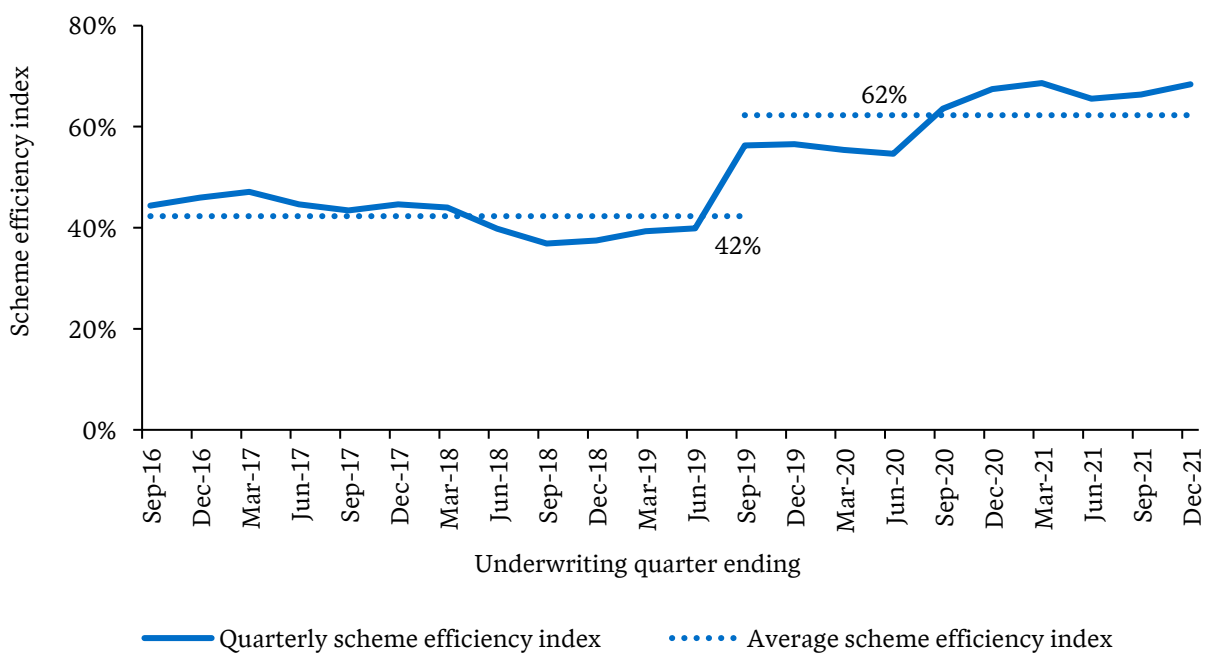
The proportion of the average premium paid by policyholders for CTP insurance that directly benefits claimants.

Payments to or in respect of claimants include payments made to legal representatives of those claimants.

Results

Figure 0.1 shows the scheme efficiency index since the SA CTP insurance marketplace was privatised in July 2016.

Figure 0.1 – Scheme efficiency results



The estimated scheme efficiency index is:

- **42% in the pre-competition period** (1 July 2016 to 30 June 2019)
- **62% since competition** from 1 July 2019.

The scheme efficiency has increased since competition commenced on 1 July 2019, largely driven by the reduction of insurer profit margins.

CTP claims take many years to resolve, so our assessment of the efficiency of past underwriting years evolves as claim experience emerges. As such, our results are highly uncertain for recent underwriting years. Uncertainty is heightened in this review because we are yet to observe many late claim finalisations since the 2013 tort reforms.



Background

1 Introduction

The Regulator has requested Taylor Fry calculate the efficiency of the scheme. We do this by calculating at a scheme level the proportion of the customer premium that is returned to claimants, on average, across all vehicle classes. Our assessment of scheme efficiency is based on claim and exposure data as at 31 December 2021.

Definition

The *scheme efficiency index* is the proportion of premium paid by policyholders for CTP insurance that directly benefits claimants. Table 1.1 shows our classification of customer premium components into claimant benefit and delivery cost categories, as agreed with the Regulator.

Table 1.1 – Scheme delivery by components

Scheme delivery	Components	Payment types
Claimant benefits	Direct claimant benefits	Treatment and care
		Economic loss
		Non-economic loss
		Other payments (legal plaintiff costs, consortium, etc.)
	Indirect claimant benefit ^(a)	Payments for hospital and emergency services
Delivery cost	Insurer profit	Insurers' profit margin
	Legal and investigation costs	Legal defendant costs and insurers' investigation costs
	Other scheme costs	Road safety services, blood sample testing, customer support and transaction, CTP scheme regulation and administration services
	Other insurer costs	Insurer head office, policy administration and marketing costs
		Reinsurance costs
		Claim handling expenses (CHE)

Notes:

(a) Indirect claimant benefits and other scheme cost are covered from the Scheme Services fee included in the customer premium.

On advice from the Regulator, we have included plaintiff legal fees as part of claimant benefits. Claimants have solicitor-client cost agreements with their legal representation. These are confidential between the claimant and their legal representation and hence not captured by the Regulator. As a result, we cannot distinguish completely between the total amount paid in plaintiff legal and the claimant benefits. Including plaintiff legal fees as part of claimant benefits is consistent with the approach taken in other jurisdictions.

We present the customer premium including GST and stamp duty. However, GST and stamp duty are considered neither claimant benefits nor delivery costs. Throughout this report, we attribute a proportionate amount of GST and stamp duty to claimant benefits so the scheme efficiency index is unaffected by these quantities.

The SA Lifetime Support Scheme Fund Levy is not a component of the CTP premium and sits outside the CTP premium as a separate statutory charge paid with vehicle registration. It was not included in scheme efficiency index calculation.

2 Approach

Overview of our approach to calculating the scheme efficiency index

The scheme efficiency index is the proportion of customer premium that is returned to the claimant as a benefit. More specifically, the scheme efficiency index, for any given underwriting quarter, is estimated as:

$$\frac{\text{Direct claimant benefits} + \text{Indirect claimant benefit}}{\text{Customer premium (includes Scheme Services fee)}}$$

Collected premium and Scheme Services fee are known from the time of premium filing. However, we are required to estimate claim payments to claimant as these are unknown and emerging.

We determine the scheme efficiency index by:

1. Calculating the inflated and discounted **hindsight risk premium** by relying on our estimates of risk cost
2. Calculating the **direct claimant benefits** by multiplying the hindsight risk premium by an estimated proportion of hindsight risk premium that relates to the claimant benefit heads of damage
3. Calculating the **scheme efficiency index** by combining various customer premium components according to the equation above.

We present all premiums as if the customer is not eligible for the Input Tax Credit entitlement.

Superimposed inflation

Future superimposed inflation (SII) has a material impact on hindsight insurer premium estimates and the scheme efficiency index because most claimant benefits for recent underwriting quarters are to be paid in the future. We advised a base SII range of 0% to 1% p.a., and used 0.5% p.a. – the midpoint of our advice – as our estimate of future SII when determining hindsight insurer premium estimates.

The recent hindsight insurer premium estimates are sensitive to the SII assumption. Table 2.1 shows two alternative scenarios we use to illustrate this sensitivity.

Table 2.1 – Superimposed inflation scenarios

Scenario	SII rate	Description
Lower base	0% p.a.	This is the lower end of our advised base superimposed inflation estimate
Upper base	1% p.a.	This is the upper end of our advised base superimposed inflation estimate

3 Reliances and limitations

Data

Taylor Fry have relied upon historical data and other quantitative information drawn from various sources, without audit or independent verification. The accuracy of results is dependent upon the accuracy and completeness of this underlying data. The most influential item of data is the SA CTP database and premium filings. This is the sole source of much of the data, so we have limited ability to conduct reconciliations to confirm accuracy. However, the analysis carried out would likely expose any significant internal inconsistencies. None have come to light, and we have accepted the contents of the database at face value.

We rely on data provided to the Regulator by the Motor Accident Commission (MAC). This MAC data relates to injuries incurred prior to 30 June 2016. We have not audited adjustments that the Regulator made to the MAC data to make it consistent with the data relating to injuries from 1 July 2016.

The scheme efficiency analysis uses data modified for the 2013 tort reforms and introduction of Lifetime Support Scheme in 2014. While we attempt to make pre-reform data comparable to the current environment, we cannot be certain that the modifications of pre-reform data make it consistent with post-reform experience.

Modelling

Our analysis is heavily dependent on our estimates of total claims cost from each accident quarter. These are derived from our annual risk premium review and so this report is subject to the same reliances and limitations as that advice.

In carrying out this analysis we have made a number of assumptions. For example, we have assumed that the claims handling expense ratio and the insurer head office, policy administration, marketing and reinsurance costs adopted by the Regulator are reasonable proxies for the actual expenses. To the extent that this assumption is false, the scheme efficiency estimates would change.

Additionally, CTP claims take many years to resolve, so our assessment of the profitability of past underwriting years evolves as claim experience emerges. As such, our results are highly uncertain for recent underwriting years.

Applying our estimates of claimant benefit proportion, which is already based on limited experience, to the risk cost adds additional uncertainty to our estimate of claimant benefit amount and consequentially, the scheme efficiency index. This is especially true for recent underwriting quarters.

Usage

The report has been prepared for the Regulator for public release. No reliance should be placed on this report for any other purpose without confirming with us that such a purpose is appropriate.

This report is to be considered in its entirety, as parts of the report in isolation may be misconstrued. If any part of this report is to be distributed or provided to other parties, then the entire report including all appendices and not excerpts must be distributed or provided.



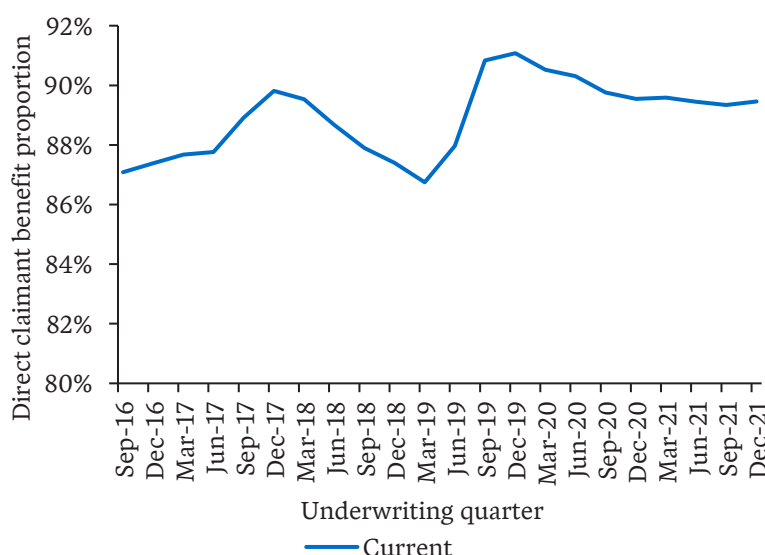
Scheme efficiency results

4 Scheme efficiency results

4.1 Direct claimant benefits

Direct claimant benefits are a significant component of claimant benefit. They include heads of damage such as economic loss, treatment expenses, etc.

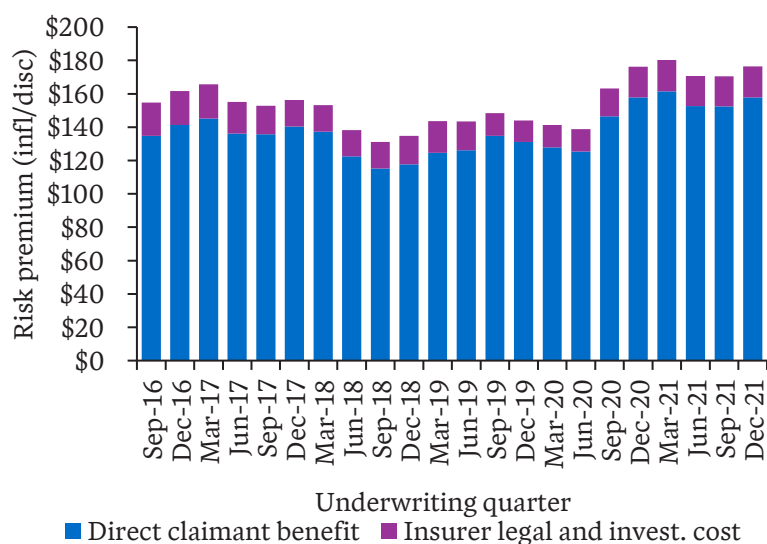
Figure 4.1 – Projected ultimate direct claimant benefit proportion by underwriting quarter



We project approximately 90% of an insurer's risk cost is paid to the claimant, although this varies by underwriting quarter. The remaining 10% is comprised of insurer's investigation and legal costs.

These estimates are highly uncertain and are likely to get revised upwards or downwards as more experience emerges.

Figure 4-2 – Breakdown of hindsight risk premium into components



Using the projected direct claimant benefit proportion shown in Figure 4.1, we calculate the amount of risk cost that is returned to the claimant as benefits, assuming future superimposed inflation of 0.5% p.a. The remainder of the risk premium is allocated to insurer legal and investigation costs.

For the competition period, the average direct claimant benefit was \$145, which is 90% of \$161 hindsight inflated and discounted risk premium.

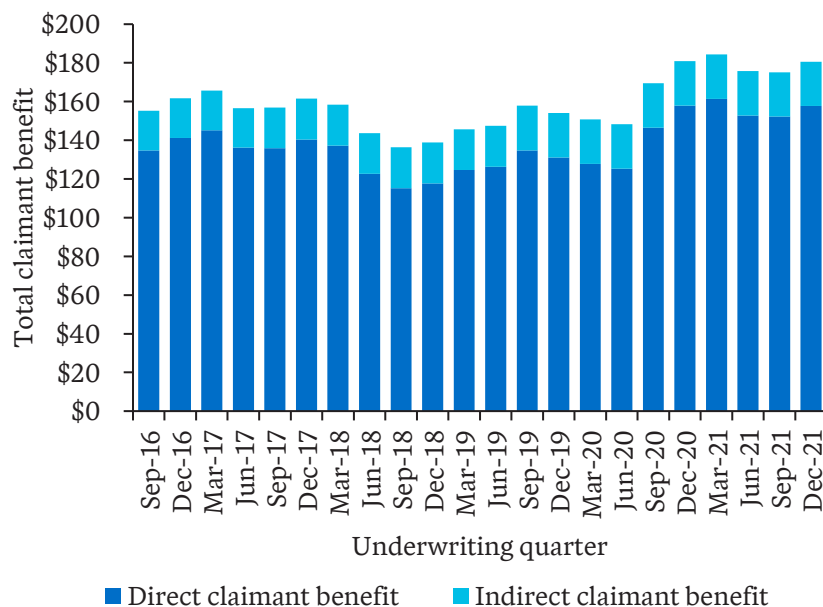
Table 4.1 – Total hindsight risk premium components average by period

Period	Direct claimant benefit proportion	Direct claimant benefit	Insurer legal and investigation cost	Total risk premium (infl/disc)
Pre-competition	88%	\$131.43	\$17.79	\$149.23
Competition	90%	\$144.77	\$16.20	\$160.96

4.2 Total claimant benefits

In addition to direct claimant benefits, we classify payments to hospital & emergency services – a component of the CTP Scheme Services fee – as claimant benefits.

Figure 4.3 – Total claimant benefit components by underwriting quarter



We add indirect claimant benefit amount, which consists of payments to hospital and emergency services, to our direct claimant benefit amount from Section 4.1 to get the total claimant benefit.

In the competition period, we estimate claimants get an average of \$168 back as claimant benefit.

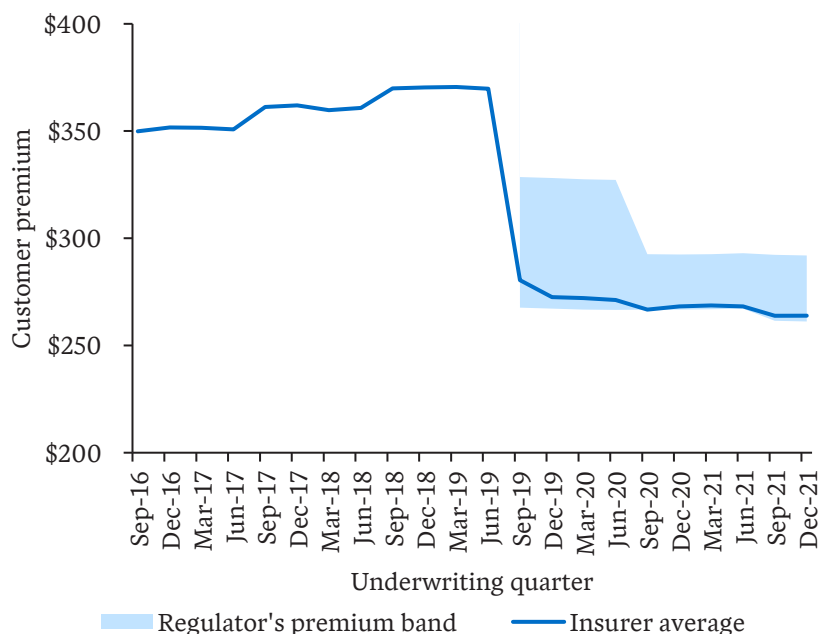
Table 4.2 – Total claimant benefits components average by period

Period	Direct claimant benefit	Indirect claimant benefit	Total claimant benefits
Pre-competition	\$131.43	\$20.90	\$152.34
Competition	\$144.77	\$22.95	\$167.71

4.3 Filed customer premium

The customer premium figures are averaged across all insurers and vehicle classes. They specifically include insurer premium components (risk cost, claims handling expense, etc.) and the CTP Scheme Services fee. The quoted premium includes GST and stamp duty.

Figure 4.4 – Filed customer premium by underwriting quarter



In the pre-competition period (1 July 2016 to 30 June 2019), all insurers charged a fixed premium, based on available actuarial advice, which was indexed every year.

Since the commencement of competition from 1 July 2019, insurers have been permitted to charge within the premium band set by the Regulator.

The insurer average customer premium has been very close to the floor of the premium band because most insurers have charged close to the floor for most vehicle classes.

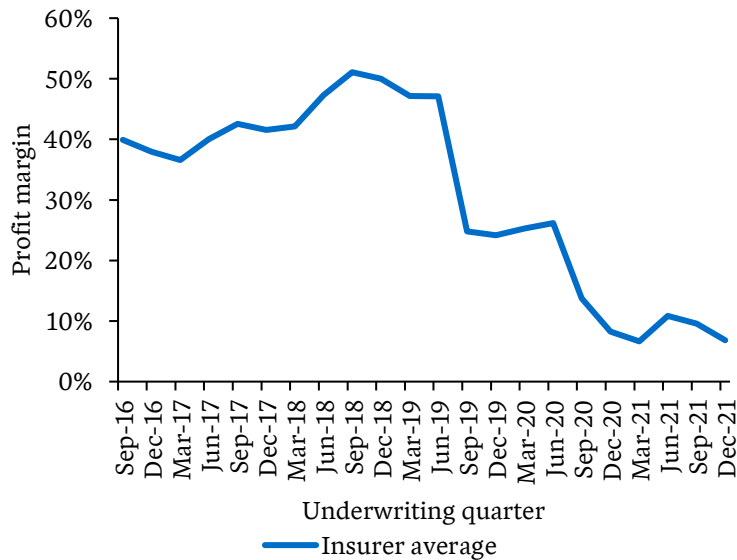
Table 4.3 – Average customer premium by period

Period	Insurer average	Floor	Ceiling
Pre-competition	\$360.71	N/A	N/A
Competition	\$269.60	\$265.84	\$306.62

4.4 Delivery cost

For completeness, we have included the delivery cost which is not a component of the scheme efficiency index. Delivery costs include retrospective profit margin, insurer legal & investigation cost, other insurer expenses and other Scheme costs.

Figure 4.5 – Retrospective profit margin by underwriting quarter

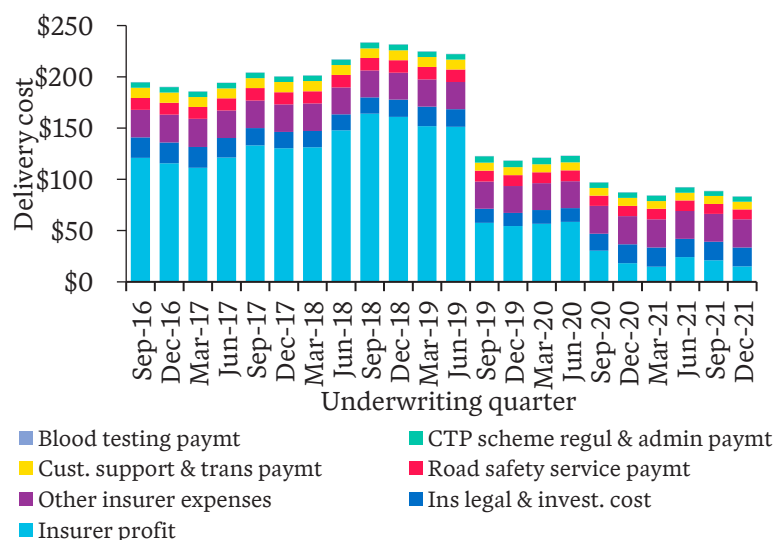


We see a sharp decrease in profit margin (as proportion of insurer premium) from 44% to 16% from the start of competition in the scheme.

The 2019/20 underwriting year has additional profit due to fewer accidents during initial COVID-19 pandemic lockdowns.

Our estimate of insurer profit relates to the insurer premium only. See 5.1 for a more detailed discussion on the retrospective profit margin.

Figure 4.6 - Delivery cost components by underwriting quarter



The delivery cost dropped from an average of \$208 in the pre-competition period to \$102 in the competition period due to the fall in the estimate of insurer profit for this period.

Since competition period started, apart from the large decrease in insurer profit, there was a slight increase in insurer legal and investigation costs, slightly offset by a decrease in CTP scheme regulator and administration payments.

Until recently, insurer profit was the largest delivery cost component. Other components have remained largely stable over time.

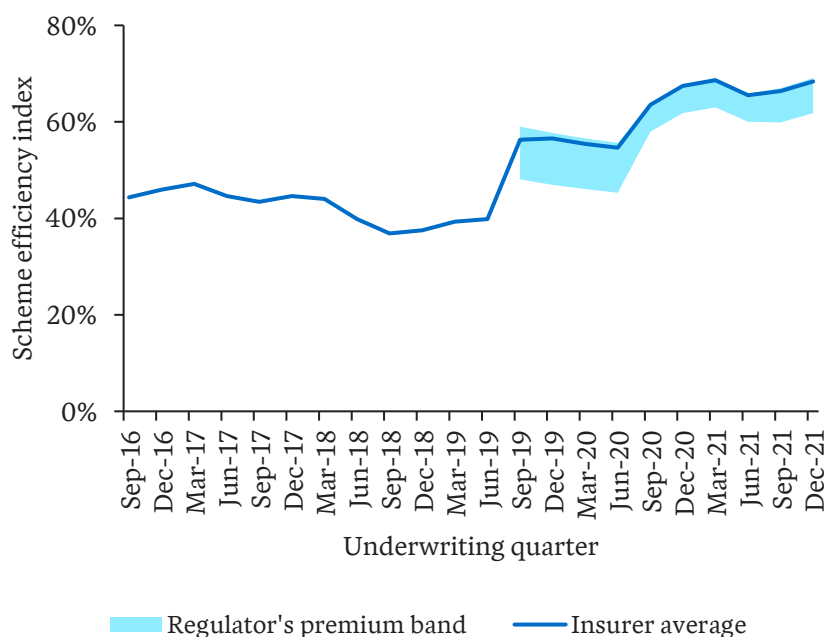
Table 4.4 – Delivery cost components average for insurer average premium by period

Period	Profit margin	Ins profit	Ins legal & invest	Other ins. exp.	Road safety	Cust. supp & trans.	CTP regul & admin	Blood test	Total delivery cost
Pre-comp.	44%	\$136.62	\$17.79	\$26.74	\$11.87	\$9.80	\$5.38	\$0.18	\$208.37
Competition	16%	\$35.05	\$16.20	\$26.92	\$10.24	\$7.67	\$5.64	\$0.18	\$101.89

4.5 Scheme efficiency

To calculate the scheme efficiency index we combine claimant benefit and filed customer premium results.

Figure 4.7 – Scheme efficiency index by underwriting quarter

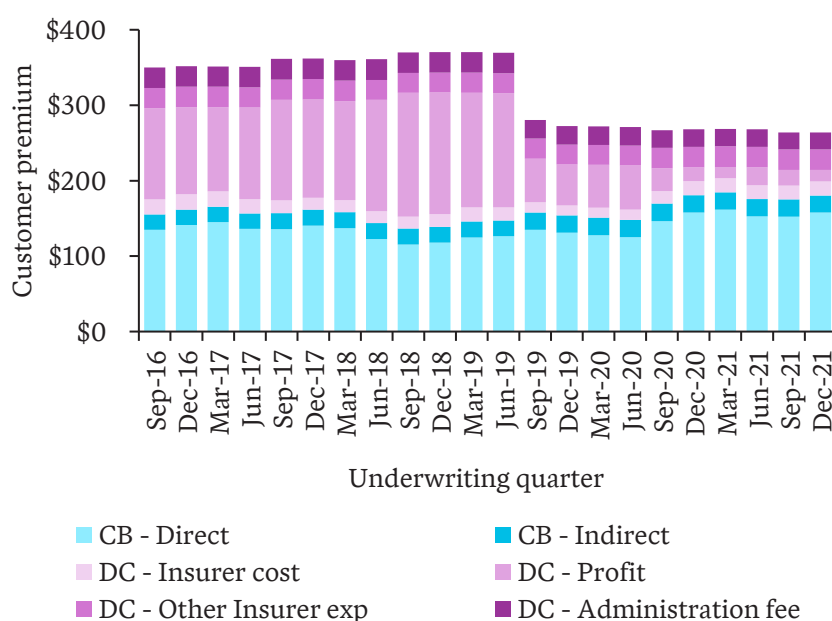


Based on the insurer average customer premium, the scheme efficiency index averaged around 42% in the pre-competition period. This increased to an average of 62% since the start of competition.

We compare the competition period scheme efficiency index to the range possible within the Regulator's premium band. With insurers pricing at or close to the floor, the efficiency is near the top of this range.

We assume future superimposed inflation of 0.5% p.a. for these results.

Figure 4.8 – Customer premium components by underwriting quarter



Most customer premium components, except insurer profit, have remained stable over time. This shows that a sharp reduction in adopted risk premium – due to a lower insurer profit after the start of competition – was the key driver in scheme efficiency improvement.

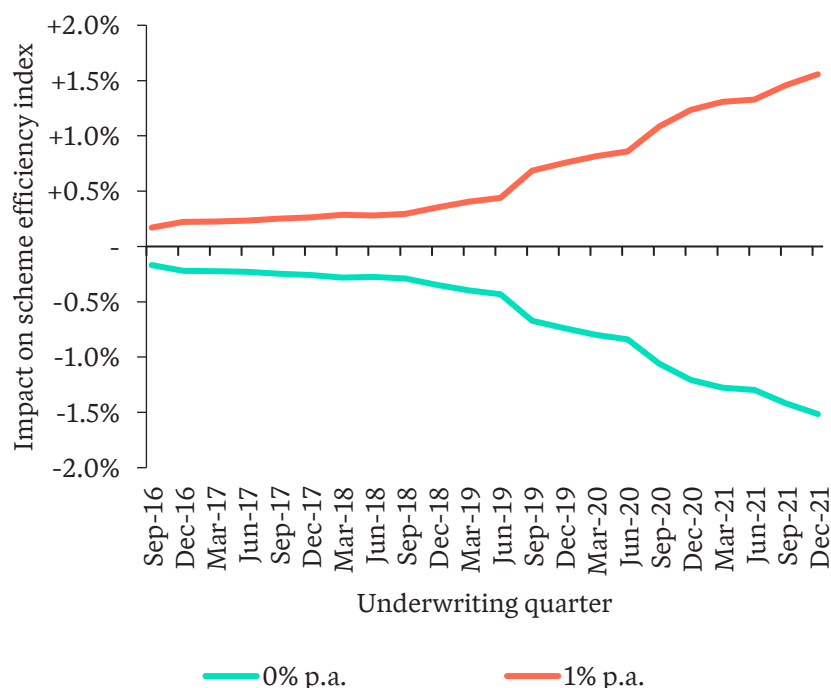
Table 4.5 – Scheme efficiency index average by period

Period	Insurer average	Floor	Ceiling
Pre-competition	42%	N/A	N/A
Competition	62%	63%	55%

4.6 Superimposed inflation scenarios

We examine the impact of using a different SII assumption on the scheme efficiency index compared to our base assumption of 0.5% p.a. Specifically, we consider two scenarios – lower base (0% p.a.) and upper base (1% p.a.).

Figure 4.9 – Impact of SII scenario on scheme efficiency index compared to base SII 0.5% p.a.



Typically, a higher SII assumption will lead to increased future claimant benefit payments (and lower insurer profit) which will subsequently increase the scheme efficiency index.

The impact of our choice of future SII assumption on the scheme efficiency average for the competition period ranges between -1.5% and +1.5%.

The impact is greater for recent underwriting periods because there is more uncertainty due to a higher proportion of outstanding payments.

Table 4.6 – Average impact on SII on scheme efficiency index by period

Period	Base scheme efficiency index (0.5% p.a. SII)	Impact of new SII on scheme efficiency index	
		0% p.a. SII	1% p.a. SII
Pre-competition	42%	42% (-0.3%)	43% (+0.3%)
Competition	62%	61% (-1.1%)	63% (+1.1%)



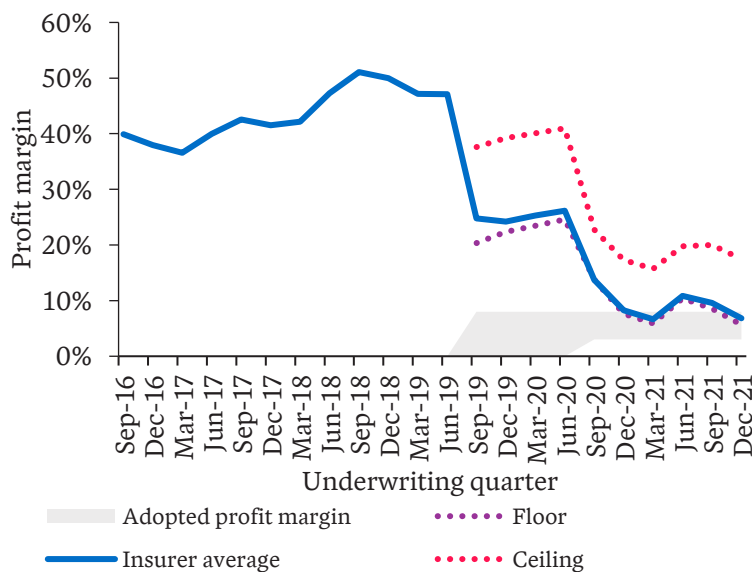
Retrospective profit

5 Retrospective Profit

5.1 Retrospective profit margin

Retrospective profit is the current estimate of profit earned over historical underwriting quarters. Retrospective profit is calculated by subtracting the hindsight risk premium from the average insurer filed premium. Retrospective profit estimates are uncertain, especially for recent underwriting periods, because there are claims yet to finalise and we rely on assumptions to estimate ultimate hindsight risk premium.

Figure 5.1 - Retrospective profit margin by underwriting quarter



The average profit margin was approximately 44% in the pre-competition period, before dropping to 16% after competition commenced. The current estimate of average insurer profit margin in the December 2021 quarter was 7%, although this will change as experience emerges.

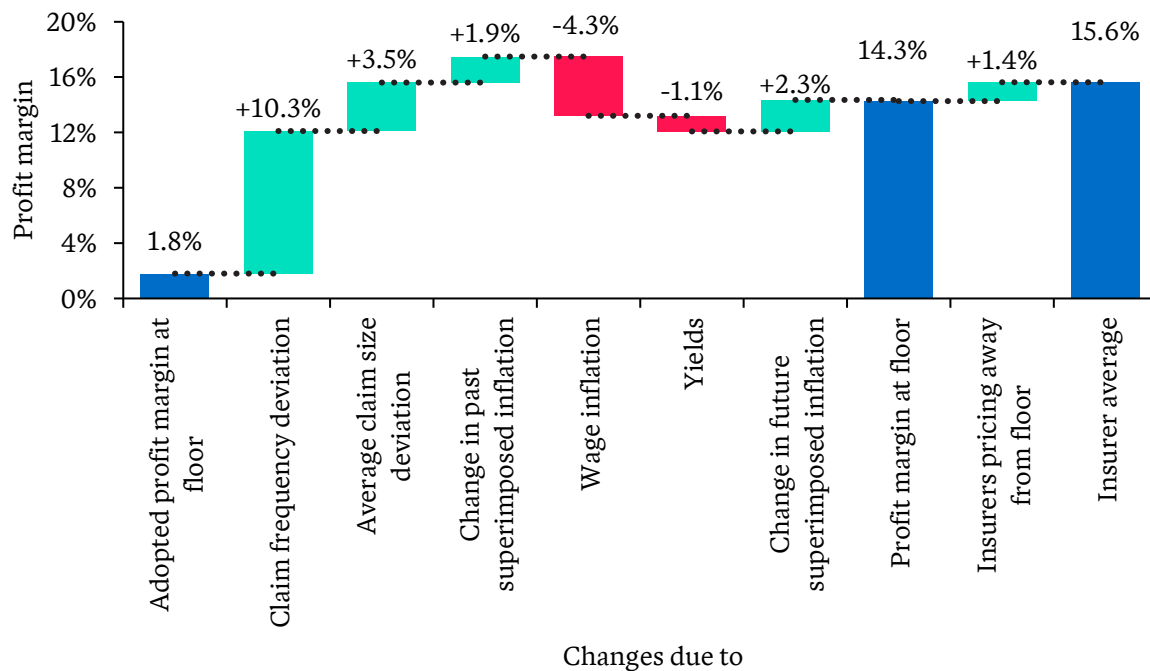
The insurers paid roughly \$260 million of approval fee to enter the scheme in 2016. If the approval fee were to be amortised over the three-year pre-competition period, the average profit margin for the pre-competition period would decrease from 44% to 20%. We do not include the approval fee in our scheme efficiency calculations because it lies outside the CTP scheme.

The profit margin is trending downwards in the competition period due to high wage inflation experience and the Regulator revising the floor and ceiling down over time in response to emerging risk premium experience. The recent underwriting periods typically lie close to the adopted profit margin levels because they have little actual experience and rely mostly on assumptions.

5.2 Attribution of profit

Profit margins can emerge differently to adopted profit margin if the actual experience is different to what was assumed at pricing. We examine what factors lead to the retrospective profit margin emerging different to the adopted profit margin.

Figure 5.2 – Attribution of profit (competition period) from adopted to actual experience



In the competition period, a 0% profit margin was adopted at the floor between underwriting quarters Sep-19 to Jun-20 and 3% from Sep-20 onwards. Therefore, the average assumed profit margin at the floor in the competition period is 1.8%. In contrast, the average insurer profit margin for the competition period was 15.6%. The difference between adopted profit margin at the floor and insurer average profit margin can be attributed to the following factors.

- Claim frequency deviation:** Profit is 10.3% higher due to the current hindsight estimate of claim frequency being lower than the frequency adopted at pricing and because the segment profile was weaker than allowed for at pricing
- Average claim size deviation:** Profit is 3.5% higher because the current hindsight estimate of average claim size is lower than that adopted at pricing (especially legally represented ISV 8+ claims)
- Past superimposed inflation:** Profit due to superimposed inflation and average claim size are intrinsically intertwined but we separate the two here on the basis that actual superimposed inflation is 0% p.a. If actual superimposed inflation was 0% p.a. for past payments as opposed to that adopted at pricing, then this will lead to an additional 1.9% of profit margin
- Wage inflation:** Profit is 4.3% lower due to wage inflation (especially future estimates) being significantly higher than what was adopted at pricing
- Yields:** Profit is 1.1% lower due to bond yields decreasing between pricing and underwriting
- Change in future superimposed inflation:** Profit is 2.3% higher because our current base estimate of future superimposed inflation is lower than what was adopted at pricing
- Insurers pricing away from the floor:** Profit is 1.4% higher because insurers priced above the floor for some vehicle classes.



Appendices

Appendix A Data

A.1 Data

All data is provided by the Regulator. We conduct reasonableness checks and compare summaries to previous reviews. However, we do not have a second corroborating source of information, so the accuracy of results is dependent upon the accuracy and completeness of this underlying data.

In addition to the data provided to us for the annual review, we also used the following datasets:

- Written premium and policy count by insurer, premium class, ITC indicator and policy term from 1 July 2016
- Insurer premium filings over time by premium class from 1 July 2016
- Scheme Services fee (excl. stamp duty) components data since 1 July 2016
- Assumptions behind floor and ceiling premium setting for underwriting years since 1 July 2019

A.2 Filed premium information

We provide the insurer premium (excl. GST, stamp duty) and customer premium (incl. GST, stamp duty) at the whole-of-scheme level (weighted average across insurers and premium classes). Specifically, we provide the insurer average premium along with the equivalent floor and ceiling premium for comparison.

The premium has been adjusted for non-annual policies and ITC loading has been removed.

Table A.1 – Insurer and customer premium by underwriting quarter

Under-writing period	Insurer premium			Customer premium		
	Market average	Floor	Ceiling	Market average	Floor	Ceiling
	\$	\$	\$	\$	\$	\$
Sep-16	247.79	N/A	N/A	349.90	N/A	N/A
Dec-16	249.28	N/A	N/A	351.71	N/A	N/A
Mar-17	249.08	N/A	N/A	351.47	N/A	N/A
Jun-17	248.55	N/A	N/A	350.83	N/A	N/A
Sep-17	256.18	N/A	N/A	361.30	N/A	N/A
Dec-17	256.75	N/A	N/A	361.98	N/A	N/A
Mar-18	254.95	N/A	N/A	359.79	N/A	N/A
Jun-18	255.82	N/A	N/A	360.86	N/A	N/A
Sep-18	263.25	N/A	N/A	369.96	N/A	N/A
Dec-18	263.63	N/A	N/A	370.40	N/A	N/A
Mar-19	263.75	N/A	N/A	370.54	N/A	N/A
Jun-19	263.08	N/A	N/A	369.74	N/A	N/A
Sep-19	190.49	179.89	229.79	280.52	267.57	328.50
Dec-19	184.01	179.63	229.45	272.56	267.21	328.05
Mar-20	183.68	179.33	229.07	272.11	266.79	327.53
Jun-20	182.96	179.15	228.83	271.20	266.54	327.21
Sep-20	180.59	180.66	201.74	266.71	266.80	292.52
Dec-20	181.83	180.64	201.70	268.21	266.75	292.48
Mar-21	182.22	180.74	201.82	268.70	266.89	292.63
Jun-21	181.79	180.94	202.05	268.20	267.17	292.94
Sep-21	179.06	177.09	202.36	263.86	261.45	292.31
Dec-21	179.15	176.89	202.14	263.94	261.18	292.01

A.3 Scheme Services fee components

We provide the average allowance per policy for the various Scheme Services fee components included in the customer premium. These figures include stamp duty.

Table A.2 – Average Scheme Services fee component by underwriting quarter

Under-writing period	Road safety service payment	Customer support and transaction payment	Hospital and emergency services payment	CTP Scheme Regulation and admin payment	Blood testing payment	Total Scheme Services fee
	\$	\$	\$	\$	\$	\$
Sep-16	11.61	9.89	20.40	5.27	0.18	47.35
Dec-16	11.61	9.89	20.39	5.27	0.18	47.34
Mar-17	11.61	9.89	20.40	5.27	0.18	47.35
Jun-17	11.61	9.89	20.41	5.27	0.17	47.36
Sep-17	11.93	9.85	21.14	5.41	0.18	48.51
Dec-17	11.93	9.85	21.13	5.41	0.18	48.49
Mar-18	11.93	9.85	21.14	5.41	0.18	48.50
Jun-18	11.93	9.85	21.15	5.41	0.18	48.51
Sep-18	12.05	9.66	21.19	5.46	0.18	48.54
Dec-18	12.05	9.66	21.17	5.46	0.18	48.52
Mar-19	12.05	9.66	21.16	5.46	0.18	48.51
Jun-19	12.05	9.66	21.17	5.46	0.18	48.52
Sep-19	10.56	7.83	23.05	6.31	0.18	47.93
Dec-19	10.56	7.82	23.02	6.31	0.18	47.88
Mar-20	10.55	7.82	22.98	6.30	0.18	47.83
Jun-20	10.55	7.82	22.95	6.30	0.18	47.81
Sep-20	10.12	7.59	22.99	5.33	0.18	46.21
Dec-20	10.11	7.59	22.99	5.33	0.18	46.20
Mar-21	10.11	7.58	23.00	5.33	0.18	46.21
Jun-21	10.11	7.58	23.03	5.33	0.18	46.24
Sep-21	9.84	7.52	22.75	4.94	0.18	45.23
Dec-21	9.84	7.52	22.72	4.94	0.18	45.20

Appendix B Approach details

B.1 Methodology

We calculate the scheme efficiency index by:

1. Estimating hindsight risk premium:
 - a. Extract hindsight estimates (as at 31 December 2021) of scheme claim frequency and claim size (in 31 December 2021 dollars) by accident quarter from the recent annual review
 - b. Inflate the claim size estimates to the middle of the calendar quarter in which they belong
 - c. Derive the estimates of the claim size and claim frequency by underwriting quarter
 - d. Discount the claim size estimates to the middle of the underwriting quarter in which the premium was underwritten
 - e. Calculate the net risk premium as the product of claim frequency and the net average claim size (gross average claim size net of GST).
2. Estimating direct claimant benefits:
 - a. Calculate the cumulative ratio of direct claimant benefit payments to total claim payments as at 31 December 2021 for each accident quarter
 - b. Analyse how this ratio develops across successive development quarters (i.e. 'historical development factors')
 - c. Select 'future development factors' that are typical of historical development
 - d. Adjust early development quarters using the historical average proportion by development quarter
 - e. Estimate the 'ultimate ratio' for each accident quarter by using the selected 'future development factors' and average proportions
 - f. Multiply the hindsight risk premium by the estimated 'ultimate ratio' to calculate the amount of hindsight risk premium to be attributed to direct claimant benefits, including a proportional attribution of GST.
3. Calculating customer premium:
 - a. Take a weighted average of filed insurer, floor and ceiling premium across insurers and premium classes by dividing total premium written by total policies written
 - b. Adjust for shorter-term policies by annualising and remove the ITC loading from ITC-eligible policies
 - c. Add Scheme Services fee (excl. stamp duty), GST and stamp duty amounts averaged across premium classes to the insurer premium to calculate customer premium.
4. Calculating scheme efficiency index:
 - a. Combine the estimated direct claimant benefit with indirect claimant benefit and average customer premium according to the equation specified in Section 2 to get scheme efficiency index.

Appendix C Analysis and results

C.1 Hindsight insurer premium

Hindsight insurer premium (excl. GST, stamp duty and expected profit allowance) is our best estimate as at 31 December 2021 of what it cost insurers given actual emerged experience. We present the individual components that combine to give us hindsight insurer premium.

The hindsight insurer premium is based on a future SII assumption of 0.5% p.a.

We use the same assumptions adopted at pricing for claims handling expense (CHE), reinsurance (RI) cost and, insurer head office, policy administration and marketing cost.

Table C.1 – Hindsight insurer premium

Under-writing period	Frequency	Average claim size (infl/disc)	Risk premium (infl/disc, excl. GST)	CHE	RI cost	Ins. head office, policy admin. & market. cost	Hindsight insurer premium (excl. GST, stamp duty, profit)
	\$	\$	\$	\$	\$	\$	\$
Sep-16	0.213%	65,597	126.77	10.63	0.81	10.64	148.84
Dec-16	0.216%	67,459	132.40	10.81	0.81	10.64	154.66
Mar-17	0.222%	67,112	135.64	10.92	0.81	10.64	158.01
Jun-17	0.207%	67,606	127.06	10.64	0.81	10.64	149.15
Sep-17	0.188%	73,187	125.12	10.57	0.81	10.63	147.12
Dec-17	0.183%	76,830	128.03	10.66	0.80	10.62	150.12
Mar-18	0.180%	76,495	125.52	10.58	0.81	10.62	147.52
Jun-18	0.178%	70,121	113.22	10.18	0.81	10.61	134.82
Sep-18	0.169%	69,972	107.38	9.99	0.81	10.61	128.78
Dec-18	0.171%	71,158	110.32	10.08	0.80	10.61	131.81
Mar-19	0.168%	76,831	117.61	10.31	0.80	10.60	139.33
Jun-19	0.155%	83,498	117.52	10.31	0.80	10.60	139.24
Sep-19	0.147%	90,955	121.54	10.38	0.80	10.60	143.31
Dec-19	0.143%	90,885	117.88	10.25	0.79	10.59	139.51
Mar-20	0.131%	97,003	115.68	10.16	0.79	10.59	137.23
Jun-20	0.124%	100,518	113.63	10.09	0.79	10.59	135.10
Sep-20	0.141%	104,500	133.69	10.77	0.79	10.51	155.76
Dec-20	0.147%	108,333	144.39	11.12	0.79	10.51	166.81
Mar-21	0.158%	102,468	147.58	11.23	0.80	10.51	170.11
Jun-21	0.147%	104,413	139.81	10.98	0.80	10.51	162.09
Sep-21	0.142%	108,030	139.66	11.00	0.80	10.49	161.95
Dec-21	0.152%	104,206	144.45	11.15	0.80	10.49	166.88

C.2 Retrospective profit

We provide the retrospective profit and retrospective profit margin (as percentage of insurer premium) as at 31 December 2021.

The hindsight insurer premium and retrospective profit is based on a future SII assumption of 0.5% p.a. Retrospective profit also includes the expected profit allowance at pricing.

Table C.2 – Retrospective profit

Under-writing period	Hindsight insurer premium (excl. GST, profit)	Retrospective profit			Retrospective profit margin		
		Insurer Average	Floor	Ceiling	Insurer Average	Floor	Ceiling
	\$	\$	\$	\$			
Sep-16	148.84	98.94	N/A	N/A	40%	N/A	N/A
Dec-16	154.66	94.62	N/A	N/A	38%	N/A	N/A
Mar-17	158.01	91.07	N/A	N/A	37%	N/A	N/A
Jun-17	149.15	99.40	N/A	N/A	40%	N/A	N/A
Sep-17	147.12	109.06	N/A	N/A	43%	N/A	N/A
Dec-17	150.12	106.63	N/A	N/A	42%	N/A	N/A
Mar-18	147.52	107.43	N/A	N/A	42%	N/A	N/A
Jun-18	134.82	121.00	N/A	N/A	47%	N/A	N/A
Sep-18	128.78	134.46	N/A	N/A	51%	N/A	N/A
Dec-18	131.81	131.82	N/A	N/A	50%	N/A	N/A
Mar-19	139.33	124.42	N/A	N/A	47%	N/A	N/A
Jun-19	139.24	123.85	N/A	N/A	47%	N/A	N/A
Sep-19	143.31	47.18	36.58	86.48	25%	20%	38%
Dec-19	139.51	44.50	40.12	89.94	24%	22%	39%
Mar-20	137.23	46.45	42.10	91.84	25%	23%	40%
Jun-20	135.10	47.87	44.05	93.74	26%	25%	41%
Sep-20	155.76	24.83	24.90	45.98	14%	14%	23%
Dec-20	166.81	15.02	13.82	34.89	8%	8%	17%
Mar-21	170.11	12.11	10.63	31.71	7%	6%	16%
Jun-21	162.09	19.70	18.85	39.95	11%	10%	20%
Sep-21	161.95	17.12	15.14	40.42	10%	9%	20%
Dec-21	166.88	12.27	10.01	35.25	7%	6%	17%

C.3 Direct claimant benefit

Direct claimant benefit is the portion of hindsight risk premium that relates to the claimant benefit (CB) heads of damage. We provide our projected ultimate direct claimant benefit proportion and the implied cumulative development ratio we used in projections. We also provide the direct claimant benefit amount which was calculated by multiplying total risk premium by the ultimate proportion.

The hindsight risk premium and direct claimant benefits are based on a future SII assumption of 0.5% p.a.

Table C.3 – Direct claimant benefit

Under-writing period	Direct CB prop to date	Implied development ratio	Ultimate Direct CB prop	Total risk premium (infl/disc) \$	Direct claimant benefits \$
Sep-16	88%	99%	87%	154.78	134.79
Dec-16	89%	99%	87%	161.66	141.26
Mar-17	89%	98%	88%	165.62	145.21
Jun-17	89%	98%	88%	155.15	136.16
Sep-17	91%	98%	89%	152.77	135.82
Dec-17	92%	98%	90%	156.32	140.40
Mar-18	92%	98%	90%	153.26	137.22
Jun-18	91%	98%	89%	138.24	122.58
Sep-18	90%	98%	88%	131.11	115.25
Dec-18	89%	98%	87%	134.70	117.72
Mar-19	88%	98%	87%	143.60	124.57
Jun-19	89%	99%	88%	143.50	126.23
Sep-19	90%	100%	91%	148.40	134.79
Dec-19	89%	102%	91%	143.93	131.08
Mar-20	87%	104%	91%	141.25	127.86
Jun-20	86%	105%	90%	138.74	125.29
Sep-20	85%	106%	90%	163.23	146.51
Dec-20	86%	104%	90%	176.30	157.86
Mar-21	86%	104%	90%	180.19	161.43
Jun-21	82%	109%	89%	170.71	152.70
Sep-21	78%	115%	89%	170.53	152.34
Dec-21	47%	192%	89%	176.37	157.78

C.4 Average customer premium components

We provide the components of average customer premium and categorise them as claimant benefits or delivery cost.

Direct claimant benefits, insurer legal & investigation cost are based on a future SII assumption of 0.5% p.a.

Table C.4 – Average customer premium components

Under-writing period	Claimant benefits		Delivery cost				Total
	Direct	Indirect	Insurer legal & invest. cost	Insurer profit	Other Insurer expenses (CHE, RI, etc.)	Other. Scheme costs	
	\$	\$	\$	\$	\$	\$	\$
Sep-16	134.79	20.40	20.00	120.81	26.96	26.95	349.90
Dec-16	141.26	20.39	20.40	115.53	27.18	26.95	351.71
Mar-17	145.21	20.40	20.42	111.19	27.31	26.95	351.47
Jun-17	136.16	20.41	18.98	121.37	26.96	26.95	350.83
Sep-17	135.82	21.14	16.95	133.16	26.87	27.36	361.30
Dec-17	140.40	21.13	15.93	130.19	26.97	27.36	361.98
Mar-18	137.22	21.14	16.04	131.17	26.87	27.36	359.79
Jun-18	122.58	21.15	15.66	147.74	26.37	27.36	360.86
Sep-18	115.25	21.19	15.87	164.18	26.13	27.35	369.96
Dec-18	117.72	21.17	16.98	160.95	26.23	27.35	370.40
Mar-19	124.57	21.16	19.03	151.92	26.52	27.35	370.54
Jun-19	126.23	21.17	17.26	151.21	26.52	27.35	369.74
Sep-19	134.79	23.05	13.61	57.61	26.58	24.88	280.52
Dec-19	131.08	23.02	12.84	54.33	26.42	24.86	272.56
Mar-20	127.86	22.98	13.38	56.72	26.31	24.86	272.11
Jun-20	125.29	22.95	13.44	58.44	26.22	24.86	271.20
Sep-20	146.51	22.99	16.72	30.32	26.95	23.21	266.71
Dec-20	157.86	22.99	18.44	18.33	27.38	23.21	268.21
Mar-21	161.43	23.00	18.77	14.78	27.51	23.21	268.70
Jun-21	152.70	23.03	18.01	24.05	27.21	23.20	268.20
Sep-21	152.34	22.75	18.18	20.90	27.21	22.48	263.86
Dec-21	157.78	22.72	18.59	14.97	27.39	22.48	263.94

C.5 Scheme efficiency index

We provide scheme efficiency index results for the average customer premium across insurers, along with the equivalent floor and ceiling premium.

Claimant benefits and scheme efficiency results are based on a future SII assumption of 0.5% p.a.

Table C.5 – Scheme efficiency index results

Under-writing period	Claimant benefits	Customer premium			Scheme efficiency		
		Insurer average	Floor	Ceiling	Insurer average	Floor	Ceiling
	\$	\$	\$	\$			
Sep-16	155.19	349.90	N/A	N/A	44%	N/A	N/A
Dec-16	161.66	351.71	N/A	N/A	46%	N/A	N/A
Mar-17	165.60	351.47	N/A	N/A	47%	N/A	N/A
Jun-17	156.57	350.83	N/A	N/A	45%	N/A	N/A
Sep-17	156.96	361.30	N/A	N/A	43%	N/A	N/A
Dec-17	161.53	361.98	N/A	N/A	45%	N/A	N/A
Mar-18	158.35	359.79	N/A	N/A	44%	N/A	N/A
Jun-18	143.73	360.86	N/A	N/A	40%	N/A	N/A
Sep-18	136.44	369.96	N/A	N/A	37%	N/A	N/A
Dec-18	138.89	370.40	N/A	N/A	37%	N/A	N/A
Mar-19	145.72	370.54	N/A	N/A	39%	N/A	N/A
Jun-19	147.40	369.74	N/A	N/A	40%	N/A	N/A
Sep-19	157.85	280.52	267.57	328.50	56%	59%	48%
Dec-19	154.10	272.56	267.21	328.05	57%	58%	47%
Mar-20	150.84	272.11	266.79	327.53	55%	57%	46%
Jun-20	148.25	271.20	266.54	327.21	55%	56%	45%
Sep-20	169.50	266.71	266.80	292.52	64%	64%	58%
Dec-20	180.85	268.21	266.75	292.48	67%	68%	62%
Mar-21	184.43	268.70	266.89	292.63	69%	69%	63%
Jun-21	175.73	268.20	267.17	292.94	66%	66%	60%
Sep-21	175.09	263.86	261.45	292.31	66%	67%	60%
Dec-21	180.50	263.94	261.18	292.01	68%	69%	62%

C.6 Superimposed inflation scenarios

We provide the claimant benefit amount and resulting scheme efficiency index under the insurer average customer premium for a range SII scenarios.

Table C.6 – Superimposed inflation scenarios

Underwriting period	Average customer premium	0% p.a. SII		1% p.a. SII	
		Claimant benefits	Scheme efficiency	Claimant benefits	Scheme efficiency
	\$	\$		\$	
Sep-16	349.90	154.60	44%	155.79	45%
Dec-16	351.71	160.89	46%	162.44	46%
Mar-17	351.47	164.82	47%	166.40	47%
Jun-17	350.83	155.77	44%	157.40	45%
Sep-17	361.30	156.07	43%	157.87	44%
Dec-17	361.98	160.59	44%	162.48	45%
Mar-18	359.79	157.34	44%	159.38	44%
Jun-18	360.86	142.74	40%	144.74	40%
Sep-18	369.96	135.37	37%	137.53	37%
Dec-18	370.40	137.60	37%	140.19	38%
Mar-19	370.54	144.25	39%	147.23	40%
Jun-19	369.74	145.81	39%	149.02	40%
Sep-19	280.52	155.96	56%	159.77	57%
Dec-19	272.56	152.09	56%	156.16	57%
Mar-20	272.11	148.67	55%	153.06	56%
Jun-20	271.20	145.97	54%	150.58	56%
Sep-20	266.71	166.68	62%	172.40	65%
Dec-20	268.21	177.61	66%	184.17	69%
Mar-21	268.70	181.00	67%	187.94	70%
Jun-21	268.20	172.26	64%	179.30	67%
Sep-21	263.86	171.35	65%	178.94	68%
Dec-21	263.94	176.50	67%	184.61	70%

Appendix D Reconciliations

D.1 Profit attribution – adopted to actual

We attribute the impact on average profit margin by differences between the assumptions adopted at pricing and assumptions as of the current review.

Table D.1 - Adopted assumptions to actual experience

Underwriting period	Assumed profit margin at Floor	Total frequency	Total ACS	Past SII deviation	Advised AWE	Yields	Change in future SII	Floor Profit	Insurers pricing away from Floor	Insurer average
Sep-19	0.0%	21.8%	2.0%	1.9%	-3.2%	-3.3%	1.0%	20.3%	4.4%	24.8%
Dec-19	0.0%	23.7%	2.3%	1.9%	-3.2%	-3.5%	1.1%	22.3%	1.9%	24.2%
Mar-20	0.0%	26.3%	2.3%	1.8%	-3.1%	-4.7%	1.2%	23.5%	1.8%	25.3%
Jun-20	0.0%	28.5%	1.0%	1.8%	-3.2%	-4.5%	1.2%	24.6%	1.6%	26.2%
Sep-20	3.0%	3.8%	5.1%	2.3%	-3.5%	0.3%	3.1%	13.8%	0.0%	13.8%
Dec-20	3.0%	-0.8%	4.4%	2.5%	-3.8%	-0.7%	3.5%	7.7%	0.6%	8.3%
Mar-21	3.0%	-6.3%	3.7%	2.6%	-4.1%	3.6%	3.7%	5.9%	0.8%	6.6%
Jun-21	3.0%	-0.1%	2.3%	2.5%	-4.0%	3.2%	3.8%	10.4%	0.4%	10.8%
Sep-21	3.0%	5.9%	6.0%	0.7%	-7.0%	-2.7%	2.1%	8.5%	1.0%	9.6%
Dec-21	3.0%	0.3%	5.8%	0.8%	-7.8%	0.9%	2.2%	5.7%	1.2%	6.8%
Average since competition	1.8%	10.3%	3.5%	1.9%	-4.3%	-1.1%	2.3%	14.3%	1.4%	15.6%



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