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Super SA

Triple S Insurance Review as at 30 June 2022

March 2023

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Strictly private and confidential

1. Executive summary

1.1 This actuarial investigation of the insurance arrangements of the Triple S Scheme is required by Section 17 of the Southern State Superannuation Act 2009 (the Act) which states "*each report must be prepared by an actuary (not being a member of the Board) appointed by the Minister and must report on:*

a. the cost of insurance benefits

b. the extent to which premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities

at the time of the report and in the foreseeable future."

1.2 The valuation date for this report is 30 June 2022. The previous investigation was carried out by Catherine Nance with a 30 June 2019 valuation date in a report dated May 2020 (2019 review).

1.3 We were provided with electronic data by Super SA. We adjusted the data to include allowance for claims which had been incurred prior to 30 June 2022, but which had not been finalised.

1.4 This report is based on the self-insurance arrangements in place at the valuation date.

1.5 Self-insurance has been common in government and/or large superannuation schemes in the past but APRA now prohibits self-insurance in publicly offered schemes because of the risks. APRA considers that life insurance companies are the best mechanism for superannuation funds to provide death and disability benefits to fund members. Super SA is able to continue self-insurance arrangements as it is not APRA regulated.

Overall conclusions

1.6 We have some concerns with the reliability of the data provided but have taken steps to mitigate this risk, specifically in relation to key dates for death and TPD claims. 44% of claims for 2019 to 2022 (254 out of 575 claims) had a notified date equal to the incident date. This is unlikely for such a significant number of claims. We have made allowances for the purpose of estimating the notification delays for death and TPD claims (refer section 4 for further details) and recommend Super SA take steps to improve data quality for the next review.

1.7 The cost of death and TPD claims has reduced slightly, from 0.11% of sum insured for 2016-19 to 0.09% for 2019-22. The results suggest the premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities (with further notes on premium subsidies below).

1.8 The cost of income protection claims has remained relatively stable, increasing slightly from 0.33% of salary insured for 2016-19 to 0.34% for 2019-22. The results suggest the premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities.

1.9 Given the analysis presented in this report, there is not an immediate requirement to change the premium structure, as the existing premiums remain appropriate (with further notes on premium subsidies below) given the current membership profile and claims experience for 2019-22.

1.10 Triple S remains self-insured and must meet the cost of its own claims and insurance expenses. For this purpose, it is prudent for the Board to hold substantial reserves to mitigate the risks of self-insurance. The insurance reserve at 30 June 2022 was $149.3 million. We estimate it would be prudent for the Board to hold $138.6 million in Prudential and self-insurance reserves, leaving $10.7 million in 'free reserves' at 30 June 2022.

1.11 A reserve of $10 million in respect of the legacy fixed cover product was established at the 2013 review to allow for the expected future subsidy it required. Although members can no longer apply for this product there are approximately 4,300 members who retain this type of cover. Legacy fixed cover claims are still expected to exceed premiums and we believe the current reserve of $10 million is appropriate as the subsidy continues.

1.12 The use of the insurance reserves is a matter for the Board. The Board may decide that the reserves should be used and/or allocated for other purposes or in other amounts to what has been proposed in this report.

1.13 If, before the next review is due to be completed (as at 30 June 2025), any of the following events occur whilst the fund continues to self-insure we recommend the ongoing appropriateness of the self-insurance arrangements and premiums be reassessed:

a. A significant change in the insured membership profile (e.g. 20% increase/decrease)

b. A significant change to the benefit design

c. The Board assesses that there has been a significant change in the cost of administrating the insurance arrangements that could potentially impact on the premiums of all members

d. There is subsequently determined to be material changes in the data on which this investigation has been based (where that information would have been known at the date of this investigation).

Death and TPD

1.14 As at 30 June 2022, 123,014 members held death and TPD cover, with the amount of cover totalling $21.0bn.

1.15 The death and TPD claim cost (including IBNR) decreased from 0.11% of sum insured for 2016-19 to 0.09% for 2019-22.

Claims as % of sum insured

2016-19* total	2019[1]	2020	2021	2022	2019-22* total
0.11%	0.11%	0.06%	0.08%	0.11%	0.09%

* The 2016-19 and 2019-22 totals are four-year averages and are inclusive of 2016 and 2019 respectively. All references to 2016-19 and 2019-22 throughout this report reflect the respective four-year period.

1.16 The average cost of standard cover (claims plus expenses) remains approximately $1 per unit per week ($0.96 based on claim rate for 2019-22), but this is lower for younger members.

1.17 If standard cover premiums remain at $0.75 per unit per week for the member's first 3 standard units (6 for police and ambulance members), the expected premium subsidy is $4.9 million per annum. Reserves remain sufficient to cover the premium subsidy for three years. Ongoing subsidisation would mean the reserves could be depleted, if the other allowances were called upon (e.g. there is a catastrophic event requiring the $65.2 million contingency reserve to be paid out).

1.18 Legacy fixed cover is no longer available to new members. However, members covered prior to the cessation retain their current level of cover. The expected claims exceed the current fixed cover premiums by $0.8 million, or 25%. Claims are expected to increase further as these members age. Therefore, the excess premium should be considered as a contribution to reserves and hence, a reserve ($10 million as at 30 June 2016) has been maintained for this group, which remains appropriate.

Income protection

1.19 As at 30 June 2022, 100,259 members had income protection cover, with a total salary of $7.7bn.

1.20 The rate of income protection claims has been steadily reduced slightly from 2019, with the claim rate as a percentage of insured members as below:

Claims as % of members

	2016-19	2019[2]	2020	2021	2022	2019-22
Claims	2,032	502	439	460	550	1,951
Claim rate	0.59%	0.57%	0.48%	0.48%	0.56%	0.52%

[1] This figure is different to the 2019 claim rate in May 2020 report (which showed a claim rate of 0.13%). It is based on actual claims reported for 2019 (rather than estimates for Incurred But Not Reported claims) and incorporates any updates to insured member information since the last review.

[2] This figure is different to the 2019 claim rate in May 2020 report (which showed 534 claims and a claim rate of 0.60%). It is based on actual claims reported for 2019 (rather than estimates for Incurred But Not Reported claims and Incurred But Not Enough Reported claims) and incorporates any updates to insured member information since the last review.

1.21 Claims as a percentage of salary insured was 0.34% for 2019-22 but has fluctuated through 2019 to 2022. The claim as a percentage of salary insured experience is lower than the claim rate experience (shown above) mainly due to low average duration of claims (including adjustment for Incurred But Not Enough Reported, IBNER[3]).

Claims as % of salary insured

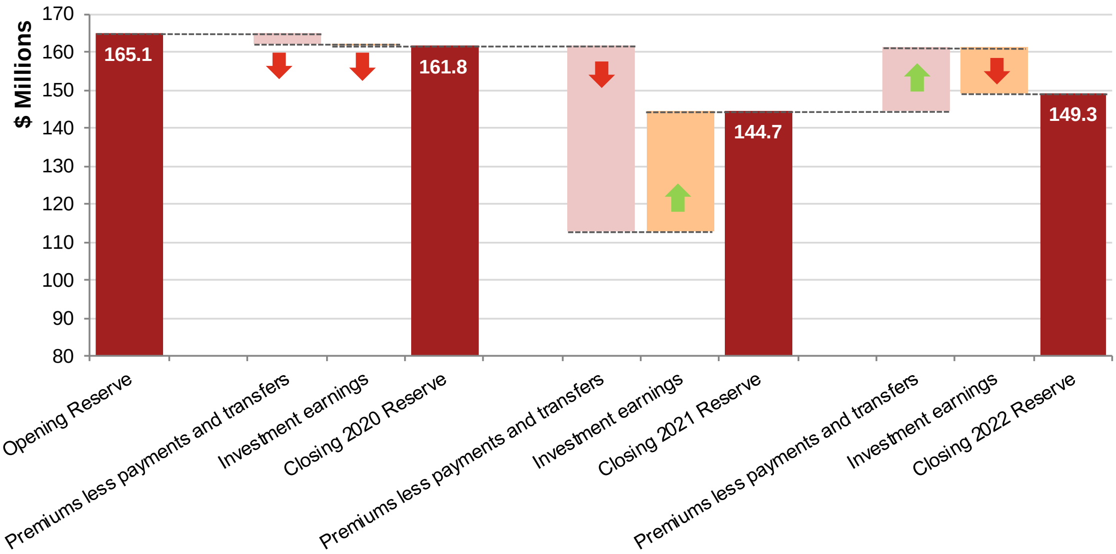
	2016-19	2019[4]	2020	2021	2022	2019-22
Claims as % of salary insured	0.33%	0.36%	0.31%	0.31%	0.38%	0.34%
Average duration (yrs.)	0.75	0.76	0.80	0.75	0.75	0.76

1.22 The cost of income protection benefits for 2019-22 was 0.34% of salaries (after allowing for IBNER and IBNR), or 0.41% of salary after expenses[5] (0.40% over 2016-19); this is slightly below the current premium (weighted average of 0.43% of salary). Based on the claim rates for 2022 alone, the cost would be slightly higher than the current premium at 0.45% of salary after expenses (0.44% for 2019).

Reserves

1.23 The insurance reserves decreased by 9.6% ($15.9 million) from 2019 to 2022, from $165.2 million to $149.3 million. This was mainly due to transfers from the insurance reserve since 2019 totalling $34.7 million.

1.24 Premiums were less than payments and expense outflows for each of the past 3 years; for FY2022, there was a transfer back to the insurance reserve ($17.1 million) which offset some of the $50.3 million transferred from the reserve in FY2021.



1.25 The level of recommended Prudential Reserves ($63.8 million) and self-insurance reserves ($74.8 million) leave free reserves of $10.7 million, reduced from $42.1 million in 2019.The use of the insurance reserves is a matter for the Board. The Board may decide that the reserves should be used and/or allocated for other purposes or in other amounts to what has been proposed in this report

[3] Incurred But Not Enough Reported allows for additional payments to be made for income protection claims in progress.

[4] This figure is different to the 2019 claim rate in May 2020 report (which showed claims cost of 0.39%). It is based on actual claims reported for 2019 (rather than estimates for Incurred But Not Reported claims and Incurred But Not Enough Reported claims) and incorporates any updates to insured member information since the last review.

[5] Estimated based on actual operational costs for FY2022.

$ million	Death and TPD	Income Protection	Total at 30/06/22	Total at 30/06/19
Insurance reserve[1]	**142.6**	**6.7**	**149.3**	**165.2**
Prudential reserves				
IBNR & IBNER[2]	24.1	19.7	43.8	30.5
Fluctuation reserve	5.0	5.0	10.0	10.0
Fixed Cover reserve	10.0	0.0	10.0	10.0
Total prudential reserves	**39.1**	**24.7**	**63.8**	**50.5**
Self-insurance reserves				
Asset resilience reserve	5.9	3.7	9.6	7.6
Contingency reserve	48.1	17.1	65.2	65.0
Total self -insurance reserves	**54.0**	**20.8**	**74.8**	**72.6**
Total prudential and self-insurance reserves	**93.1**	**45.5**	**138.6**	**123.1**
Expected 'free reserves'	**49.6**	**(38.8)**	**10.7**	**42.1**
Total annual subsidy[3]	**4.9**	**-**	**4.9**	**4.4**

[1] Insurance reserve has been split into death and TPD and income protection based on Triple S accounts (audited).

[2] Includes allowance for higher than expected IBNR & IBNER at 50%.

[3] Estimated based on 30 June 2022 membership.

1.26 The insurance reserves remain substantial, at $149.3 million at 30 June 2022. Based on the level of free reserves and the projected operating deficit after expenses, the annual subsidy may only be supported for up to 3 years if claims continue to be incurred based on the 2022 claim rate; the operating deficit based on the 2019-22 claim rate would support the annual subsidy for a longer period. Ongoing subsidisation would mean the reserves would be depleted, if the other allowances were called upon (e.g. if there is a catastrophic event requiring the $65.2 million contingency reserve to be paid out).

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2. Introduction

Purpose and scope of report

2.1 This report has been prepared at the request of the Department of Treasury and Finance of South Australia, acting on behalf of Super SA as required by Section 17 of the *Southern State Superannuation Act 2009* which states "*each report must be prepared by an actuary (not being a member of the Board) appointed by the Minister and must report on:*

c. the cost of insurance benefits

d. the extent to which premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities

at the time of the report and in the foreseeable future."

2.2 See Appendix A for more details.

2.3 The valuation date for this report is 30 June 2022. The previous investigation was carried out by Catherine Nance with a 30 June 2019 valuation date in a report dated May 2020 (2019 review).

Changes since the last investigation

2.4 A number of product changes have been implemented since the 2019 review:

a. Since 1 April 2020, Putting Members' Interests First legislation took effect, which required funds to:

   i. Cancel insurance cover for members with balances below $6,000 (where they didn't request to keep the cover) from 1 April 2020, and

   ii. From 1 April 2020, only start insurance cover for members where they have reached a balance of $6,000 and are age 25 or older.

b. Since April 2021, the eligibility to claim a TPD benefit for Flexible Rollover Product (FRP) members has reduced from a minimum average of 20 hours a week over the month prior to lodging a claim to 9 hours a week over any 6 month period in the 2 years prior to lodging a claim.

c. Since 1 April 2022, members are able to lodge a TPD claim (including Terminal Illness claims) as the Super SA Board has the discretion to consider the application to extend the time limit in respect of eligible members. The eligibility is listed below:

   i. Terminated employment on or after 1 April 2020 for non-casual employees, or

   ii. Casual employees who worked 9 or more hours per week and became incapacitated on or after 1 April 2020 and within 12 months of their last shift.

d. Since 1 September 2021, in response to the Commonwealth's Protecting Your Superannuation (PYS) Package, members who are deemed to be 'inactive' (no contributions received for 16 months) will have their insurance removed, unless they permanently opt-in.

Insurance arrangements provided by Triple S

Death and total and permanent disablement

2.5 Triple S provides death and total and permanent disablement insurance (with TPD including terminal illness) paid as a lump sum. All members, including those who work part time or who are employed on a casual basis, are entitled to insurance cover. All members may choose not to have insurance, with the exception of police and ambulance members who can only cancel their cover from age 65.

2.6 There are two types of cover:

a. Standard cover which comprises:

i. Default benefits - for a fixed weekly premium of $1 per unit per week (which is subsidised from reserves such that the member only pays $0.75 per unit per week), the insurance is a specific dollar amount of insurance which varies with age, up to age 70. The default insurance is three units of standard cover (6 units for police and ambulance members).

ii. Additional/voluntary benefit - members may apply for units in addition to their default cover, subject to evidence of good health. The insurance is a specific dollar amount of insurance which varies with age, up to age 70; premiums are a fixed $1 per unit per week, without any subsidy applied.

b. Fixed cover which comprises:

i. Fixed benefit cover – as part of Project Protect, since 3 September 2018 a new fixed benefit option was introduced. Members can select a fixed level of cover, in units of $10,000, with premiums based on the member's age, up to age 70. Premiums are in line with the standard cover rates.

ii. Legacy fixed cover – this fixed cover offers insurance up to age 65, in units of $75,000 each. The premium is also fixed and is based on the age at which the cover is taken out. Since 13 November 2014 members are no longer able to apply for fixed units of cover at a fixed premium. Members can only increase their level of cover by opting out of this product.

2.7 The maximum insurance cover a member can hold is $1,500,000 or $750,000 if the member is employed on a casual basis.

2.8 Police and ambulance members, who are also members of Triple S, automatically receive six units of standard cover. Police and ambulance members can opt-out of death and TPD after age 65, and out of income protection after age 60.

2.9 Spouse members have the option of applying for voluntary death insurance cover, subject to evidence of good health. The maximum insurance cover a spouse member can hold is $1,500,000.

2.10 The insurance cover and premiums for standard and fixed cover are included in Appendix B.

2.11 Death and TPD insurance does not cover medical conditions that existed at the time of joining Triple S, for a period of six months.

2.12 Approval of a TPD benefit is based on the Superannuation Industry (Supervision) Act 1993 definition, however the member must still terminate employment.

Income protection insurance

2.13 Triple S provides income protection insurance, payable as a fortnightly income for a limited period following temporary disablement.

2.14 The benefit is:

a. 75% of salary plus a contribution replacement benefit (CRB, benefits payable from 3 September 2018 only), bringing the total benefit to 82.125% of pre-disability income (i.e. 75% multiplied by (1 + 9.5%) for the CRB),

b. Payable for a period of up to 24 months, or for the equivalent of 24 months during a 48 month period,

c. Payable up to age 65, and

d. Subject to a waiting period of 30 days (default) or 90 days.

2.15 Premiums for income protection benefits are based on the member's age. The premiums for income protection are included in Appendix B.

2.16 Income protection insurance is provided automatically to most members of Triple S. Casual members are not automatically provided with income protection insurance but can elect to be covered (subject to evidence of good health), and members with income protection elsewhere may opt out of income protection insurance (excluding police and ambulance members until age 60).

Changes to insurance offering and experience after valuation date

2.17 In addition to the changes above which became effective prior to this review, the ability for existing Triple S members and new SA Government employees to choose their own superannuation fund came into effect from 30 November 2022. This will impact the pool of members who have insurance within the Fund, and potentially the profile of insurance claimants, over the coming years. As this change is not in effect at the date of the review, there will not be any impacts observable.

Next review

2.18 The next review will take place at a date no later than 30 June 2025, to be completed within 12 months as required by the Act.

2.19 If, before the next review is due to be completed, any of the following events occur whilst the fund continues to self-insure we recommend the ongoing appropriateness of the self-insurance arrangements be reassessed:

a. A significant change in the insured membership profile (e.g. 20% increase/decrease)

b. A significant change to the benefit design

c. The Board assesses that there has been a significant change in the cost of administrating the insurance arrangements that could potentially impact on the premiums of all members

d. There is subsequently determined to be material changes in the data on which this investigation has been based (where that information would have been known at the date of this investigation).

Statement of compliance

2.20 The report has been prepared in accordance with the Code of Conduct and having consideration for Professional Standard 400, issued by the Institute of Actuaries of Australia.

3. Data

Data provided

3.1 The data was provided by Super SA via Excel files, containing details of all members of Triple S who were covered for insurance between 1 July 2019 and 30 June 2022, as well as claims that were incurred (or commenced in the case of income protection benefits) since 1 July 2018.

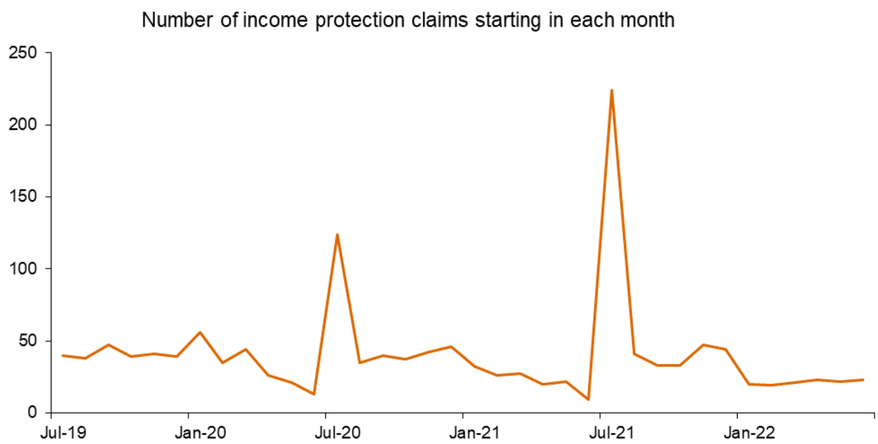
3.2 The claims data was advised to contain details of all members who claimed between 1 July 2018 and 30 June 2022. In addition, we received claims management data in February 2023 which contained information for claims in various stages of processing (including approved but not paid, pending and declined claims).

3.3 In general, the data was considered to be much more comprehensive than that for the prior review (reflecting that the information was sourced from a single administration system) and was provided in the agreed format, leading to minimal queries. We carried out some high-level data validation checks and note the following:

a. The death and TPD claims data for the year to 30 June 2019 shows 192 incurred claims. This compares to 152 claims in 2018, 160 claims in 2020 and 135 claims which have already been reported to the fund for 2021 (noting there will be a delay for 2021 claims which can be reported up to 2 years or potentially more following an incident, so this figure will increase). We are not aware of a reason for this peak in claims in 2019, however we note claims can be expected to fluctuate from year to year. These claims have been taken as advised, with no additional allowance made in the analysis for this experience.

b. 44% of TPD claims have a notified date equal to incident date (254 out of 575 for the past 4 years). This compares to 25% in the 2019 review, so appears to be an increasing trend introduced since the transition to the Bluedoor platform (20% of 2018 claims, increasing to 48% of 2022 claims). Both these dates (notified and incident) are critical in the estimation of claim delay patterns, to estimate an allowance for claims which have been incurred but are yet to be notified to the Fund. It is unrealistic to expect a claim to be lodged the same day an incident occurs, particularly in such a significant number of cases as are present in the data. We recommend the claim assessment and data retention process are reviewed to identify the cause of this anomaly. Refer to section 4 for further details on the allowances made for this.

c. For the last 2 years, income protection claims have shown a significant spike in July, as shown in the chart below. There were 124 claims in July 2020 compared to 13 in June and 35 in August of the same year; 224 claims in July 2021 compared to 9 in June and 41 in August of the same year. These claims have been taken as advised, with no additional allowance made in the analysis for this experience.



d. The number of income protection claims commenced in 2019 based on 2022 data are less than the number based on the 2019 data. There were 504 claims in 2019 at the previous investigation but only 502 for this investigation. This is before any allowance for delayed claims in the previous investigation, where the ultimate number of income protection claims for 2019 would be expected to be even higher than 504 claims. We are not aware of a reason for this reduction in claims. Given this relates to 2019, we have not made any allowance for this experience.

3.4 Other modifications have been made to the data as advised by Super SA as follows:

a. One claim (7406841) was manually added to DTPD claim data

b. Four claims (770590, 1444703, 7394068 & 7426829) from 2019 data were manually added to income protection claim data

c. Date commenced payment for 950 income protection claims have been changed to be consistent with data provided in 2019

d. Two income protection claims (7370158, 90022329) were manually removed.

3.5 Subject to the comments above, we believe that the data used for the investigation is reasonable. However, we do not assume any responsibility for the accuracy or completeness for the data provided to us.

3.6 If the information provided for this investigation is subsequently determined to be substantially inaccurate, you may need to seek advice as to whether this would materially impact on the findings of this investigation.

Approach

3.7 This investigation covered the four-year period to 30 June 2022 (investigation period). The previous investigation covered the four-year period up to 30 June 2019, so the investigations overlap by one year. We considered this useful as a way of checking on the consistency of the two investigations.

3.8 We note that some information provided for the period before 30 June 2019 has been updated since the previous investigation, and hence the 2019 results have been updated from those in the May 2020 report. We don’t believe this will have a material impact to the overall results and consider the update to be a refinement on the 2019 results as it is based on more up-to-date information.

3.9 We extracted relevant data from the information provided and analysed the claims experience separately for death and TPD insurance and income protection, for each of the four years of the investigation, and for the whole period.

3.10 We compared the claims management data with the paid claims data in order to make an allowance for pending and approved but not paid claims in the analysis.

3.11 The administration system stores two key date fields in relation to death and TPD claims: claim incident date and claim notification date. As noted above, the notified and incident dates appear incorrect for a large proportion of the claims. As these are critical fields for assessing claim reporting delays, we have considered alternative approaches. This discussed in more detail in section 4.

3.12 As the data provided is per policy (e.g. default cover and voluntary cover is separated), rather than per member, we have combined members with multiple policies for both membership and claims data so that it is consistent with previous years. We believe this is appropriate as it is likely when a member is eligible for a claim that the claim will cover all of the member’s policies (e.g. default and voluntary cover).

3.13 Members with “Death Units ##” of more than zero in the data are considered insured members for death and TPD for the applicable year (where “##” refers to the applicable financial year and “Death Units ##’ contains the number of units related to that cover). This resulted in the exclusion of 1,878 members where their “Death Units ##” were zero for the four-year period to 30 June 2022 (these members were included in the data to help reconcile premiums paid with the financial data).

3.14 Members with an income protection flag of “Y” (based on the “InForce##” data field) are considered insured members for income protection for the applicable year.

3.15 Members with a “NULL” date of birth and under 17 years old in the data are not considered insured members for income protection for the applicable year. This resulted in the exclusion of 5 members in the 2022 data who were covered for income protection.

3.16 We have analysed the income protection data together for both waiting periods (30 and 90 days) as the number of policies with 90 day waiting periods was not large enough to warrant separate analysis – out of a total of 100,259 members as at 30 June 2022 only 72 members had a policy with a 90 day waiting period.

3.17 Similarly, as there is a limited number of members with the new fixed benefit cover (1,122 members at 30 June 2022), and premium rates are based on standard cover, we have included these members in the analysis of standard cover members.

3.18 We grouped the data into five yearly age groups, as in the previous investigations, because there is insufficient data to produce meaningful results for individual ages.

3.19 We have examined the experience both by number of claims, and by amounts of insurance.

Death and TPD

3.20 A summary of the data as 30 June 2022 in respect of death and TPD insurance is set out below, separated by cover type.

	Standard default only							
	3 Units	Police and ambulance[1]	Other units[2]	Voluntary	Total standard	Fixed cover	Legacy fixed cover	Total cover
Number of members[3]	102,419	4,157	4,608	6,363	**117,547**	1,122	4,345	**123,014**
Total cover ($m)	14,488	1,330	540	1,893	**18,251**	668	2,114	**21,033**
Average cover ($)	141,457	319,886	117,251	297,476	**155,264**	595,410	486,611	**170,982**
Total units	307,257	24,942	11,637	66,658	**410,494**	66,805	28,191	**505,490**

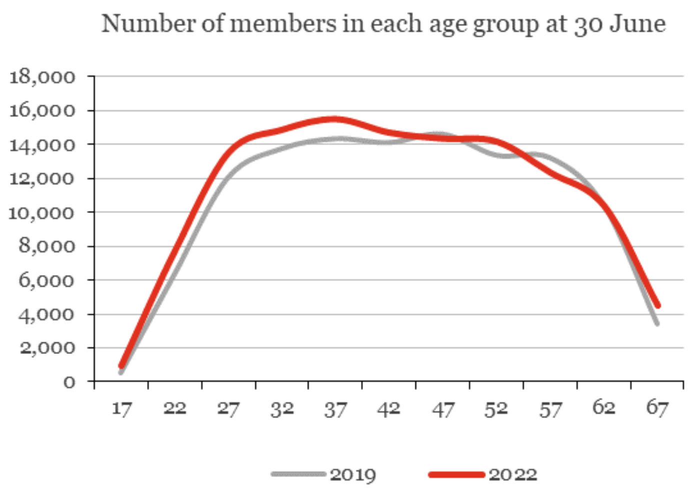
1. Police and Ambulance members are automatically covered for 6 units of death & TPD.

2. Other units have been taken as default cover (and therefore eligible for subsidy) where these have been labelled as "BASSDDTPD" (i.e. base standard death & TPD) policies in the data provided.

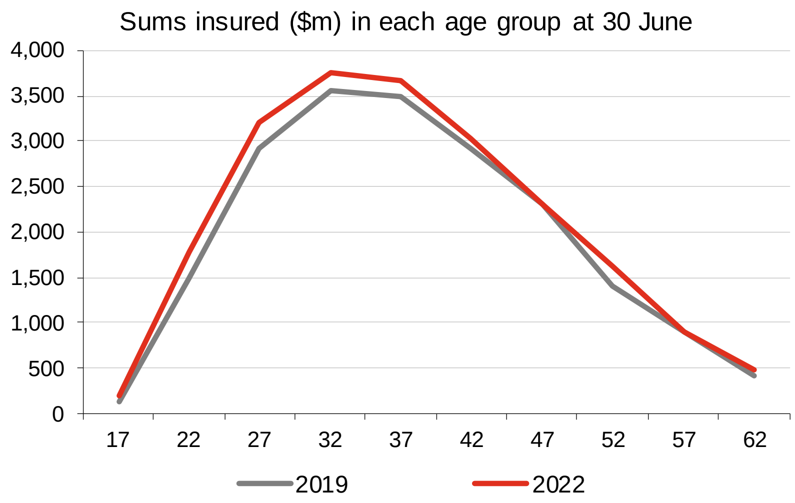
3. Members who have multiple policies (types of cover) are only included once when determining the number of members.

3.21 The number of insured members increased to 123,014 as at 30 June 2022, compared to 114,613 at 30 June 2019. We note that the number of insured members at 30 June 2019 for the previous review was 116,887 (2,274 higher), which is potentially due to the processing delay for resignations. A similar decrease in the number of insured members may be expected as at 30 June 2022 as updated data becomes available, although due to the delay in receiving the insured member data for this investigation the extent of this decrease is likely to be less pronounced.

3.22 The overall age distribution has remained relatively unchanged, as shown below.



3.23 The sum insured by age has increased over the period, as shown below, from an average of $167,964 at 30 June 2019 to $170,982 at 30 June 2022 (1.8%).

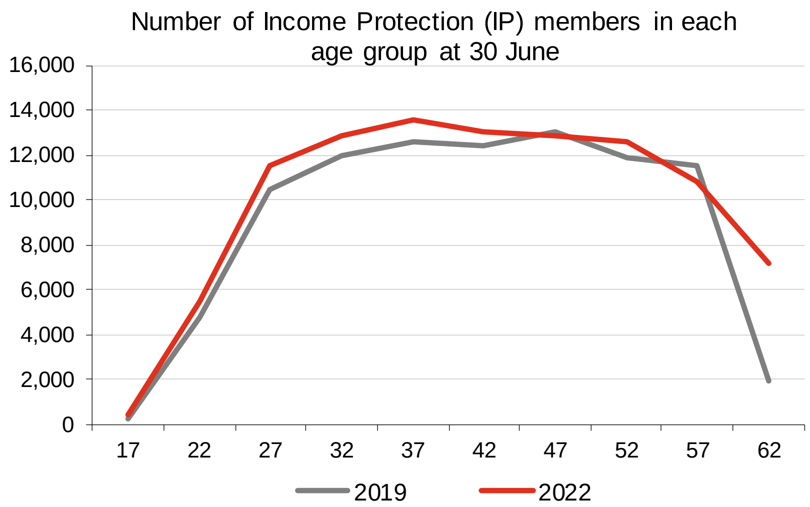


3.24 The total sum insured increased 7.5% to $21.0 billion as at 30 June 2022, from $19.6 billion as at 30 June 2019 (note, the 30 June 2019 amount is based on data for the 2022 review, so is slightly lower than the amount from the previous review, for similar reasons to those discussed in paragraph 3.21 above).

Income protection

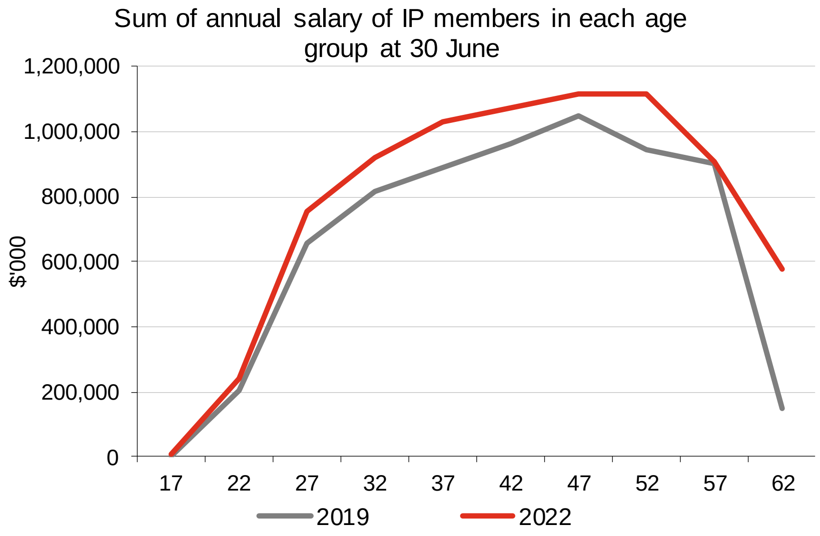
3.25 The number of members with income protection cover has increased 10.4% from 90,776 members as at 30 June 2019 to 100,259 members as at 30 June 2022; the total salary of members with cover increased 17.8% (from $6.6bn to $7.7bn). The increase in total salary is mostly driven by the increase in membership along with salary increases.

3.26 We note that the number of insured members at 30 June 2019 for the previous review was 92,543 (1,767 higher) which is potentially due to the processing delay for resignations. A similar decrease in the number of insured members may be expected as at 30 June 2022 as updated data becomes available, although due to the delay in receiving the insured member data for this investigation the extent of this decrease is likely to be less pronounced.



3.27 As cover was only extended from age 60 to 65 in September 2018, there has been a marked increase in the number of members with income protection cover between ages 60 and 65 at 30 June 2022 compared to 30 June 2019.

3.28 The average income protection benefit for insured members is $63,408 per annum as at 30 June 2022, based on 82.125% of the average salary of $77,209. This has increased 2.2% per annum from 30 June 2019 when the average benefit was $59,470 (average salary $72,414).



4. Death and TPD experience analysis

Adjustment for incurred but not reported (IBNR) claims

4.1 The data provided was effective at 30 June 2022 and was produced from January 2023 to February 2023.

4.2 Claims are recognised on the administration system not when they occur, but when they are approved, which can take a number of months to years.

4.3 This means that a number of claims which occurred prior to 30 June 2022 are not included in the data, because they have yet to be reported, or are still being processed. We need to estimate and include the value of these claims, to ensure we capture all claims occurring in the period under review. This is similar to the way in which accounts need to include expenses which have been accrued but not yet paid.

4.4 We analysed the historic delay between the date a claim was incurred and the date it was reported to the fund, using the notification date. As discussed in section 3, we have concerns regarding the accuracy of the two fields used to determine the notification delay, being incident date and notified date, as 44% of claims for the past 4 years have the two dates equal to each other (254 out of 575 claims). This is unlikely in practice, especially for such a significant number of claims, and would significantly shorten expected reporting delays if the data is taken as provided.

4.5 While claim delays vary between insurers and funds, average reporting times for TPD claims are generally between 15 and 20 months. The presence of the 254 claims with the notified date being the same as the incident date reduces the observed reporting delays for Triple S by between 2 and 4 months. To avoid underestimating the potential claim liability, we have excluded these claims for the purpose of estimating the claim delay period and therefore the number of incurred but not reported claims for 2021 and 2022.

4.6 A review of claims advised to have been incurred in 2019 (based on data in 2022) showed the potential claims (49 claims) and IBNR (28 claims or 15% of claims) allowance that was included for the 2019 investigation was slightly higher than the resulting experience (61 claims in addition to the 131 already notified at 2019, resulting in 192 actual claims for 2019).

	2018	2019	Total
Claims in 2019 data (unadjusted for IBNR)	130	131	**261**
Potential claims[1] (% of claims in 2019 data)	14 (11%)	49 (37%)	**63**
IBNR claims[2] (% of claims with potential)	14 (10%)	28 (15%)	**42**
Number of expected claims[3] (% increase of unadjusted claims)	**158 (22%)**	**208 (59%)**	**366**
Actual claims in 2022 data	152	192	**344**
Actual/Expected	96%	92%	**94%**

[1] Potential claims are claims arising from pending and declined claims at 30 June 2019, assuming 95% of all TPD claims will be approved. 16 claims that were declined or pending to 30 June 2019 were subsequently approved. This compares to an allowance of 31 pending claims expected to be approved (the remaining 18 potential claims were approved but not paid at 30 June 2019).

[2] IBNR claims are determined as 15% of the known 2019 claims and 10% of 2018 claims, after allowing for potential claims, e.g. for 2019: (131 + 49) x 15% = 28 IBNR claims.

[3] Totals may not add due to rounding as IBNRs not applied as whole numbers.

4.7 Overall, after allowing for potential and IBNR, actual claims were 4% lower than expected in 2018 and 8% lower in 2019.

4.8 Based on the observed delay pattern (excluding 254 claims with notified date equal to the incident date), review of 2019 IBNR allowance and industry trends, the IBNR allowance for 2022 has been determined as follows:

% of known claims	2021	2022
Death potential claims	0%	4%
TPD potential claims	42%	92%
Death IBNR	5%	67%
TPD IBNR	21%	97%

4.9 So for TPD claims for 2022, allowances for pending and declined claims which may be approved in the future is estimated at 92% of claims known at 30 June 2022, and claims which have been incurred but not reported are assumed to be 97% of the claims known at 30 June 2022.

4.10 We note since the last investigation, the Super SA Board has been given the discretion to consider the application to extend the 2-year time limit in which claims must be lodged. There is no experience that has developed to make an assumption for the allowance of claims notified in excess of 2 years after the date at which they were incurred, but we do not expect the change to lead to a significant change in the number of claims ultimately paid.

4.11 The following table shows the impact of potential claims and IBNR assumptions on total death and TPD claim amounts over the review period:

Claims known at 2022 ($'000)	2019	2020	2021	2022	Total
Amount of claims **(unadjusted)**	19,525	12,364	10,306	7,973	**50,167**
Amount of potential claims[1]	0	0	4,300	7,600	**11,900**
Amount of IBNR claims	0	0	1,412	6,657	**8,068**
Amount of claims[2] **(with potential and IBNR)**	19,525	12,364	16,018	22,229	**70,135**
Total potential and IBNR allowance	-	-	55%	179%	

[1] Potential claims are claims arising from pending and declined claims at 30 June 2022, assuming 95% of all claims will be approved, based on the average claims size ($100,000).

[2] Totals may not add due to rounding as IBNR not applied as whole numbers

4.12 We have decreased the average claim size assumption slightly to $100,000 (previously $105,000 for the 2019 investigation) for death and TPD claims when allowing for potential and IBNR claims. This is in line with the slight decrease in average claim size for 2022 (average death $83,837, average TPD $97,056).

4.13 The potential claim amount of $7.6 million in 2022 is based on 76 potential claims and an average claim size of $100,000. Similarly, the estimated IBNR of $6.7 million in 2022 is determined based on approximately 67 IBNR claims. Please refer to Appendix C for more details on the number of death and TPD claims and allowances for 2019-22.

4.14 The overall claims amount (including potential and IBNR) has increased from $19.5 million for 2019 to $22.2 million for 2022 (4% increase).

4.15 The frequency of claims is stable compared to the 2019 investigation, with 0.17% of members claiming over 2019-22, the same rates as 2016-19.

4.16 The allowance for IBNR claims is $8.1 million for 2021 and 2022, which is higher than the $4.3 million allowance in 2019. This is mainly due to the claim data for 2019 being provided much later after 30 June than for this investigation. This means a significant proportion of delayed claims were already known for the 2019 review so did not need to be allowed for in the IBNR estimate. There is a much greater allowance for the 12 month period prior to the 2022 review date than for the equivalent period for the 2019 review ($6.6 million compared to $3.6 million).

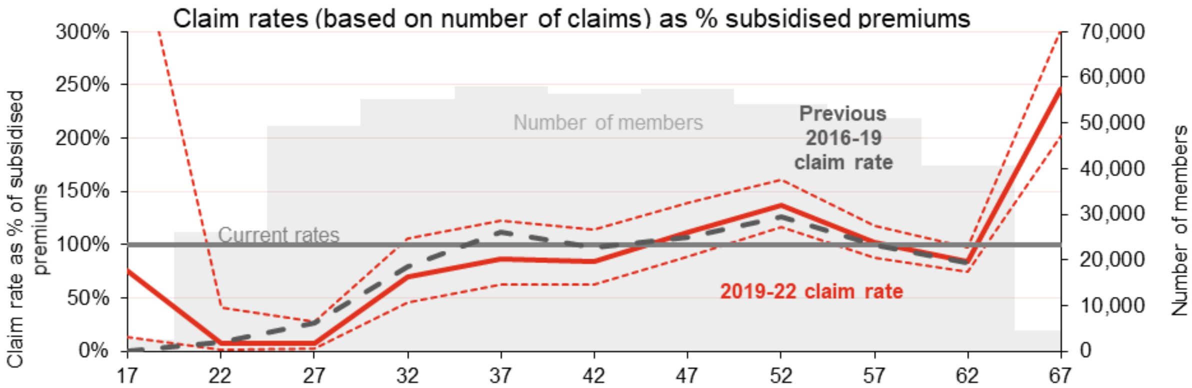
4.17 The actual IBNR could still be higher than $8.1 million (which is based on past experience). As the results are sensitive to this key assumption it is prudent to acknowledge this amount may vary in practice. If it was 50% higher the IBNR allowance would increase by $4.0 million. We have made an allowance equal to this in the IBNR under-estimation reserve. We note this does not represent the upper range of all possible outcomes.

4.18 The number of claims and amount of claims following this point in the report include the IBNR and potential claims allowances (unless advised otherwise).

4.19 The effect of the IBNR on the actual number of claims for death and TPD Insurance for 2019-22 is detailed in Appendix C.

Claims experience by number of claims

4.20 The claim rates for death and TPD Insurance, based on the number of claims and the number of insured members, are shown below:



4.21 By way of explanation:

a. The solid red line shows the 2019-22 claim rate as a percentage of subsidised premiums (subsidisation on default units only). For example, if the red line is showing 50% of subsidised premiums this means the claim rate was half the amount of premiums for that age group. A breakdown is shown in Appendix B

b. The dotted red lines show the “95% confidence interval”, i.e. the true claim rates should be somewhere within the dotted lines with a 95% probability

c. The shaded bars in the background show the number of members in each age group. The dotted confidence intervals are narrowest where there is the most data

d. The grey dashed line shows the previous claim rates from the 2016-19 investigation (average claim rate of 0.17% of number of members).

4.22 The graph shows that the 2019-22 claim rate based on the number of claims exceeds the premiums for members aged approximately 45 to 55 but is lower than premiums at all other ages.

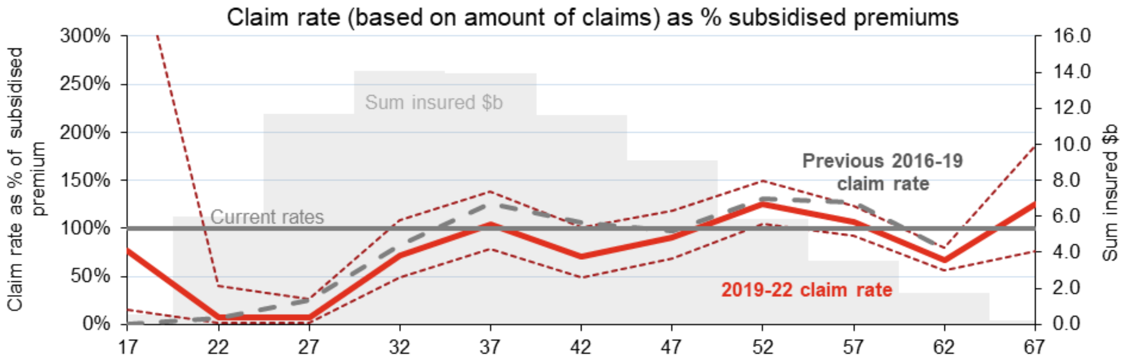
4.23 The average claim rate remained stable at 0.17% of members insured for 2016-19 and 2019-22, noting some volatility in intervening years.

Claims as % of members insured

2016-19 total	2019	2020	2021	2022	2019-22 total
0.17%	0.18%	0.14%	0.18%	0.20%	0.17%

Claims experience by amount of claims

4.24 The claim rates for death and TPD Insurance, based on the amount of claims and the sum insured, are shown below:



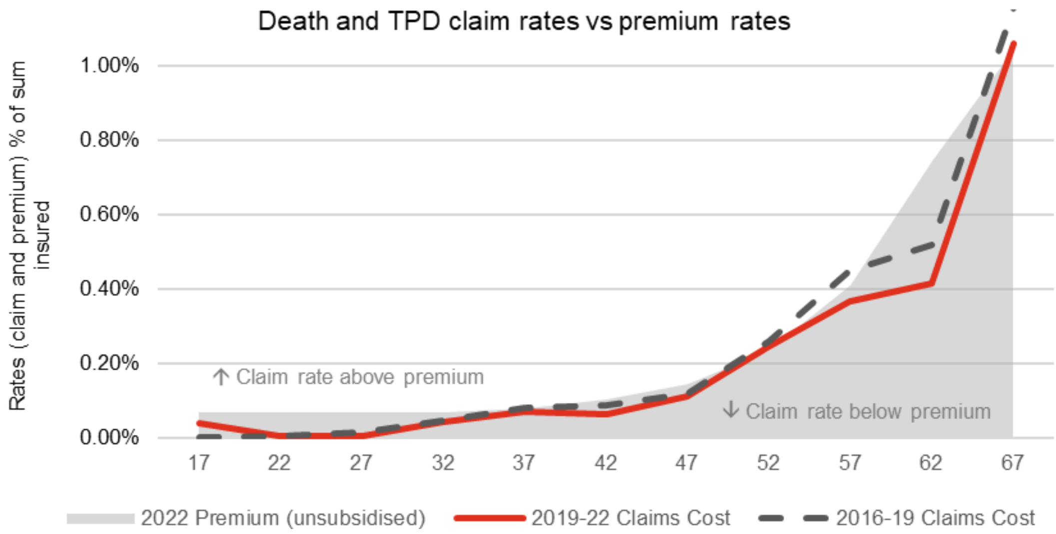
4.25 The claim rate based on amount of claims exceeds the premium rate for members aged between approximately 50 and 55. The claim rate based on amount of claims is lower than the premium rate for most members, indicating that most members are paying more in premiums than their expected claim cost.

4.26 The cost of claims (including IBNR) has marginally decreased from 0.11% for 2016-19 to 0.09% for 2019-22.

Claims as % of sum insured

2016-19 total	2019	2020	2021	2022	2019-22 total
0.11%	0.11%	0.06%	0.08%	0.11%	0.09%

4.27 The below graph shows the 2019-22 claim rates (red line) versus the age based premium rates (grey shaded), allowing for lower premiums for subsidised cover; we have also shown the 2016-19 claim rate (grey dashed) for comparison:



4.28 As shown above the claim rates closely follow the age-based premiums for most ages. This suggests the premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities.

Death and TPD analysis by 'Group'

4.29 The insurance data enables analysis by pre-defined groups; however these designations do not allow for occupational analysis. The table and chart below detail the results for each group.

Group	Sum insured 2019-22 ($bn)	Number of claims 2019-22[1]	Total claims 2019-22 ($m)[1]	Claim rate 2019-22 (% of sum insured)[1]	Average claim size[1]
Health	27.5	301	21.1	0.08%	70,000
Education	22.1	212	15.2	0.07%	72,100
Police	6.8	28	6.7	0.10%	235,200
Correctional Services	1.2	25	1.9	0.15%	75,100
Emergency	1.8	16	2.9	0.16%	182,900
Other	19.0	224	22.1	0.12%	98,600
Overall	**78.4**	**806**	**69.9**	**0.09%**	**86,700**

[1] Includes potential claims and IBNR allowance.

4.30 The analysis shows:

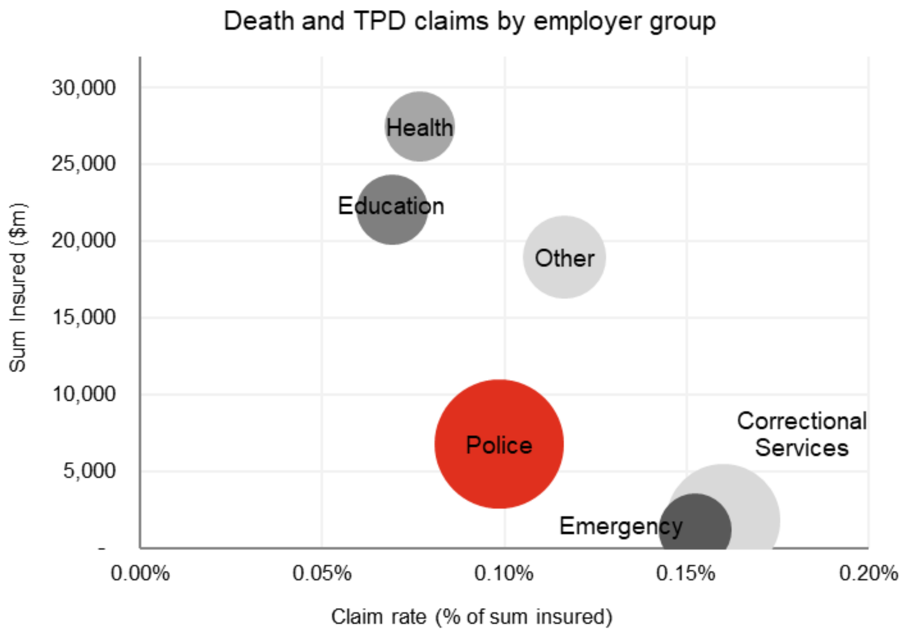
a. Correctional Services and Emergency had the highest claim rate, though the actual claim rate (once all claims are known) is highly uncertain due to statistically small number of claims

b. Police had the largest average claim size due to higher level of default units (6 units compared to 3 units for other members)

c. Overall average claim rate 0.09% and claim size $86,700 (0.11% and $90,000 in 2019)

d. All rates are indicative only as the small number of claims per group makes rates unreliable.

4.31 The chart below illustrates these results, where the size of the bubble represents the average claim size.



5. Income protection experience analysis

5.1 As with death and TPD, the income protection data provided to us does not include all the claims which were incurred prior to 30 June 2022. We therefore need to adjust the data to allow for additional claims which will be reported to the fund after 30 June 2022 relating to incidents incurred prior to that date.

5.2 There are two types of adjustments for income protection claims:

a. Incurred by not reported (IBNR) provisions are made for claims that are not reported or finalised for some time after they occur, and would otherwise be represented in the claims experience under review

b. Incurred but not enough reported (IBNER) provisions are made where the duration of income protection payments is potentially longer than the date of the next review.

Adjustment for incurred but not reported (IBNR) claims

5.3 As there is no accurate proxy for incident date with income protection claims, IBNR and IBNER are approximated based on observed claim amounts per month and delay patterns.

5.4 As noted in section 3, the number of income protection claims commenced in July 2020 and July 2021 were significantly higher than other months. As income protection generally has much shorted delay periods than TPD (generally around 3 months) these July spikes are unlikely to impact on the IBNR experience for this review, and therefore no explicit allowance has been made.

5.5 For the 24 months to 30 April 2022 income protection claims averaged 42 claims per month. For the last 2 years claims have been reducing up to June but then spiking in July as discussed. So, while claims average 42 per month for the 24 months to 30 April 2022, April to June claims have averaged 18.5 claims per month. As claims in the later months of 2022 are yet to develop, targeting 40 claims for these months (i.e. to maintain a reasonable yearly average) results in an IBNR of 4.2% of the observed claims for 2022 (6.5% of claim amounts).

5.6 The IBNR for 2019 was 6% of claims (targeting 44 claims per month for the months leading up to 30 June 2019). As with death and TPD, we expect the IBNR allowance to be higher for this investigation due to the data being provided closer to the valuation date (and hence more delayed claims are yet to be notified to the Fund and won't be included in the data).

5.7 The number of income protection claims adjusted for the expected number of incurred but not reported claims is as follows:

Claims to 30 June 2022	2019	2020	2021	2022	Total
Number of claims (unadjusted for IBNR)	502	439	460	528	**1,929**
IBNR claims allowance	0	0	0	22	**22**
Number of claims (with IBNR)	502	439	460	550	**1,951**
IBNR allowance		-	-	4.2%	

Adjustment for incurred but not enough reported (IBNER) claims

5.8 The claims data includes the date on which income protection payments will cease, or, if the date is beyond the date on which data was extracted, the date on which the member's medical condition will next be assessed. Clearly, many claims will continue beyond this date, so we need to adjust the dates to reflect the expected total payment period.

5.9 IBNER is estimated based on observed duration of claims. The average remaining duration for current income protection payments is estimated based the distribution of completed income protection claims.

5.10 Claims in payment, with a review date after 30 June 2022, are assumed to continue based on the following table, given their duration (months) to that date:

Current duration (months)	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
Remaining duration (months)	8.5	8.5	8.5	7.5	6.5	5.5	4.5	1.5

5.11 For example, for members who have been receiving income protection payments for 9-12 months it is estimated they will continue to receive income protection for another 7.5 months on average (so an average 18 months in total).

5.12 The IBNR and IBNER allowance equates to 58% of claims for 2022 and 10% for 2021. That is, $13.1 million in total, increased from $11.6 million in 2019, as detailed below.

Claims known at 2022 ($'000)	2019	2020	2021	2022	Total
Amount of claims (unadjusted for IBNR)	23,393	21,518	20,358	18,811	**84,080**
IBNR & IBNER claims allowance[1]	51	233	1,953	10,825	**13,061**
Amount of claims (with IBNR & IBNER)	23,443	21,751	22,311	29,636	**97,141**
IBNR and IBNER allowance	0%	1%	10%	58%	

[1] Allows for the fact that members can receive up to 24 months of income protection payments during any 48 month period

5.13 For 2022, the $10.8 million IBNR and IBNER claim allowance comprises:

a. An IBNR allowance of 6.5% of claims in payment (including IBNER) to 30 June 2022 ($1.8 million), plus

b. An IBNER allowance based on the observed duration of each claim in payment and adjusted for an estimated remaining duration (refer to table under 5.10). This equates to $9.0 million, or 48% of claims paid in the year to 30 June 2022.

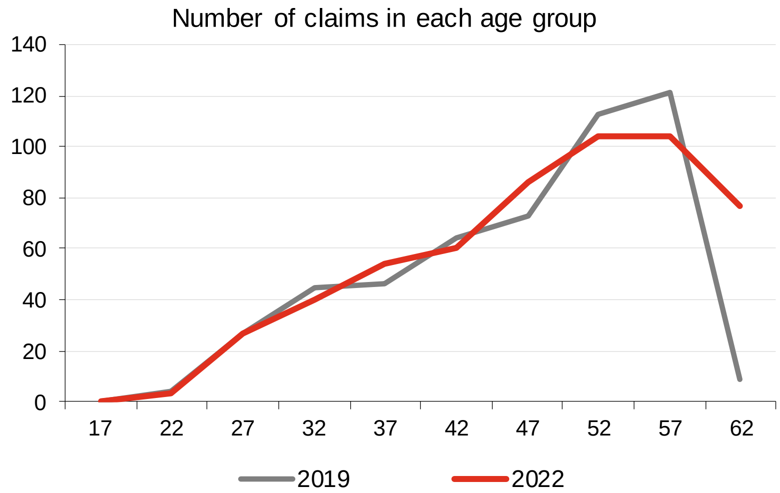
5.14 The level of IBNR and IBNER has increased since the last valuation (10% for 2021 and 58% for 2022 compared to 7% for 2018 and 53% for 2019). Similar to the change in the death and TPD IBNR, this is due to the data being provided at a later date, and hence the IBNR allowance is higher as for 2019 more claims reported after the investigation data were already known/included in the valuation data.

5.15 The actual IBNR and IBNER could still be higher than $13.1 million (which is based on past experience). As the results are sensitive to this key assumption it is prudent to acknowledge this amount may vary in practice. If it was 50% higher this allowance would increase by $6.5 million. We have made an allowance equal to this in the IBNR and IBNER under-estimation reserve. We note this does not represent the upper range of all possible outcomes.

5.16 The number of claims and amount of claims following this point in the report include the IBNR and IBNER allowances (unless advised otherwise).

Claims experience by number of claims

5.17 The charts below show the number of income protection claims by age group, after adjustment for IBNR and IBNER, as at 30 June 2019 and 2022.



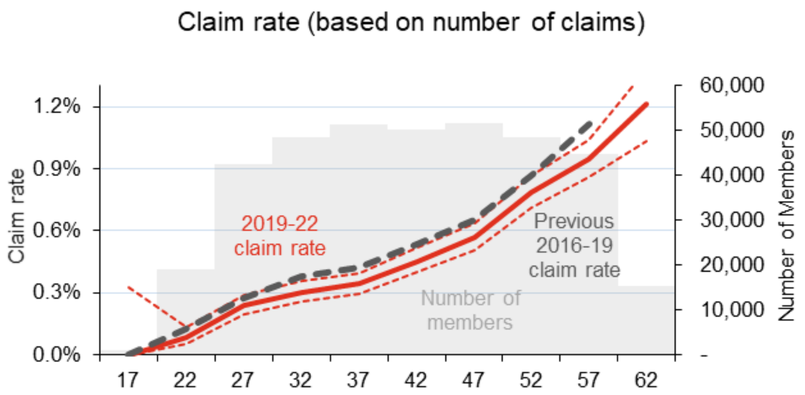
5.18 The number of claims commencing in 2022 is similar at almost every age compared to the number for 2019, except for members over 50. Cover was extended from age 60 to 65 in September 2018, so the number of claims aged between 60 and 65 in 2022 has notably increased compared to 2019.

5.19 The claim rates have decreased since the previous valuation. The rate for 2016-19 was 0.59%, with a steady trend to 0.57% in 2019. This trend has continued, with the lowest being 0.48% in 2020 and 2021. The claim rates, as a percentage of members, from 2019 to 2022 were as follows (includes IBNR):

Claims as % of members

	2016-19	2019	2020	2021	2022	2019-22
Claims	2,032	502	439	460	550	1,951
Claim rate	0.59%	0.57%	0.48%	0.48%	0.56%	0.52%

5.20 The claim rates for income protection, based on the number of claims and the number of insured members, are shown below:



5.21 By way of explanation:

a. The solid red line shows the rate of claim for each age group, based on the number of insured members in that group.

b. The dotted red lines show the "95% confidence interval", i.e. the true claim rates should be somewhere within the dotted lines with a 95% probability.

c. The shaded bars in the background show the number of members in each age group. The dotted confidence intervals are narrowest where there is the most data.

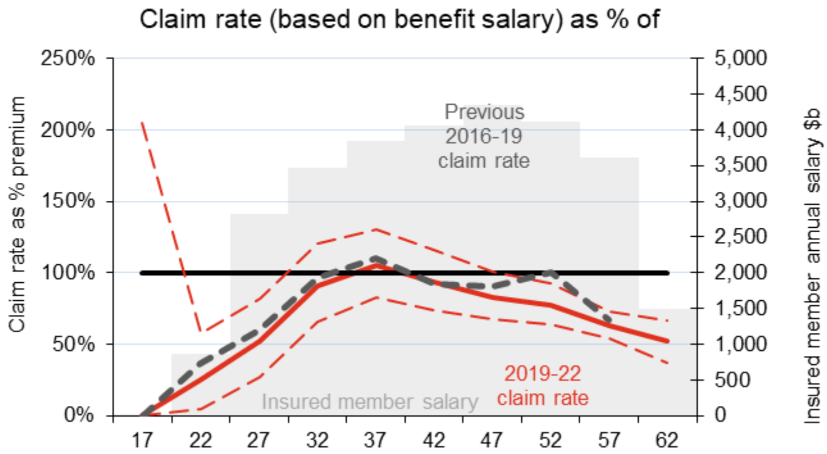
d. The grey dashed line shows previous equivalent rates from the 2016-19 investigation, with allowance for IBNR and IBNER.

5.22 Similar to death and TPD the claim rate for members aged 60 to 65 is based on claims incurred in the three years to 30 June 2022, all other claim rates are four-year averages. The confidence interval widens for 60 to 65 year olds, reflecting low numbers of insured members and claims.

5.23 The graph above shows that income protection claim rates based on the number of claims have reduced at all ages compared to those at the previous review.

Claim experience by amount of claims

5.24 The claim rates for income protection, based on the amount of claims and the salary of insured members, are shown below relative to the premium rates:



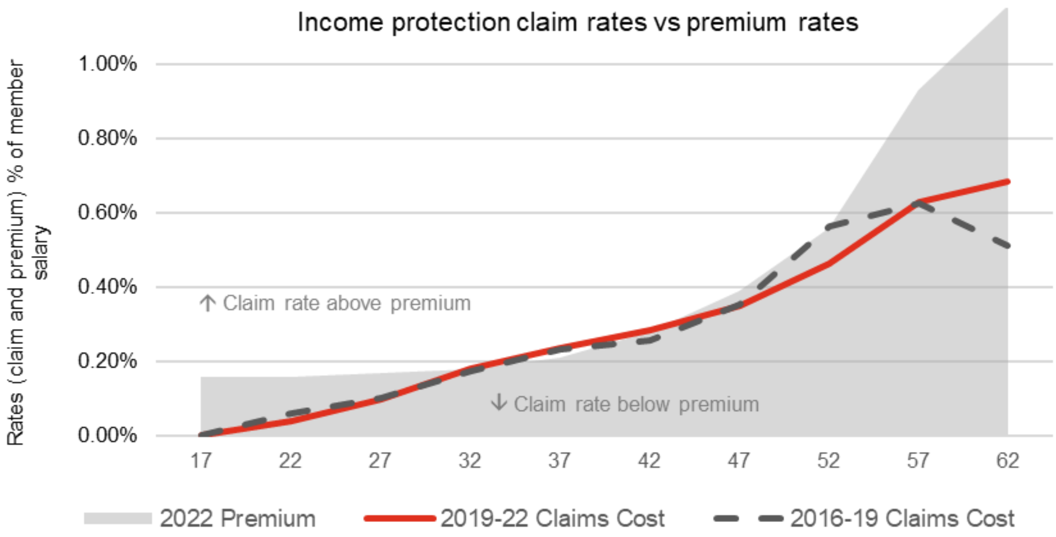
5.25 The claim rate based on amount of claims is lower than the premium rate for members under age 35 and members over age 40, indicating that these members are paying more in premiums than the amount of benefits that were being paid.

5.26 The overall amount of claims was 0.34% of salary for 2019-22 but was as high as 0.38% for 2022.

Claims as % of salary insured

	2016-19	2019	2020	2021	2022	2019-22
Claims rate as % of salary	0.33%	0.36%	0.31%	0.31%	0.38%	0.34%
Average duration (yrs.)	0.75	0.76	0.80	0.75	0.75	0.76

5.27 Aged-based pricing was implemented in September 2018 and the below graph shows the 2019-22 claim rates (red line) versus the age based premium rates (grey shaded); we have also shown the 2016-19 claim rate (grey dashed) for comparison:



5.28 As shown above the claim rates broadly follow the age-based premiums, though the premiums are higher at the youngest and oldest ages. This suggests the premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities.

5.29 The premium rates for 60- to 65-year-olds were approximately 60% higher than the claims cost for 2019-22. However, cover has only been in place for this cohort for 3 years and there is a trend to increasing claims so we recommend retaining the existing premium rates.

6. Payments versus premiums analysis

Death and TPD insurance

6.1 The Act requires this review to consider the extent to which premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities at the time of the report and in the foreseeable future.

Expected cost of death and TPD claims for standard and new fixed benefit cover

6.2 The current premium is $1 per unit per week for standard cover, however default cover (up to first 3 units for regular members, 6 units for police and ambulance members) is subsidised to $0.75 per unit per week from the insurance reserves.

6.3 As there is a limited number of members with the new fixed benefit cover (1,122 members at 30 June 2022) and premium rates are based on standard cover rates, we have included these members in the results of standard members.

6.4 Based on the claims experience for the last four years, the expected cost of claims and expenses is below $1.00 per unit (approximately $0.72 based on 2019-22 claim rates) for all members.

6.5 The table below illustrates the current subsidised premiums:

Expected values	2022 cover based on subsidized premiums ($'000)	2022 cover based on premiums without subsidy ($'000)	Difference
Default premiums[1]	13,952	18,807	4,855
Voluntary and fixed premiums[2]	3,688	3,688	-
Total premiums[3]	**17,640**	**22,494**	**4,855**
Expected claims	(15,030) [4] to (17,990) [5]	(15,030) [4] to (17,990) [5]	-
Expenses[6]	(2,907)	(2,907)	-
Premiums minus payments	**(297) to (3,257)**	**1,598 to 4,558**	**4,855**

[1] Based on 361,666 units for members with subsidised premiums (identified as "BASSDDTPD" in the data).

[2] Based on 48,828 voluntary standard units and 66,805 fixed benefit units (identified as "VOLSDDTPD" (i.e. voluntary standard death and TPD) and "FBDTPD" (i.e. fixed benefit death and TPD) in the data).

[3] Based on our calculation of premiums using insured members as at 30 June 2022. This is higher than premiums of $16.2m actually paid in 2022 as that reflects lower insured members at the beginning of the year compared to the end of the year and may be higher than actual 30 June 2022 premiums due to back-dated changes (e.g. members who have exited or need to be preserved).

[4] Expected claims based on 2019-22 observed claim rate for Super SA and amount of sum insured as at 30 June 2022. Expected claims for standard cover and new fixed benefit cover members are about 80% of overall claims, based on sum insured.

[5] Expected claims based on 2022 claim rate and amount of sum insured as at 30 June 2022.

[6] Estimate based on actual operational costs for FY2022 and 5% of death and TPD members having standard and basic fixed cover.

6.6 The premium subsidy from reserves for $0.75 per default unit per week is approximately $4.9 million per annum.

6.7 Given the results above, the premium subsidy could be maintained for a period of three years based on the level of free reserves ($10.7 million, refer section 7 below) and the 2022 claims rate; the operating deficit based on the 2019-22 claim rate would support the annual subsidy for a longer period.

6.8 The existing premiums remain appropriate given the current membership profile, claims experience for 2019-22 and the full cost of current premiums ($1 per unit per week for standard and new fixed benefit cover).

Expected cost of death and TPD claims for legacy fixed cover

6.9 The legacy fixed cover product is no longer offered. However, existing policyholders at the cut-off date can continue to be covered under this policy.

6.10 The table below shows expected premiums are currently less than expected claims and expenses. Premiums will remain fixed whereas expected claims will increase as the fixed cover members' age.

6.11 The short fall in premium should be considered as drawing on reserves built up in previous years while members were paying higher premiums than the variable cover rates.

Legacy fixed cover product	$'000
Expected premiums[1]	3,120
Expected claims	(4,430)[2] to (3,915)[3]
Expenses[4]	(145)
Premiums minus payments	**(1,455) to (939)**

[1] Based on 28,191 units and premium data provided by Super SA

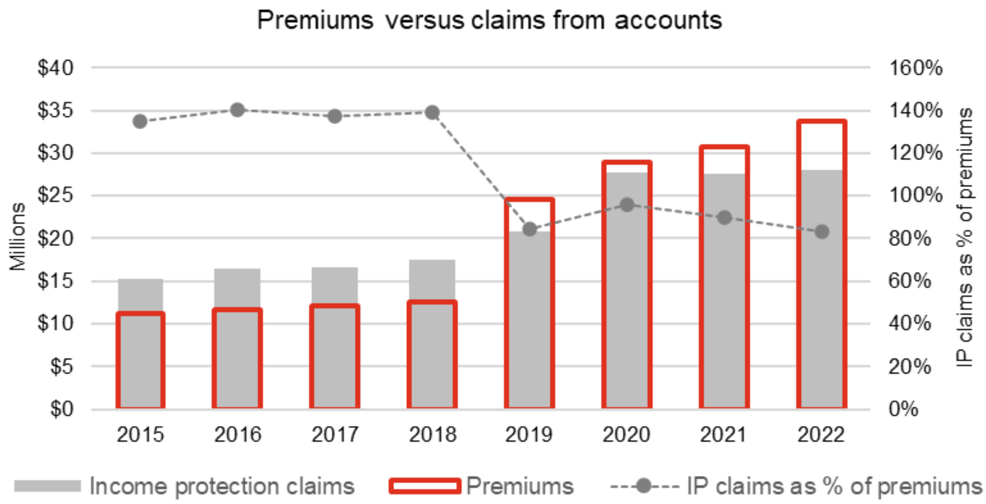
[2] Expected claims based on 2019-22 observed claim rate for Super SA and amount of sum insured as at 30 June 2022. Expected claims for legacy fixed cover members are about 20% of overall claims, based on sum insured.

[3] Expected claims based on 2022 claim rate and amount of sum insured as at 30 June 2022

[4] Estimate based on actual operational costs for FY2022 and 5% of death and TPD members having legacy fixed cover.

Income protection insurance

6.12 Since 2018, income protection premiums have changed from a flat 0.2% of salary to age-based premium rates, as shown in Appendix B. As a result of the change to age-based tables, premiums increased significantly in 2019, with premiums exceeding benefits paid since 2019. The chart below shows actual claims paid and premiums received based on the accounts[6].



6.13 The 0.38% claim rate for 2022 is lower than the current premium (0.43% of salary on average). With an allowance for expenses, the cost is expected to increase to 0.45% of salary, with a potential for further increases.

[6] Note: these are actual claim payments as per accounts, and do not include allowances for IBNR and IBNER which are included in expected claims figures in 6.13 below for example.

6.14 The table below illustrates the expected contribution to/draw from reserves for income protection insurance. Where claims costs are above premiums, the difference will be met from reserves.

	Based on 2019-22 claim rates	Based on 2022 claim rates
Expected premiums	33,999	33,999
Expected claims	(26,732)	(29,636)
Expenses[1]	(5,377)	(5,377)
Premiums minus payments	**1,890**	**(1,014)**

[1] Estimate based on actual operational costs for FY 2022.

6.15 Given the results above, we do not believe there is an immediate need to change the premium structure at this time, as the existing premiums remain appropriate given the current membership profile and claims experience for 2019-22.

7. Reserves

7.1 In the past, self-insurance was industry practice for State, Territory and Commonwealth schemes and certain large corporate superannuation funds.

7.2 However, the extent of self-insurance has substantially reduced in past years as APRA no longer allows self-insurance for public offer funds, because of the risks related to inadequate and unsegregated reserves and unrealistic pricing of the risks borne by the fund (as catastrophe cover and the cost of reserves is generally ignored in any pricing comparison).

7.3 APRA considers that life insurance companies registered under the Life Insurance Act 1995 are the best mechanism for superannuation funds to provide death and TPD benefits to members and has restricted public offer superannuation funds from self-insuring.

7.4 Triple S remains self-insured and must meet the cost of its own claims and insurance expenses. Ultimately, it is the South Australian government that carries the scheme's self-insurance risk, as there is no formal reinsurance arrangement in place. It is therefore prudent for the Board to hold substantial reserves against this risk.

7.5 In addition to self-insurance risk, the scheme also bears the following risks:

a. Catastrophe

b. Asset fluctuation

c. Underestimation of claim rates

7.6 Year on year fluctuations in claims experience are expected and don't pose a risk in and of themselves.

7.7 The Triple S scheme needs to hold reserves to mitigate these risks because it has no recourse to the employer. We propose that they be as follows.

Prudential reserve

7.8 A prudential reserve may include an allowance for normal statistical fluctuations in claims from time to time, volatility of outstanding claims, and protection against exceptional events.

IBNR and IBNER reserve for claims not finalised

7.9 Our analysis has showed that some claims are not finalised, or even reported, for quite some time after they are incurred. A provision needs to be made in the Scheme accounts for these claims.

Death and TPD

7.10 The previous investigation recommended holding a provision of 21% of annual premiums for death and TPD claims.

7.11 We have calculated a provision of 39% of annual premiums for this investigation, consistent with the approach taken for the last valuation.

7.12 This amounts to $8.1 million at 30 June 2022 ($4.3 million at 30 June 2019).

7.13 In addition, we have made an allowance for potential claims expected to be approved and declined claims that may be approved on appeal in proportion to observed rates. This amounts to $11.9 million at 30 June 2022 (compared to a reserve of $6.6 million in 2019), as can be seen in the amount of potential claims in 4.11 above. The reserve has been increased due to a higher number of potential claims, and a higher average claim assumption.

7.14 In total, the reserve for additional expected claims relating to the investigation period is $20.0 million as at 30 June 2022 (compared to $10.9 million was assumed at 30 June 2019).

Income Protection

7.15 Income protection requires a reserve not only for claims which have not been reported, but also for continuing payments for current claims.

7.16 Based on the approach outlined in this report, we estimate this at about 39% of annual premiums for IBNR and IBNER (compared to 39% for 2019).

7.17 This amounts to $13.1 million at 30 June 2022 ($11.6 million at 30 June 2019).

Volatility of existing claims

7.18 The IBNR and IBNER are estimates based on a number of factors including industry knowledge and observed experience however there is a risk that these estimates may be higher than expected.

7.19 Consistent with the previous investigations, we recommend holding a reserve of 50% of the estimated outstanding claims (IBNER and IBNR). This requires an additional reserve amount of $10.7 million in 2022 (i.e. 50% of death and TPD IBNR of $8.1 million and income protection IBNR and IBNER of $13.1 million; $8.0 million in 2019).

7.20 We have included this reserve with the reserve for IBNR and IBNER, in the table which follows this analysis.

Fluctuation reserve

7.21 We estimated the random statistical variation in claim amounts for a fund of this size for death and TPD and income protection combined, which is based on additional cost arising if claims experience is two standard deviation from the observed rate of claim. This gives claim costs at 95% level of confidence. We recommend the statistical fluctuation reserve to remain at $10 million as at 30 June 2022.

Closed/Legacy Fixed cover reserve

7.22 Fixed premium is currently operating at a loss. As members' age and premiums stay fixed, claims are expected to continue to increase above the level of premiums.

7.23 Estimation of the reserve to be held in respect of this cohort of members has been based on the expected profit and loss assuming average claim rates will continue at current levels for 5 to 10 years. Based on this, we recommend the reserve for fixed cover members to remain at $10 million.

Self-insurance reserve

7.24 Certain additional reserves are needed for the Triple S scheme because it is a self-insurance scheme.

Asset resilience reserve

7.25 The insurance reserve is substantially invested in equity and property assets, whose value can fluctuate significantly. We suggest that it would be prudent to allow for this by holding an asset resilience reserve which approximates the amount by which the Prudential Reserves could reduce under a modest market fall. This ensures that the true value of the insurance reserve is not overstated, even when market values fall.

7.26 We propose setting the resilience reserve at 15% of the prudential reserves in line with the approach in prior years. This results in a reserve of $9.6 million at 30 June 2022 (based on prudential reserves of $63.8 million). This is higher than the asset resilience reserve at 30 June 2019 ($7.6 million), due to the increase in prudential reserves.

Contingency reserves

7.27 The main risk is from exceptional events which can incur large numbers of claims, such as a hospital epidemic, terrorism, or judicial risk (e.g. misinforming members about their benefits). Such rare events are extremely difficult to quantify.

7.28 On the one hand, Triple S is self-insured, and must meet its own claims unless it can obtain financial support from government. It may be prudent for the Board to hold substantial reserves to mitigate this risk. The difficulty is in quantifying the level of protection, and the corresponding reserve required to meet it.

7.29 On the other hand, reserves are financed completely from insurance premiums paid by Triple S members, and it would be unfair to those members to hold excessive reserves that had very little chance of being required.

7.30 The Board needs to balance these two potentially conflicting interests, but the difficulty of quantifying the level of protection means this must be a matter of judgement rather than actuarial calculation.

7.31 Triple S had an insurance reserve of $149.3 million at 30 June 2022, which is $76 million in excess of the reserves required for prudential and asset resilience reserves. This excess represents:

a. 760 additional insurance claims based on average death and TPD claim size of $100,000

b. 430 additional insurance claims based on average death and TPD sum insured of $178,000.

7.32 Advice was provided to the Board in February 2023 on the potential impact of catastrophic (disaster) events which would impact the insurance reserves. The advice considered a range of scenarios which may result in a significant number of South Australian Government employees claiming a death or TPD benefit from the scheme, based on the current environment (e.g. reflecting post-COVID conditions and therefore the ability for employees to work from home), as follows:

a. Event resulting in 900 Triple S members either dying or becoming permanently disabled ("100% die or permanently disabled" in table below);

b. Event resulting in 450 Triple S members (e.g. half the average State Administration building occupants) either dying or becoming permanently disabled, and the other 450 being temporarily incapacitated ("Average at-risk" in table below);

c. Terrorism event akin to the World Trade Centre ("WTC") attacks in 2001, which saw approximately 15% (2,410 out of approx. 17,000 occupants) killed, and assuming a similar number are either temporarily or permanently disabled ("Terrorism scenario" in table below);

d. An event as per the Terrorism scenario above, with an allowance for other Government employees (Triple S members) who aren't directly impacted to result in claims (e.g. mental health from experiencing a traumatic event)[7] ("Terrorism scenario with external impacts" in table below);

e. An event impacting Triple S members spread geographically, for example a medical incident (e.g. pandemic). A 'severe' pandemic, similar to the Spanish flu of 1918-19 may see a mortality rate of approximately 60 deaths per 10,000 in Australia[8] ("Severe pandemic" in table below).

7.33 The results of the potential insurance cost under each of these scenarios, based on sum insured amounts as at 30 June 2022, are shown below:

<table>
<tr><th>Scenario</th><th>100% die or permanently disabled</th><th>Average at-risk</th><th>Terrorism scenario</th><th>Terrorism scenario with external impacts</th><th>Severe pandemic</th></tr>
<tr><td>Death claims</td><td rowspan="2">900 claims
$153,900,000</td><td rowspan="2">450 claims
$76,950,000</td><td>135 claims
$23,085,000</td><td>135 claims
$23,085,000</td><td>798 claims[1]
$136,500,000</td></tr>
<tr><td>TPD claims</td><td>135 claims
$23,085,000</td><td>135 claims
$23,085,000</td><td>-</td></tr>
<tr><td>Income protection (paid for 2 years)</td><td>-</td><td>450 claims
$56,900,000</td><td>135 claims
$17,100,000</td><td>270 claims
$34,200,000</td><td>-</td></tr>
<tr><td>Total</td><td>$153,900,00</td><td>$133,850,000</td><td>$63,270,000</td><td>$80,370,000</td><td>$136,500,000</td></tr>
</table>

1. Based on 123,014 members with death and TPD at 30 June 2022.

7.34 For the purpose of estimating the potential impact of catastrophic events, the event itself is not of relevance, rather it is the impact in terms of the number and amount of insurance claims which is important. Therefore, whilst inputs have been taken from the WTC incident or a hypothetical medical incident, the calculations would also cover other extreme events similarly impacting a significant number of Government employees (Triple S members).

7.35 It is extremely difficult to set a contingency reserve, because by their nature, catastrophes are unexpected and can occur in many different ways, so any estimate can only be very broad and cannot take account of all possible scenarios. The above scenarios are for illustrative purposes only; they do not represent an exhaustive scope of potential catastrophic event outcomes, but are intended to provide some quantitative input into the Board's consideration of the required level of reserves for self-insured risks.

[7] Approximately 5-10% of people in areas surrounding the WTC reported symptoms of posttraumatic stress disorder or depression (source: Klitzman S, Freudenberg N. Implications of the World Trade Center Attack for the Public Health and Health Care Infrastructures. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447752/. Accessed 13 January 2023).

[8] Stitt, A. (2006). PANDEMIC: What every Actuary advising an Australian financial services organisation should know.

7.36 The COVID-19 pandemic is another example of a catastrophe which may face the scheme. In Australia, 15,672 people died from or with COVID-19; however, only 1,501 of those were within the insurable age for the scheme (i.e. up to age 70) and only 811 (of the total 15,672) were registered in South Australia[9]. Given COVID-19 primarily affects older people (90% of deaths in Australia were for people over the age of 70) and the rates of COVID death in South Australia were quite low, currently this condition is not expected to have a material impact on the scheme. It is too early to understand the longer-term effects of COVID-19.

7.37 We believe it would be reasonable for the Board to maintain a contingency reserve at a level of $65.2 million (2019: $65.0 million) as this provides a reasonable compromise between the interests of safeguarding Triple S, and the interests of providing low-cost insurance to members. The Board can maintain a contingency allowance at a different level if it believes it is appropriate to do so.

7.38 We note that reserves are invested in Super SA's Balanced fund. This not an issue in itself but may give rise to potential liquidity issues if a substantial amount of the reserve is required to be drawn down in a short period of time (e.g. if a catastrophic event was experienced).

Reserve allocation

7.39 The existing insurance reserve is $149.3 million at 30 June 2022. If we allow for the reserves above, then we have the following:

$ million	Death and TPD	Income protection	Total at 30/06/22	Total at 30/06/19
Insurance reserve[1]	**142.6**	**6.7**	**149.3**	**165.2**
Prudential reserves				
IBNR & IBNER[2]	24.1	19.7	43.8	30.5
Fluctuation reserve	5.0	5.0	10.0	10.0
Fixed Cover reserve	10.0	0.0	10.0	10.0
Total prudential reserves	**39.1**	**24.7**	**63.8**	**50.5**
Self-insurance reserves				
Asset resilience reserve	5.9	3.7	9.6	7.6
Contingency reserve	48.1	17.1	65.2	65.0
Total self-insurance reserves	**54.0**	**20.8**	**74.8**	**72.6**
Total prudential and self-insurance reserves	**93.1**	**45.5**	**138.6**	**123.1**
Expected 'free reserves'	**49.6**	**(38.8)**	**10.7**	**42.1**
Total annual subsidy[3]	**4.9**	**-**	**4.9**	**4.4**

[1] Insurance reserve has been split into death and TPD and income protection accounts by Super SA (audited).

[2] Includes allowance for higher than expected IBNR & IBNR at 50%.

[3] Estimated based on 30 June 2022 membership.

7.40 This shows that free reserves have reduced significantly since 2019. This is mainly due to transfers from the insurance reserve since 2019 totalling $34.7 million.

7.41 Based on the level of free reserves and the projected operating deficit after expenses (refer section 6), the annual subsidy may only be supported for up to 3 years if claims continue to be incurred based on the 2022 claim rate; the operating deficit based on the 2019-22 claim rate would support the annual subsidy for a longer period. Ongoing subsidisation will not mean the reserves would immediately be depleted, unless the other allowances were called upon (e.g. if there is a catastrophic event requiring the $65.2 million contingency reserve to be paid out).

[9] Australian Bureau of Statistics, *COVID-19 Mortality in Australia: Deaths registered until 31 January 2023*. Available at: https://www.abs.gov.au/articles/covid-19-mortality-australia-deaths-registered-until-31-january-2023. Accessed 5 March 2023.

7.42 The use of the insurance reserves is a matter for the Board. The Board may decide that the reserves should be used and/or allocated for other purposes or in other amounts to what has been proposed above.

8. Reliance and limitations

8.1 PricewaterhouseCoopers Securities Ltd (PwC) has prepared this report solely for the Department of Treasury and Finance of South Australia's (the Department's) use and benefit in accordance with and for the purpose set out in PwC's agreement with the Department dated 25 November. In doing so, PwC has acted exclusively for the Department and considered no-one else's interests.

8.2 Our work does not constitute an audit in accordance with Australian Auditing Standards or a review in accordance with Australian Auditing Standards applicable to review engagements and accordingly no assurance is provided in this report.

8.3 This report must be read in its entirety. Individual sections of this report could be misleading if considered in isolation from each other.

8.4 The advice contained in this report is based on the circumstances of the Department as a whole. It does not take into account the specific circumstances of any individual.

8.5 All reasonable care has been taken to provide member data that is accurate. However, we have relied on a range of external sources for data. In particular we have relied on membership, claims and financial data provided by the Department. We have carried high level reasonableness checks however we are unable to guarantee the accuracy of the data contained in this report.

8.6 This report is not intended to be read or used by anyone other than the Department. PwC accepts no responsibility, duty or liability:

a. to anyone other than the Department in connection with this report

b. to the Department for the consequences of using or relying on it for a purpose other than that referred to above.

8.7 PwC makes no representation concerning the appropriateness of this report for anyone other than the Department. If anyone other than the Department chooses to use or rely on it they do so at their own risk.

8.8 PwC is not obliged to provide any additional information or update anything in this report, even if matters come to our attention which are inconsistent with its contents.

8.9 This disclaimer applies:

a. to the maximum extent permitted by law and, without limitation, to liability arising in negligence or under statute; and

b. even if PwC consents to anyone other than the Department receiving or using this report.

Appendices

Appendix A Extract from Southern State Superannuation Act 2009

Section 17—Report as to cost and funding of insurance benefits

A.1 The Minister must obtain a report on the cost and funding of insurance benefits (including disability pensions) provided through the scheme within 12 months after 30 June 2010 and thereafter within 12 months after the end of each triennium following that date.

A.2 Each report must be prepared by an actuary (not being a member of the Board) appointed by the Minister and must report on:

c. the cost of insurance benefits

d. the extent to which premiums paid by members and held by the Board are sufficient to meet the scheme's anticipated insurance liabilities

at the time of the report and in the foreseeable future.

A.3 The Minister must, within 6 sitting days after receiving a report under this section, have copies of the report laid before both Houses of Parliament.

Section 22—Insurance benefits

A.4 The following is to be provided through the Triple S scheme on terms and conditions prescribed by regulation:

a. invalidity insurance, death insurance and income protection for members

b. death insurance for spouse members.

A.5 Invalidity or death insurance may also be provided through the scheme for other persons on terms and conditions prescribed by regulation.

A.6 Regulations made for the purposes of this section:

a. may provide

i) for different amounts of invalidity or death insurance depending on a person's age or occupation, or whether the person was employed on a full time, part time or casual basis, or on any other relevant factor; and

ii) for annual increases in the amount of invalidity or death insurance for the benefit of persons who wish to have annual increases in their insurance; and

iii) for the amount of premiums to be fixed by the Board; and

b. may make different provision according to the various classes of members, matters or circumstances to which they are expressed to apply; and

c. may provide that specified members or spouse members, or members or spouse members of a specified class, cannot apply for, or are not entitled to, invalidity insurance, death insurance or income protection.

Appendix B Insurance cover tables

B.1 The table below shows the value of 1 unit of standard death and TPD cover, for $1 per week premium.

Age last birthday	One unit cover ($)	Age last birthday	One unit cover ($)	Age last birthday	One unit cover ($)
Up to 34	75,000	**46**	39,000	**58**	11,000
35	72,000	**47**	36,000	**59**	10,000
36	69,000	**48**	33,000	**60**	9,000
37	66,000	**49**	30,000	**61**	8,000
38	63,000	**50**	27,000	**62**	7,000
39	60,000	**51**	24,000	**63**	6,000
40	57,000	**52**	22,000	**64**	5,000
41	54,000	**53**	20,000	**65**	5,000
42	51,000	**54**	18,000	**66**	5,000
43	48,000	**55**	16,000	**67**	5,000
44	45,000	**56**	14,000	**68**	5,000
45	42,000	**57**	12,500	**69**	5,000

B.2 The table below shows the premium for 1 unit of fixed benefit death and TPD cover (premium per $10,000 unit).

Age last birthday	Premium per week ($)	Age last birthday	Premium per week ($)	Age last birthday	Premium per week ($)
Up to 34	0.13	**46**	0.26	**58**	0.91
35	0.14	**47**	0.28	**59**	1.00
36	0.14	**48**	0.30	**60**	1.11
37	0.15	**49**	0.33	**61**	1.25
38	0.16	**50**	0.37	**62**	1.43
39	0.17	**51**	0.42	**63**	1.67
40	0.18	**52**	0.45	**64**	2.00
41	0.19	**53**	0.50	**65**	2.00
42	0.20	**54**	0.56	**66**	2.00
43	0.21	**55**	0.63	**67**	2.00
44	0.22	**56**	0.71	**68**	2.00
45	0.24	**57**	0.80	**69**	2.00

B.3 The table below shows the value of 1 unit and corresponding premium for legacy fixed benefit death and TPD cover (closed to new applications since November 2014).

Age last birthday	One unit cover ($)	Premium per week ($)	Age last birthday	One unit cover ($)	Premium per week ($)
20 and under	75,000	0.80	**43**	75,000	2.90
21	75,000	0.85	**44**	75,000	3.10
22	75,000	0.85	**45**	75,000	3.30
23	75,000	0.90	**46**	75,000	3.50
24	75,000	0.95	**47**	75,000	3.70
25	75,000	1.00	**48**	75,000	3.90
26	75,000	1.05	**49**	75,000	4.10
27	75,000	1.10	**50**	75,000	4.40
28	75,000	1.15	**51**	75,000	4.70
29	75,000	1.20	**52**	75,000	5.10
30	75,000	1.25	**53**	75,000	5.50
31	75,000	1.30	**54**	75,000	6.00
32	75,000	1.40	**55**	75,000	6.50
33	75,000	1.50	**56**	75,000	7.10
34	75,000	1.60	**57**	75,000	7.70
35	75,000	1.70	**58**	75,000	8.40
36	75,000	1.80	**59**	75,000	9.20
37	75,000	2.00	**60**	75,000	10.10
38	75,000	2.10	**61**	75,000	11.00
39	75,000	2.30	**62**	75,000	12.00
40	75,000	2.40	**63**	75,000	13.00
41	75,000	2.60	**64**	75,000	14.10
42	75,000	2.70	**65+**	Not offered	Not offered

B.4 The table below shows the current premium rates (as a percentage of salary) for income protection cover.

Age last birthday	30 Day Waiting	90 Day Waiting	Age last birthday	30 Day Waiting	90 Day Waiting	Age last birthday	30 Day Waiting	90 Day Waiting
15	0.16%	0.09%	**32**	0.18%	0.10%	**49**	0.46%	0.25%
16	0.16%	0.09%	**33**	0.18%	0.10%	**50**	0.49%	0.27%
17	0.16%	0.09%	**34**	0.19%	0.10%	**51**	0.52%	0.29%
18	0.16%	0.09%	**35**	0.20%	0.11%	**52**	0.56%	0.31%
19	0.16%	0.09%	**36**	0.21%	0.11%	**53**	0.63%	0.35%
20	0.16%	0.09%	**37**	0.21%	0.12%	**54**	0.70%	0.39%
21	0.16%	0.09%	**38**	0.23%	0.13%	**55**	0.78%	0.43%
22	0.16%	0.09%	**39**	0.24%	0.13%	**56**	0.85%	0.47%
23	0.16%	0.09%	**40**	0.26%	0.14%	**57**	0.93%	0.51%
24	0.16%	0.09%	**41**	0.27%	0.15%	**58**	0.97%	0.54%
25	0.16%	0.09%	**42**	0.28%	0.16%	**59**	1.02%	0.56%
26	0.16%	0.09%	**43**	0.31%	0.17%	**60**	1.07%	0.59%
27	0.17%	0.09%	**44**	0.33%	0.18%	**61**	1.11%	0.61%
28	0.17%	0.09%	**45**	0.35%	0.19%	**62**	1.16%	0.64%
29	0.17%	0.09%	**46**	0.37%	0.20%	**63**	1.02%	0.56%
30	0.17%	0.09%	**47**	0.39%	0.22%	**64**	0.44%	0.24%
31	0.17%	0.10%	**48**	0.43%	0.23%	**65+**	Not offered	

Appendix C IBNR calculations for death and TPD insurance

C.1 The cumulative proportion of TPD claims paid are shown below, with comparison to 2016-19 levels.

Cumulative	0-3 mths	3-6 mths	6-9 mths	9-12 mths	12-18 mths	18-24 mths	24-36 mths	36-48 mths
2016-19 % of claims paid Death only	23%	57%	74%	87%	96%	98%	100%	100%
2016-19 % of claims paid TPD only	58%	66%	71%	75%	81%	90%	97%	100%
2019-22 % of claims paid Death only	27%	66%	81%	89%	94%	96%	100%	100%
2019-22 % of claims paid TPD only	80%	83%	86%	88%	91%	99%	100%	100%

C.2 The effect of the IBNR on the actual number of claims for Death and TPD Insurance for 2019 to 2022 is shown below.

Claims known at 2022 ($'000)	2019	2020	2021	2022	Total
Claims in 2022 data **(unadjusted for IBNR)**	192	160	135	88	**575**
Potential claims[1] **(% of claims in 2022 data)**	-	-	43 (32%)	76 (86%)	**119**
IBNR claims **(% of claims with potential)**	-	-	38 (21%)	75 (46%)	**113**
Number of expected claims **(% of claims with potential and IBNR)**	**192**	**160**	**216 (60%)**	**239 (172%)**	**807**

[1] Potential claims are claims arising from pending and declined claims at 30 June 2022, assuming 95% of all claims will be approved.

C.3 We have compared claims rates against premiums including a subsidised proportion of the death & TPD sum insured covered by the subsidy of $0.25 per standard unit per week on a member's first 3 units (6 units for police and ambulance members). The table below shows the breakdown of subsidised sum insured by 5-year age bands:

Age group	Total Sum Insured ($m)	Default (Subsidised) Sum Insured ($m)	Proportion Default (Subsidised)	Average Premium per unit per week ($)
15 - 19	632	631	100%	0.75
20 - 24	2,498	2,480	99%	0.75
25 - 29	3,427	3,305	96%	0.76
30 - 34	3,795	3,390	89%	0.78
35 - 39	3,490	2,777	80%	0.80
40 - 44	2,776	1,899	68%	0.83
44 - 49	2,044	1,253	61%	0.85
50 - 54	1,292	685	53%	0.87
55 - 59	735	333	45%	0.89
60 - 64	305	134	44%	0.89
65 - 69	38	27	72%	0.82
Total	**21,033**	**16,915**	80%	0.80

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