SAS Trustee Corporation

24 October 2018

Triennial valuation as at 30 June 2018

- State Authorities Superannuation Scheme
- State Superannuation Scheme
- Police Superannuation Scheme
- State Authorities Non-Contributory Superannuation Scheme

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Contents

Scope and background

The report meets SAS Trustee Corporation's legislative and compliance requirements as at 30 June 2018

Area covered	Comments
Purpose and scope of report	• A triennial investigation and valuation of the State Authorities Superannuation Scheme (**SASS**), the State Superannuation Scheme (**SSS**), the Police Superannuation Scheme (**PSS**), and the State Authorities Non-Contributory Superannuation Scheme (**SANCS**), collectively known as the **NSW Pooled Fund**. • Prepared at request of SAS Trustee Corporation (**STC**) to report on the operation and state of funding of the NSW Pooled Fund and its constituent Schemes. • This report is as at 30 June 2018. • The previous report as at 30 June 2015, dated December 2015, was prepared by Richard Boyfield and Christopher Brown of Mercer Consulting (Australia) Pty Ltd.
Background and governing legislation	• State legislation governs each Scheme and determines the benefits of each Scheme. • The Schemes are closed to new entrants. • We are not aware of any legislative changes since 30 June 2015 which impact the Pooled Fund benefits or liabilities. • From 1 July 2017, the government removed the anti-detriment provision from the ITAA. This previously enabled superannuation funds to claim a tax deduction on a top-up component to lump sum death benefits, where the top-up represents a refund of contribution tax payments. Our valuation projections assume that the Fund will continue its current practice paying these top-ups for certain SASS, PSS and SANCS lump sum death benefits. However we note that the Fund legislation relating to this is currently under review.
Taxation and compliance	• The Schemes are exempt public sector superannuation schemes. • STC complies with the Commonwealth retirement incomes policy where possible, in accordance with a Heads of Government Agreement signed by the NSW State Government. • The Schemes are treated as complying for concessional taxation and superannuation guarantee purposes.
Statement of Compliance	• Our advice to you constitutes Prescribed Actuarial Advice as defined in the Code of Professional Conduct (the Code) issued by the Institute of Actuaries of Australia and our advice complies with the Code in this respect. • The figures in this report are calculated in accordance with the Australian Accounting Standards AASB1056 – Superannuation Entities, which replaced AAS25 from 1 July 2016. • The report has been prepared in accordance with Professional Standards 400, 404 and 410 issued by the Institute of Actuaries of Australia.
Date of issue	• 24 October 2018

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Executive Summary

Funding position and recommendations

The asset cover for the employer past service liabilities has improved from 65% at 30 June 2015, to 68% at 30 June 2018.

	2018				***2015***		**Sector recommendations (see page 26 for further details)**
Sector	**Employer Past Service Liabilities ($m) A**	**Employer Reserve [1] ($m) B**	**Employer Unfunded Liabilities ($m) B-A**	**Asset coverage B/A**	***Employer Unfunded Liabilities ($m)***	***Asset coverage***	
General Government	42,587.0	29,607.6	(12,979.3)	70%	*(14,119.2)*	*66%*	Recommend maintain current Crown funding plan which is projected to fund deficit by 2030 (see next page), but redistribute funding between Schemes[3]. Non-Crown individual employer plans have been reviewed and documented separately.
Universities	3,539.8	544.3	(2,995.5)	15%	*(2,908.3)*	*22%*	No recommendation required.
PTEs/Other[2]	3,411.1	3,412.8	1.7	100%	*(98.6)*	*97%*	Individual employer plans to be reviewed and documented separately.
Total	**49,537.8**	**33,564.7**	**(15,973.1)**	**68%**	*(17,126.1)*	*65%*	

- The asset cover for the employer past service liabilities has improved from 65% at 30 June 2015, to 68% at 30 June 2018. This represents an improvement from a $17.1bn deficit to a $16.0bn deficit.
- The main reason for the improvement has been the payment of $5.4bn employer contributions which is in excess of the cost of new benefits accrued over the period and has improved the funding by $3.7bn. Lower than expected pension increases also improved the funding by $0.8bn. This has been partially offset by a $3.4bn deterioration in the employer unfunded liabilities as a result of interest at a rate of 6.8% p.a. (previous Triennial investment return assumption) being added to the 2015 unfunded liabilities to bring them to today's dollars.
- The 2018 employer past service liability results by employer sectors are as follows:
    - General Government Sector - 70% asset coverage / $13.0m deficit. The NSW Government is committed to fully funding all General Government Sector liabilities by 2030 in accordance with the Fiscal Responsibility Act 2012. The Crown funding plan and projections are shown on the next page.
    - Universities Sector – 15% asset coverage / $3.0bn deficit. The funding for this sector is in part through pay-as-you-go payments backed by the Commonwealth and NSW Governments. The lower asset coverage reflects this funding mechanism.
    - Public Trading Enterprises, Public Financial Corporations and Other employers Sector (PTEs/Other) – 100% asset coverage.

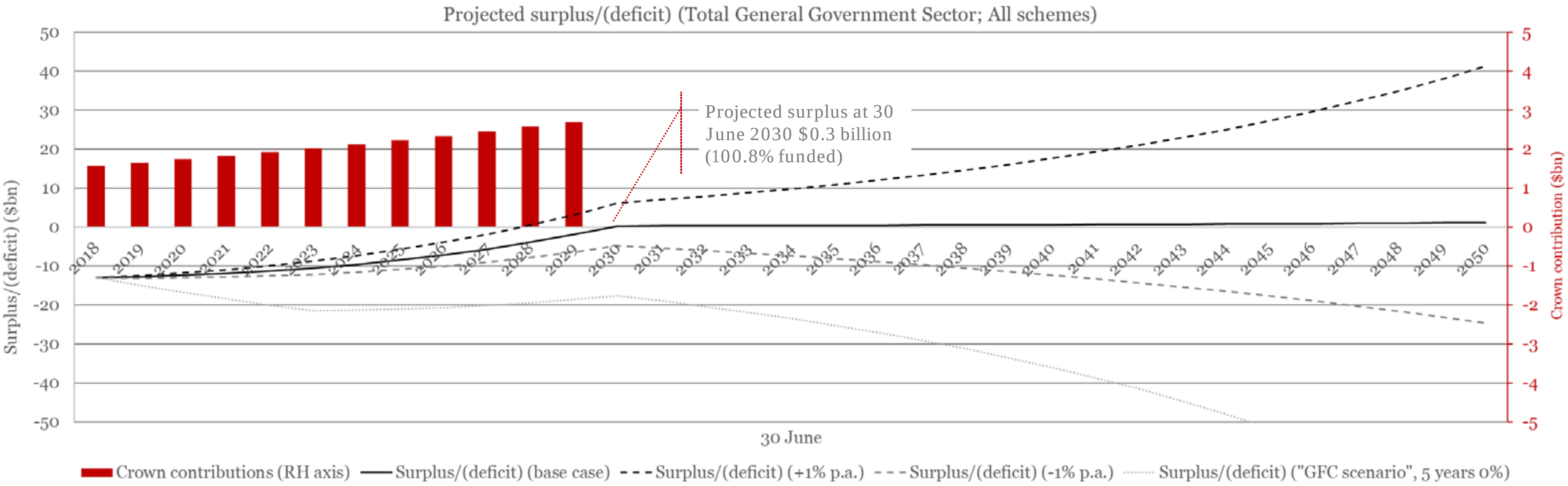
[1] The assets are consistent with the audited net assets in the financial statements but exclude the Employer Sponsor Receivable for PSS. See page 38 for details.

[2] Public Trading Enterprises, Public Financial Corporations and Other employers Sector (PTEs/Other)

[3] Results commentary for the four Schemes in the NSW Pooled Fund are set out in the body of the report.

General Government Sector funding projection results

The General Government Sector employer funding position is projected to improve from the current deficit of $13.0bn, to a surplus of $0.3bn by 2030. This projected scenario would achieve the NSW Government commitment of fully funding all General Government Sector liabilities by 2030, however there is significant variability in this projected outcome.



Projected surplus/(deficit) (Total General Government Sector; All schemes)

Projected surplus at 30 June 2030 $0.3 billion (100.8% funded)

- The projected level of Crown Funding Plan contributions for 2018/19 through to 2029/30 under the current contribution plan are:

	Financial year											
$ billion	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**
Projected Crown contributions	1.58	1.66	1.74	1.83	1.92	2.01	2.11	2.22	2.33	2.45	2.57	2.70

- The projected surplus at 2030 is $0.3bn using the central projection (based on the triennial assumptions), however results vary in the other projections shown.
- We have also shown the following additional scenarios which illustrates that there is significant variability in the potential 2030 funding outcome:
  - Projected investment earnings increased and decreased by 1% p.a.
  - A “Global Financial Crisis” (GFC) type downturn scenario in which investment earnings are assumed to be 0% p.a. for 5 years then revert to the valuation assumption.
- The scenarios illustrated in the projections are not intended to indicate upper or lower bounds of possible outcomes.

Risks and sensitivities

The key risks faced by the NSW Pooled Fund are investment risk and pension increase risk.

Level of risk	Comments
Investment risk	• A key risk faced by NSW Pooled Fund • Moving to a more cautious investment strategy could reduce volatility to help mitigate this • However this would also result in lower expected investment returns and increased employer liabilities and costs
Pension increase risk	• RBA has adopted inflation target of 2-3% • Monetary policy used to keep within target • Strong pensioner presence in NSW Pooled Fund (79% of liability)
Salary increase risk	• Employer has control over this • Historically been less volatile than investments • Contributors make up small (20%) of liability so salary increase risk is relatively low
Longevity risk	• Future life expectancies continue to increase • Allowance has been made in assumptions • Strong pensioner presence in NSW Pooled Fund (currently 79% of liability. This will also impact contributors who are eligible for pension benefits in the future in the Fund.)
Catastrophe risk	• Death and TPD self-insured • Potential for catastrophic event to lead to multiple claims • Offset by pensioners (who could also be impacted)
Legislative risk	• Continual changes, such as increasing Superannuation Guarantee and APRA prudential standards could increase costs • However, good governance may reduce risk

Sensitivity

Increase in employer past service liabilities of **$ 49.5 billion**

Investment risk	1% p.a. decrease in investment returns	$4.8bn 9.7%
Pension increase risk	1% p.a. increase in inflation	$4.5bn 9.2%
Salary increase risk	1% p.a. increase in salary increase	$0.5bn 1.0%
Longevity risk	Higher mortality improvements	$0.3bn 0.6%

- Details of key risks faced by the NSW Pooled Fund are shown above. Additionally we have shown sensitivity results which highlight the impact of a possible change in assumptions which relate to these risks. Note that these sensitivities reflect a possible alternative assumption rather than the size of the risk itself.

Funding position

1

NSW Pooled Fund funding position by Scheme (1 of 2)

The total past service liabilities are $59.0bn. This is made up of $49.5bn employer past service liabilities, $6.4bn contributor reserves and $3.1bn deferred reserves.

Scheme	Employer Past Service Liabilities (Accrued Benefits)				Contributor Reserve ($m)	Deferred Reserve ($m)	Total ($m)
	Contributors ($m)	Deferred ($m)	Pensioners ($m)	Total ($m)			
SASS	5,980.0	-	1,395.7	7,375.8	[Accum]4,784.3	[Accum]2,533.0	14,693.1
SSS	1,418.2	249.1	31,724.5	33,391.8	[DB]1,163.8	-	34,555.6
PSS	933.8	14.4	6,161.9	7,110.1	[DB]335.1	-	7,445.2
SANCS	1,660.1	-	-	1,660.1	[Accum]94.2[1]	[Accum]539.1	2,293.4
Total Past Service Liabilities (A)	9,992.2	263.5	39,282.1	**49,537.8**	6,377.4	3,072.1	**58,987.3**
Total Assets (B) [2]				**33,564.7**	6,377.4	3,072.1	**43,014.2**
Unfunded liabilities (B-A)				**(15,973.1)**	-	-	**(15,973.1)**
Asset coverage (B/A)				**68%**	100%	100%	**73%**

- The total assets are $43.0bn, which is 73% of the total past service liabilities of $59.0bn.
- The current deficit on the employer past service liabilities is $16.0bn.
- The table above shows the split of these liabilities between the schemes.
- A comparison of the employer past service liabilities with the previous valuation is shown on the next slide.

[Accum] SASS and SANCS contributor and deferred reserves are accumulation-style benefits. SASS contributor and deferred reserves are subject to member investment choice, whereas the SANCS contributor and deferred reserves are not subject to member investment choice.

[DB] SSS and PSS contributor reserves represent the member-financed portion of the defined benefit liabilities. These reserves are not subject to member investment choice.

[1] Includes SANCS Other Accounts such as government co-contributions, as well as Additional Employer Contributions. Further details are shown on page 38 and Appendix B.

[2] The assets above are consistent with the audited net assets in the financial statements but excludes the SASS Additional Benefits Reserve of $7.4m which is a self-insurance arrangement to cover the member portion of the SASS additional benefits and excludes allowance for the Employer Sponsor Receivable for PSS. Further details and a reconciliation are shown on page 38.

NSW Pooled Fund funding position by Scheme (2 of 2)

The asset cover for the employer past service liabilities has improved from 65% at 30 June 2015, to 68% at 30 June 2018.

	2018				2015			
Scheme	**Employer Past Service Liabilities ($m) A**	**Employer Reserve ($m) B**	**Employer Unfunded Liabilities ($m) B-A**	**Asset coverage B/A**	***Employer Past Service Liabilities ($m) A***	***Employer Reserve ($m) B***	***Employer Unfunded Liabilities ($m) B-A***	***Asset coverage B/A***
SASS	7,375.8	5,625.0	(1,750.8)	76%	*7,562.9*	*5,691.9*	*(1,871.0)*	*75%*
SSS	33,391.8	22,062.7	(11,329.1)	66%	*32,386.1*	*20,353.4*	*(12,032.7)*	*63%*
PSS	7,110.1	4,565.3	(2,544.8)	64%	*6,950.6*	*4,231.4*	*(2,719.2)*	*61%*
SANCS	1,660.1	1,311.7	(348.4)	79%	*1,990.9*	*1,487.7*	*(503.2)*	*75%*
Total	**49,537.8**	**33,564.7**	**(15,973.1)**	**68%**	*48,890.5*	*31,764.4*	*(17,126.1)*	*65%*

- The asset cover for the employer past service liabilities has improved from 65% at 30 June 2015, to 68% at 30 June 2018. This represents an improvement from a $17.1bn deficit to a $16.0bn deficit.
- The main reason for the improvement has been the payment of $5.4bn employer contributions which is in excess of the cost of new benefits accrued over the period and has improved the funding by $3.7bn. Lower than expected pension increases also improved the funding by $0.8bn. This has been partially offset by a $3.4bn deterioration in the employer unfunded liabilities as a result of interest at a rate of 6.8% p.a. (previous Triennial investment return assumption) being added to the 2015 unfunded liabilities to bring them to today's dollars.
- Further details of the reasons for the movements are shown later in this section.
- The asset coverage by Scheme ranges between 64% (for PSS) and 79% (for SANCS).

NSW Pooled Fund funding position by Sector (1 of 2)

The past service liability have been repeated below by sector.

Sector	Employer Past Service Liabilities (Accrued Benefits)				Contributor Reserve ($m)	Deferred Reserve[2] ($m)	Total ($m)
	Contributors ($m)	Deferred ($m)	Pensioners ($m)	Total ($m)			
General Government	8,236.2	207.8	34,143.0	42,587.0	5,267.6	3,072.1	50,926.7
Universities	323.9	24.5	3,191.4	3,539.8	198.3	-	3,738.0
PTEs/Other[1]	1,432.1	31.3	1,947.7	3,411.1	911.5	-	4,322.5
Total Past Service Liabilities (A)	9,992.2	263.5	39,282.1	**49,537.8**	6,377.4	3,072.1	**58,987.3**
Total Assets (B)				**33,564.7**	6,377.4	3,072.1	**43,014.2**
Unfunded liabilities (B-A)				**(15,973.1)**	-	-	**(15,973.1)**
Asset coverage (B/A)				**68%**	100%	100%	**73%**

- The employers participating in the Pooled Fund are split into the following sectors:
  - General Government Sector – this Sector can be further split between Crown and Non-Crown Government entities
  - Universities
  - Public Trading Enterprises, Public Financial Corporations and Other employers (PTEs/Other)
- The General Government Sector accounts for $42.6bn in employer past services liabilities which is around 86% of the total. Universities and PTEs/Other account for the remaining 14%.
- Detailed results by both Scheme and Sector are shown in Appendix E.

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[1] Public Trading Enterprises, Public Financial Corporations and Other employers Sector (PTEs/Other)

[2] All deferred reserves have been included under General Government, consistent with treatment in 2015 Triennial Review

NSW Pooled Fund funding position by Sector (2 of 2)

A comparison of the movements in employer funding position has been repeated by Sector below.

	2018				2015			
Sector	**Employer Past Service Liabilities ($m) A**	**Employer Reserve ($m)[1] B**	**Employer Unfunded Liabilities ($m) B-A**	**Asset coverage B/A**	***Employer Past Service Liabilities ($m) A***	***Employer Reserve ($m) B***	***Employer Unfunded Liabilities ($m) B-A***	***Asset coverage B/A***
General Government	42,587.0	29,607.6	(12,979.3)	70%	*41,746.7*	*27,627.4*	*(14,119.3)*	*66%*
Universities	3,539.8	544.3	(2,995.5)	15%	*3,736.4*	*828.2*	*(2,908.3)*	*22%*
PTEs/Other	3,411.1	3,412.8	1.7	100%	*3,407.4*	*3,308.8*	*(98.6)*	*97%*
Total	**49,537.8**	**33,564.7**	**(15,973.1)**	**68%**	*48,890.5*	*31,764.4*	*(17,126.1)*	*65%*

- The asset coverage varies significantly between Sectors:
  - The General Government Sector has an coverage of 70%. The Crown has committed to contributions in order to bring the General Government Sector to fully funded by 30 June 2030. Additionally Non-Crown Government Sector contributions are made at an agreed level.
  - The Universities Sector has an asset coverage of 15%. Funding for this sector is in part through pay-as-you-go payments backed by the Commonwealth and NSW governments, and the lower asset coverage reflects this.
  - Public Trading Enterprises, Public Financial Corporations and Other employers (PTEs/Other) as a sector are fully funded overall with an asset coverage of 100%.
- Further details of the funding arrangements are shown in Section 4.

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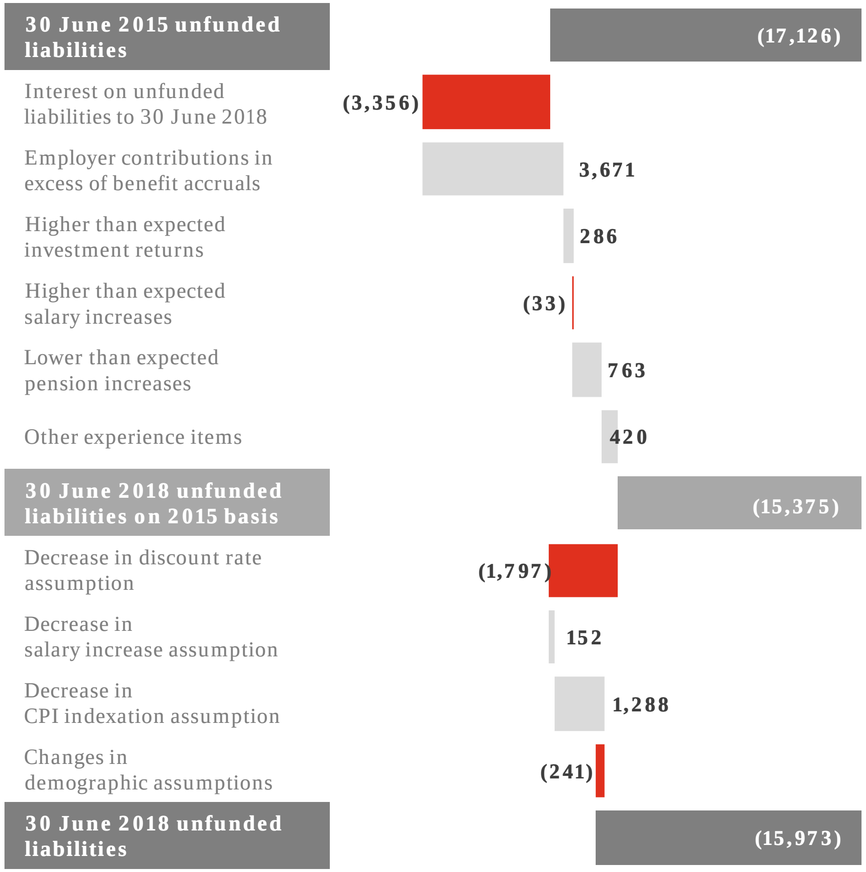
[1] The asset splits by sector have been estimated by taking the total assets from the financial statements and apportioning these in line with the asset splits taken from provisional asset data. As with the previous presentation, the assets and liabilities above exclude the SASS Additional Benefits Reserve of $7.4m which is a self-insurance arrangement to cover the member portion of the SASS additional benefits and excludes allowance for Employer Sponsor Receivable for PSS.

NSW Pooled Fund unfunded liabilities reconciliation (1 of 2)

The employer funding position has improved since 2015 by $1.1bn from a $17.1bn deficit to a $16.0bn deficit.

Movement in Employer Unfunded Liabilities ($m)



Main reasons for movements

- The first section (moving from a deficit of $17.1bn to a deficit of $15.4bn) shows the movement due to experience between June 2015 and June 2018. Key items:
  - Interest at a rate of 6.8% p.a. (previous Triennial investment return assumption) added to the 2015 unfunded liabilities to bring them to today's dollars (impact -$3.4bn).
  - The employer contributions of $5.4bn were in excess of the cost of the new benefits accrued over the period (impact +$3.7bn).
  - Asset returns 0.3% p.a. higher than expected: 7.1% p.a. vs 6.8% p.a. expected[1] (impact +$0.3bn).
  - Higher than expected salary increase: 3.04% p.a. vs 3.0% p.a. expected[2] (impact -$0.03bn).
  - Lower than expected pension increases: 1.8% p.a. vs 2.5% p.a. expected (impact +$0.8bn).
  - Other experience, see next page (impact +$0.4bn)
- The second section (moving from a deficit of $15.4bn to a deficit of $16.0bn) shows the impact of the changes in actuarial assumptions from the 2015 to 2018 basis. Key items:
  - Discount rate used to value future cashflows decreased from 7.8% p.a. to 7.4% p.a.[3] (impact -$1.8bn).
  - Salary increase assumption decreased from 3.5% p.a. to 3.2% p.a.[4] (impact +$0.2bn).
  - Rate of CPI increase assumption decreased from 2.5% p.a. to 2.2% p.a. (impact +$1.3bn).
  - Changes in demographic assumptions, see next page (impact -$0.2bn).

[1] Asset returns based on Trustee Selection Strategy net of tax and expenses (but before any increase due to current pension income tax exemption).

[2] Actual salary increases: these are based on the average increase each year for people who remained contributors in the Scheme - this differs from the increase in the average salaries shown in Section 5. Expected salary increases: for simplicity we have excluded the impact of the promotional salary scale when estimating the salary increase experience item above. This promotional scale only has a minor effect as around 90% of contributors are now above the age range that this promotional scale is applied for.

[3] Discount rate quoted is for pensioners. Non-pensioner discount rates also decreased by 0.4% p.a. from 6.8% p.a. to 6.4% p.a.

[4] Long-term salary increase assumption quoted which is effective after 30 June 2019. Short-term salary increase assumption also decreased by 0.3% p.a. from 3.0% p.a. to 2.7% p.a.

NSW Pooled Fund unfunded liabilities reconciliation (2 of 2)

These table below shows the movements in employer unfunded liabilities broken down by Scheme.

Movement in Employer Unfunded Liabilities, by Scheme ($m)

	SASS	SSS	PSS	SANCS	Total
30 June 2015 unfunded liabilities	**(1,871)**	**(12,033)**	**(2,719)**	**(503)**	**(17,126)**
Interest on unfunded liabilities to 30 June 2018	(336)	(2,388)	(545)	(87)	**(3,356)**
Employer contributions in excess of benefit accruals	693	2,290	468	220	**3,671**
Higher than expected investment returns	47	188	39	12	**286**
Higher than expected salary increases [1]	**1**	**(22)**	**(10)**	**(2)**	**(33)**
Lower than expected pension increases	23	615	125	-	**763**
Other experience items	**(163)**	**365**	**183**	**35**	**420**
30 June 2018 unfunded liabilities on 2015 basis	**(1,606)**	**(10,985)**	**(2,459)**	**(325)**	**(15,375)**
Decrease in investment return / discount rate assumption	(199)	(1,232)	(332)	(34)	**(1,797)**
Decrease in salary increase assumption	100	14	13	26	**152**
Decrease in CPI indexation assumption	57	973	257	-	**1,288**
Changes in demographic assumptions	**(103)**	**(99)**	**(24)**	**(15)**	**(241)**
30 June 2018 unfunded liabilities	**(1,751)**	**(11,329)**	**(2,545)**	**(348)**	**(15,973)**

[1] Salary increases were higher than expected overall and for SSS, PSS and SANCS; but marginally lower than expected for SASS.

[2] See notes on salary increases on previous page.

Scheme level commentary on movements

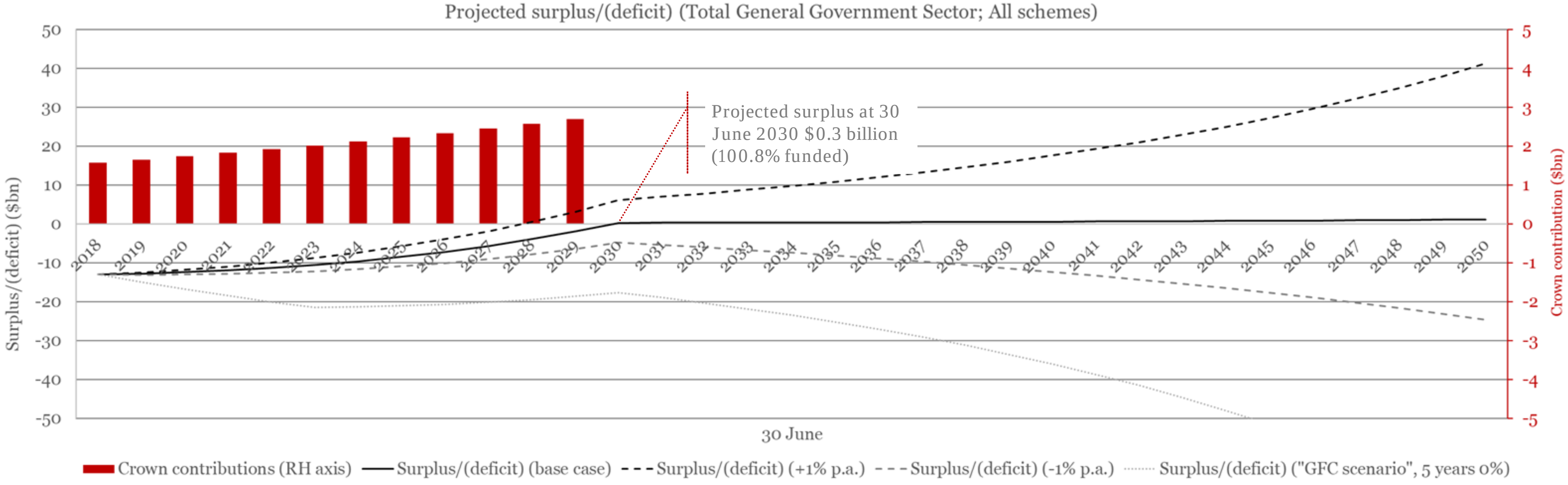
- The main explanations on the previous page apply across all schemes. We discuss below the items shown in red, for which we have further Scheme level commentary.
- The salary increase experience by Scheme over the 3 years was as follows: SASS 3.0% p.a. actual; SSS 3.2% p.a. actual; PSS: 3.3% p.a. actual; and Total 3.04% p.a. actual (all compared to 3.0% p.a. expected)[2].
- The main items reflected in the Other experience items are:
  - SASS – higher than expected retirements and take up of the pension and preservation options, together with lower than expected mortality experience over the period, resulting in increased liabilities.
  - SSS and PSS – higher than expected pension mortality experience over the period resulting in decreased liabilities.
- The main items reflected in the Changes in demographic assumptions are:
  - SASS – changes in assumed rates of retirement and assumed take up of pension and preservation options, in line with recent experience. This change also impacts the assumed timing of SANCS payments for SASS members.
  - All Schemes – small impact of continuing to apply the method of allowing for short-term pensioner mortality improvement factors for 6 years following the valuation (i.e. these are now applied until 2024 whereas for the 2015 valuation they were only applied until 2021). Long-term pensioner mortality improvement factors are applied after this. See Section 7 for more details on mortality assumptions. The impact of this is mainly seen for SSS and PSS since there are limited pension options in SASS and no pension options in SANCS.

Projections

2

General Government Sector funding projection results

The General Government Sector employer funding position is projected to improve from the current deficit of $13.0bn, to a surplus of $0.3bn by 2030. This projected scenario would achieve the NSW Government commitment of fully funding all General Government Sector liabilities by 2030, however there is significant variability in this projected outcome.



- The projected level of Crown Funding Plan contributions for 2018/19 through to 2029/30 under the current contribution plan are:

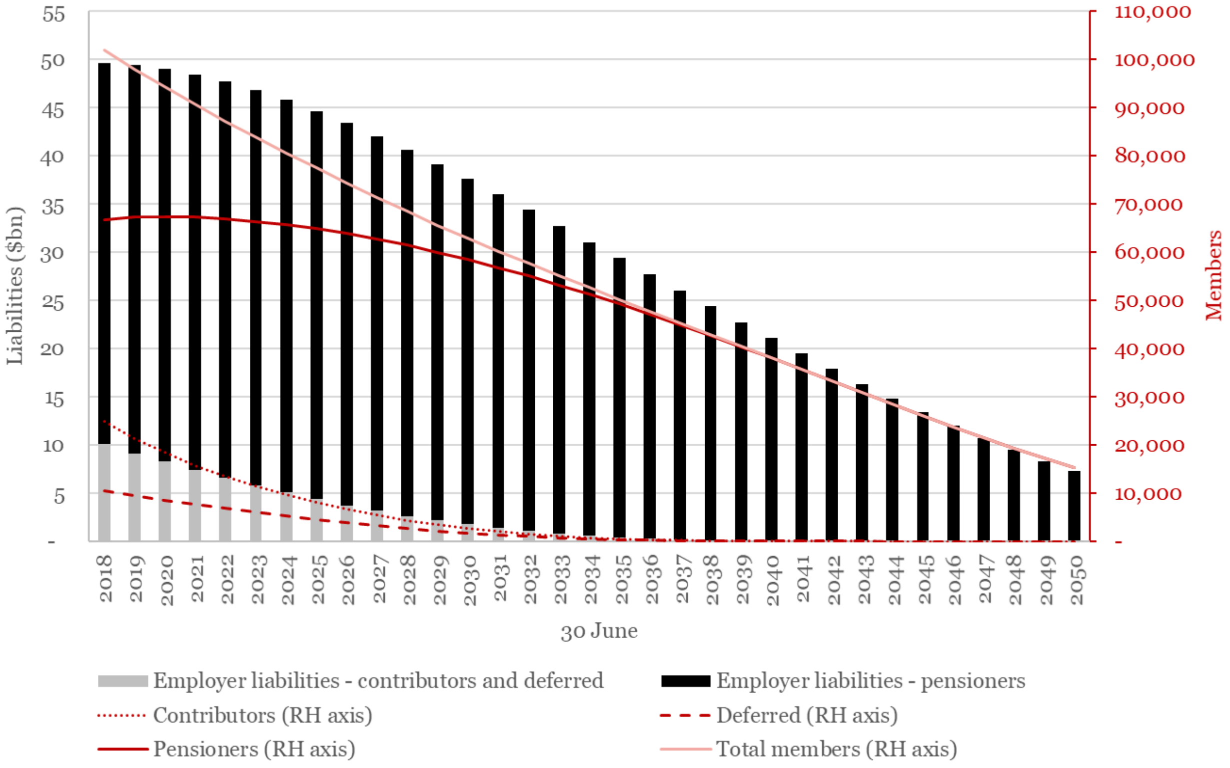
	Financial year											
$ billion	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**
Projected Crown contributions	1.58	1.66	1.74	1.83	1.92	2.01	2.11	2.22	2.33	2.45	2.57	2.70

- The projected surplus at 2030 is $0.3 billion using the central projection (based on the triennial assumptions), however results vary in the other projections shown.
- We have also shown the following additional scenarios which illustrates that there is significant variability in the potential 2030 funding outcome:
  - Projected investment earnings increased and decreased by 1% p.a.
  - A "Global Financial Crisis" (GFC) type downturn scenario in which investment earnings are assumed to be 0% p.a. for 5 years then revert to the valuation assumption.
- The scenarios illustrated in the projections are not intended to indicate upper or lower bounds of possible outcomes.

Total Pooled Fund projections

Membership projected to be approximately 63,000 by 2030, of which 93% would be pensioners.

Projected liabilities[1] and membership[2]



Long term outlook

- The membership is predominantly pensioners reflecting the closed nature of the Fund.
- Projected pensioner members and liabilities as a proportion of the total are as follows:

30 June	Members	Liabilities
2018	65%	79%
2021 (in 3 years)	74%	85%
2030	93%	95%

- We note that long term projections are sensitive to assumptions and actual member movements.
- The membership projection is broadly in line with that in the 2015 actuarial investigation.

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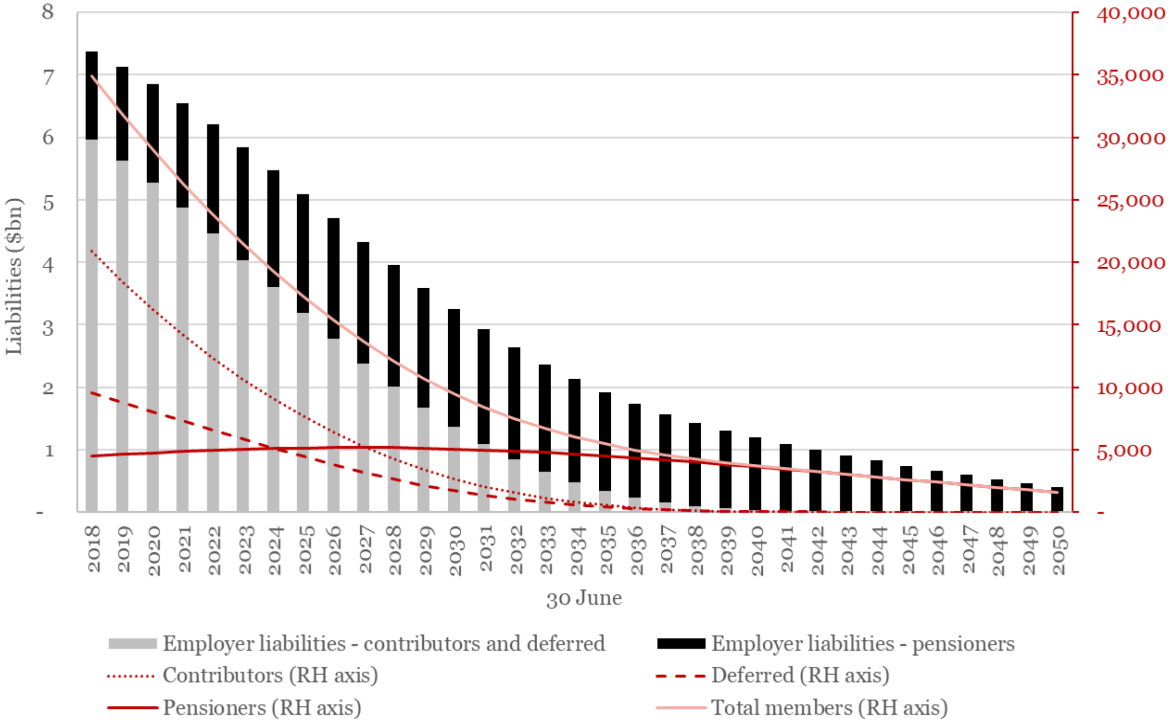
[1] Projected liabilities shown in future dollars.

[2] Membership as at 30 June 2018 excludes fully commuted SSS pensioners. Their spouses are included from the point that they are projected to receive a pension payment in the future.

SASS projections

Membership projected to be approximately 9,400 by 2030, of which 54% would be pensioners.

Projected liabilities[1] and membership



Long term outlook

- Projected pensioner members and liabilities as a proportion of the total are as follows:

30 June	Members	Liabilities
2018	13%	19%
2021 (in 3 years)	21%	25%
2030	54%	58%

- As a large proportion of SASS members are not eligible for a pension benefit, membership is projected to decrease faster than the SSS and PSS schemes which provide pension benefits.
- By 2030, the membership and employer liabilities are projected to have reduced by 73% and 56% respectively.

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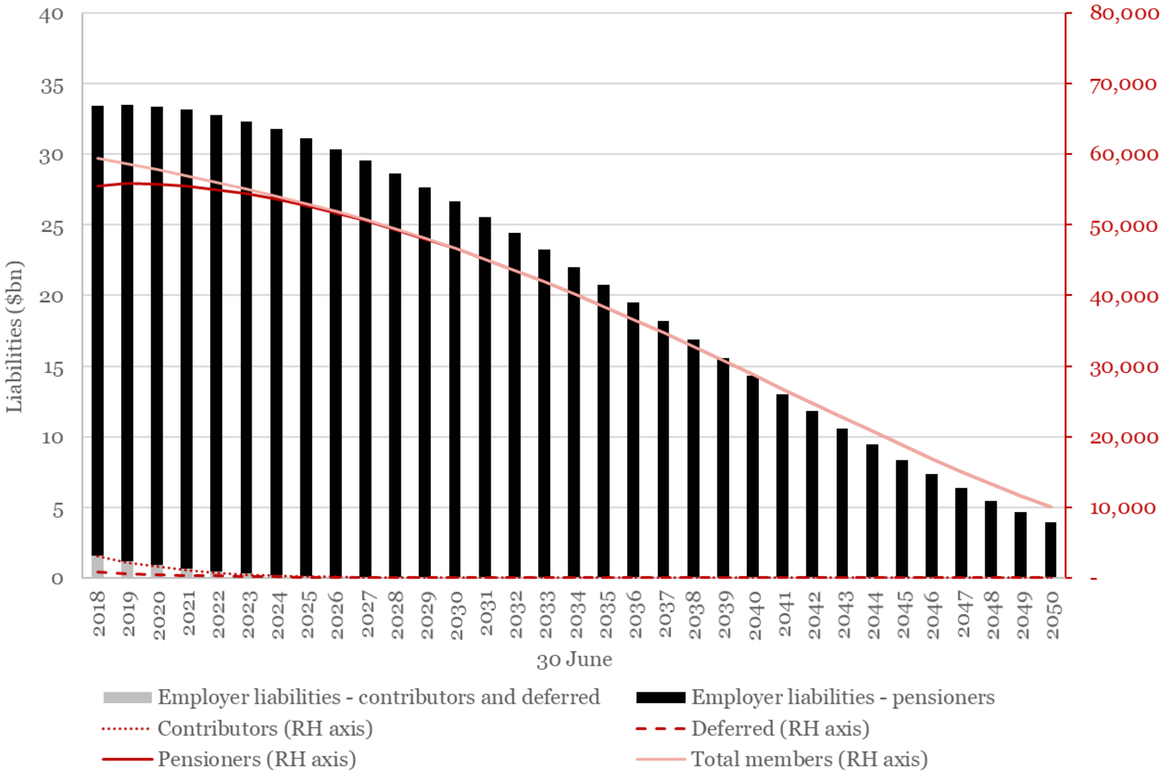
[1] Projected liabilities shown in future dollars.

SSS projections

Membership projected to be approximately 47,000 by 2030, of which almost all would be pensioners.

Projected liabilities[1] and membership[2]



Long term outlook

- The membership is predominantly pensioner reflecting the closed nature of the Fund. The scheme was closed to new entrants since 1 July 1985.
- Projected pensioner members and liabilities as a proportion of the total are as follows:

30 June	Members	Liabilities
2018	93%	95%
2021 (in 3 years)	97%	98%
2030	100%	100%

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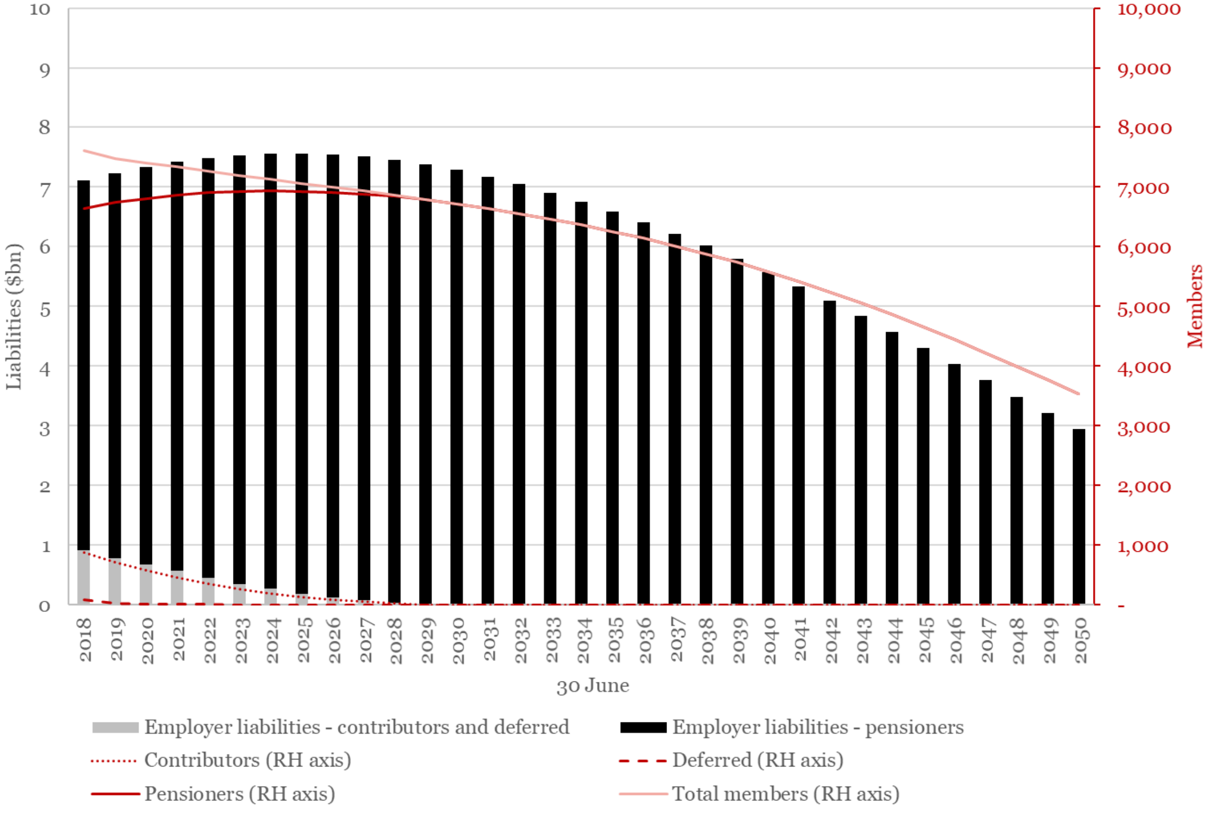
[1] Projected liabilities shown in future dollars.

[2] Membership as at 30 June 2018 excludes fully commuted SSS pensioners. Their spouses are included from the point that they are projected to receive a pension payment in the future.

PSS projections

Membership projected to be approximately 6,700 by 2030, of which all would be pensioners.

Projected liabilities[1] and membership



Long term outlook

- The membership is predominantly pensioner reflecting the closed nature of scheme. The scheme was closed to new entrants since 31 March 1988.
- Projected pensioners as a proportion of membership and liability is as follows:

30 June	Member	Liability
2018	87%	87%
2021 (in 3 years)	93%	92%
2030	100%	100%

- The liability is projected to increase for a few more years before it begins to decline in 2026. This is a combined effect of continued accrual for contributors, and a relatively slow decline in pensioner members as a result of the low average age for PSS pensioners.

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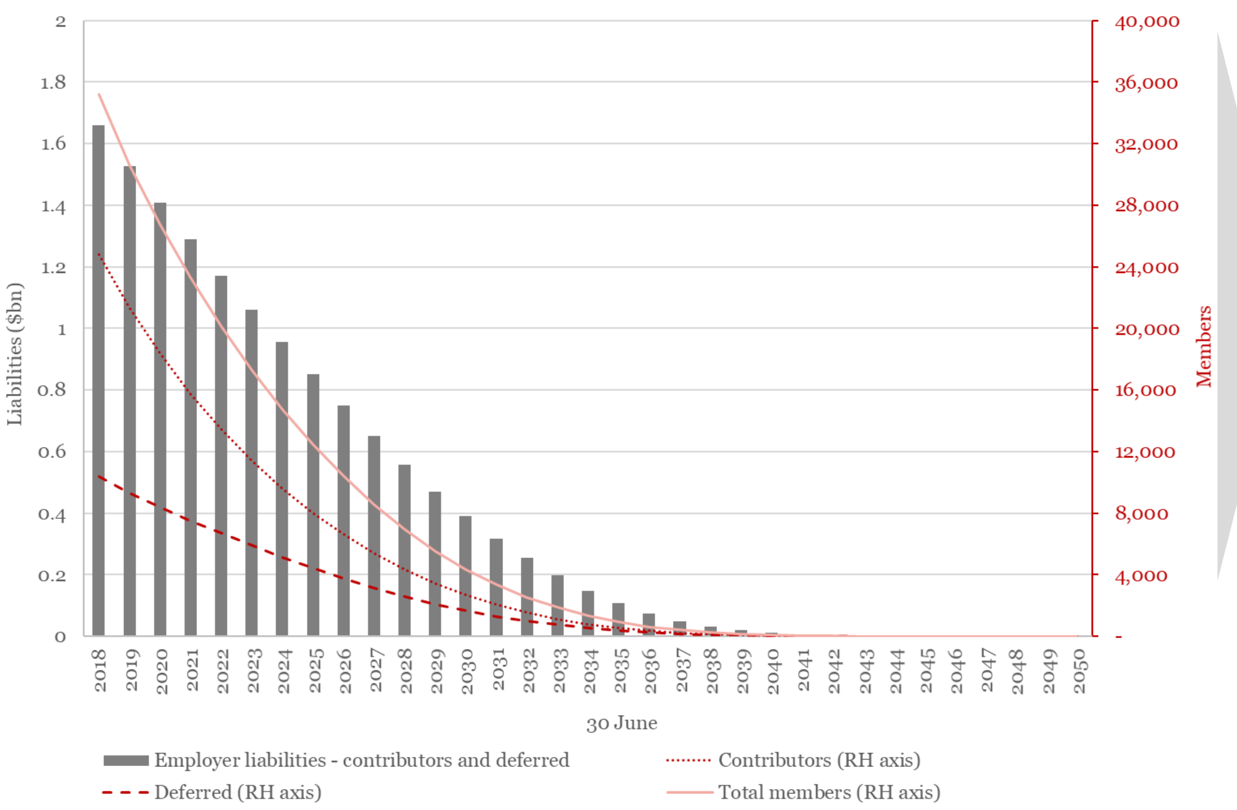
[1] Projected liabilities shown in future dollars.

SANCS projections

Membership projected to be approximately 4,300 by 2030.

Projected liabilities[1] and membership



Long term outlook

- SANCS membership is projected to reduce in line with the combined contributor/deferred exits for SASS, SSS and PSS, as these members are normally also SANCS members.
- All SANCS benefits are paid as a lump sum so there are no pensioners.
- In 3 years the membership and employer liability is projected to have decreased by 34% and 22% respectively.
- By 2030, the membership and employer liability is projected to have decreased by 88% and 76% respectively.
- Membership and liability is projected to decrease to zero by 2047, once all members have reached retirement age.

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[1] Projected liabilities shown in future dollars.

Risks and sensitivities

3

Key risks

The key risks faced by the NSW Pooled Fund are investment risk and pension increase risk

Level of risk

	Comments
Investment risk	A key risk faced by NSW Pooled Fund Moving to a more cautious investment strategy could reduce volatility to help mitigate this However this would also result in lower expected investment returns and increased employer liabilities and costs
Pension increase risk	RBA has adopted inflation target of 2-3% Monetary policy used to keep within target Strong pensioner presence in NSW Pooled Fund (79% of liability)
Salary increase risk	Employer has control over this Historically been less volatile than investments Contributors make up small (20%) of liability so salary increase risk is relatively low
Longevity risk	Future life expectancies continue to increase Allowance has been made in assumptions Strong pensioner presence in NSW Pooled Fund (currently 79% of liability. This will also impact contributors who are eligible for pension benefits in the future in the Fund.)
Catastrophe risk	Death and TPD self-insured Potential for catastrophic event to lead to multiple claims Offset by pensioners (who could also be impacted)
Legislative risk	Continual changes, such as increasing Superannuation Guarantee and APRA prudential standards could increase costs However, good governance may reduce risk

Sensitivity

Increase in employer past service liabilities of **$ 49.5 billion**

Investment risk	1% p.a. decrease in investment returns	$4.8bn 9.7%
Pension increase risk	1% p.a. increase in inflation	$4.5bn 9.2%
Salary increase risk	1% p.a. increase in salary increase	$0.5bn 1.0%
Longevity risk	Higher mortality improvements	$0.3bn 0.6%

- Details of key risks faced by the NSW Pooled Fund are shown above. Additionally we have shown sensitivity results which highlight the impact of a possible change in assumptions which relate to these risks. Note that these sensitivities reflect a possible alternative assumption rather than the size of the risk itself.
- Further breakdowns of these sensitivities, together with additional sensitivities, are shown on the next page.

Sensitivities in Employer Past Service Liabilities

Further details of the sensitivity results by Scheme are shown below

Employer Past Service Liabilities ($m)	SASS	SSS	PSS	SANCS	Total
Central assumptions	**7,376**	**33,392**	**7,110**	**1,660**	**49,538**
Investment return / Discount rate plus 1% (central assumption 7.4% p.a. / 6.4% p.a. [1])	6,918 (-458 or 6.2%)	30,596 (-2,796 or 8.4%)	6,361 (-749 or 10.5%)	1,584 (-76 or 4.6%)	45,458 (-4,080 or 8.2%)
Investment return / Discount rate minus 1% (central assumption 7.4% p.a. / 6.4% p.a. [1])	7,896 (+520 or 7.1%)	36,665 (+3,273 or 9.8%)	8,015 (+905 or 12.7%)	1,744 (+84 or 5.1%)	54,320 (+4,782 or 9.7%)
CPI increases plus 1% (central assumption 2.2% p.a.)	7,592 (+216 or 2.9%)	36,797 (+3,405 or 10.2%)	8,023 (+913 or 12.8%)	1,660 (no impact)	54,072 (+4,534 or 9.2%)
CPI increases minus 1% (central assumption 2.2% p.a.)	7,189 (-187 or 2.5%)	30,445 (-2,947 or 8.8%)	6,344 (-766 or 10.8%)	1,660 (no impact)	45,638 (-3,900 or 7.9%)
Salary increases plus 1% (central assumption 2.7% p.a. / 3.2% p.a. [2])	7,696 (+320 or 4.3%)	33,436 (+44 or 0.1%)	7,151 (+41 or 0.6%)	1,745 (+85 or 5.1%)	50,027 (+489 or 1.0%)
Salary increases minus 1% (central assumption 2.7% p.a. / 3.2% p.a. [2])	7,079 (-297 or 4.0%)	33,349 (-43 or 0.1%)	7,071 (-39 or 0.6%)	1,582 (-78 or 4.7%)	49,081 (-457 or 0.9%)
Short term pensioner mortality improvements [3] (see Appendix I for details of central assumption)	7,396 (+20 or 0.3%)	33,595 (+203 or 0.6%)	7,186 (+76 or 1.1%)	1,660 (no impact)	49,837 (+299 or 0.6%)
Long term pensioner mortality improvements [4] (see Appendix I for details of central assumption)	7,360 (-16 or 0.2%)	33,174 (-218 or 0.7%)	7,058 (-52 or 0.7%)	1,660 (no impact)	49,252 (-286 or 0.6%)

- The changes in each row above are applied individually, while leaving the other assumptions unchanged.

[1] Central assumption for discount rate is 7.4% p.a. for all pensioners / 6.4% p.a. for other members
[2] Central assumption 2.7% p.a. to 30 June 2019 and 3.2% p.a. thereafter
[3] Assumes the short term pensioner mortality improvement factors used for projection years 2018-2024, are also applied for years after 2024
[4] Assumes the long term pensioner mortality improvement factors used for projection years post 2024, are also applied for years 2018 to 2024

Employer contributions

4

Employer contributions and recommendation

The current funding arrangements together with our findings and any recommendations are set out below:

Sector	Current funding arrangement	Findings and recommendations
State Sector		
General Government Sector – Crown	The NSW Government is committed to fully funding all General Government Sector liabilities by 2030 in accordance with the Fiscal Responsibility Act 2012. This commitment is reaffirmed in the 2018-19 NSW Budget. The current funding plan determined the contributions which, when increased at 5% p.a., are expected fully fund the sector by 30 June 2030. The current level of contributions under this plan for 2018-19 are $1.577bn.	The latest funding projections show that the General Government Sector is projected to achieve a $0.3bn surplus at 30 June 2030 – see page 16. **Recommendation: Maintain current Crown funding plan and continue to review the funding position annually and adjust as necessary.** **Recommendation: Rebalance the Crown funding plan contributions by Scheme so that they are in line with the proportions of the General Government Sector employer unfunded liabilities: SASS 12.2%, SSS 66.1%, PSS 19.6% and SANCS 2.1%[1]**
General Government Sector – Non - Crown	Previously agreed level of contribution for non-Crown employers is assumed to continue for the purposes of the projections in this report. The Crown funding commitment above also covers the full General Government Sector.	As above, the latest funding projections show that the General Government Sector is projected to achieve a $0.3bn surplus at 30 June 2030. Individual entity funding plans were reviewed as at 30 June 2018 in October 2018 and recommendations were provided separately.
Public Trading Enterprises (PTEs)	Individual employer funding plans reviewed annually.	Individual employer funding plans were reviewed as at 30 June 2018 in October 2018 and recommendations were provided separately.
Non State Sector		
Universities	Jointly funded by the NSW and Commonwealth Governments and the Universities on a pay-as-you-go basis[1].	No recommendation required.
Other employers	Individual employer funding plans reviewed annually.	Individual employer funding plans were reviewed as at 30 June 2018 in October 2018 and recommendations were provided separately.

- The previous triennial did not recommend any changes for the Crown funding plan. This plan has continued to be kept under review. We understand that the funding plans for PTE and Other employers have been considered by the Trustee following each annual contribution review, and adjustments have been made to the funding plans as appropriate.

[1] Appendix E details the spilt of General Government Sector employer unfunded liabilities of $13.0bn by Scheme: SASS $1.6bn, SSS $8.6bn, PSS $2.5bn, SANCS $0.3bn.

[2] The Commonwealth and NSW Governments entered into a Memorandum of Understanding (MoU) in December 2014. Under this the Commonwealth and NSW Governments have agreed to assist the universities with their unfunded superannuation liabilities through the provision of funds on a 78/22 per cent basis respectively. The universities will continue to contribute at their current rate of 17% of salaries per annum and further additional contributions in respect of 'Excess salaries' as set out in the MoU. The Commonwealth and NSW Governments will make payments to the Fund on a pay-as-you-go basis with the aim of maintaining a 1-year asset buffer at all times to meet expected benefit payments. A similar arrangement is in place for University of NSW (UNSW) Australian Defence Force Academy (ADFA), under which pay-as-you-go contributions are funded by UNSW, with the aim of maintaining a 3-year asset buffer.

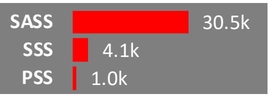
Membership

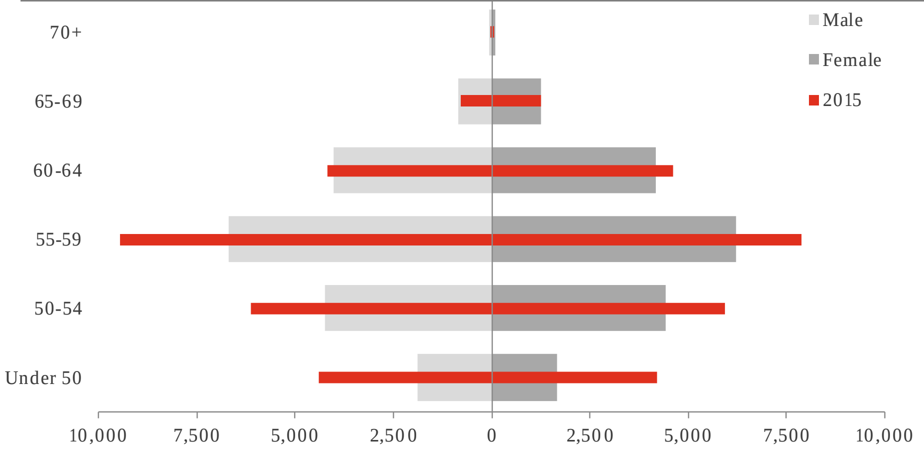
5

NSW Pooled Fund membership[1]

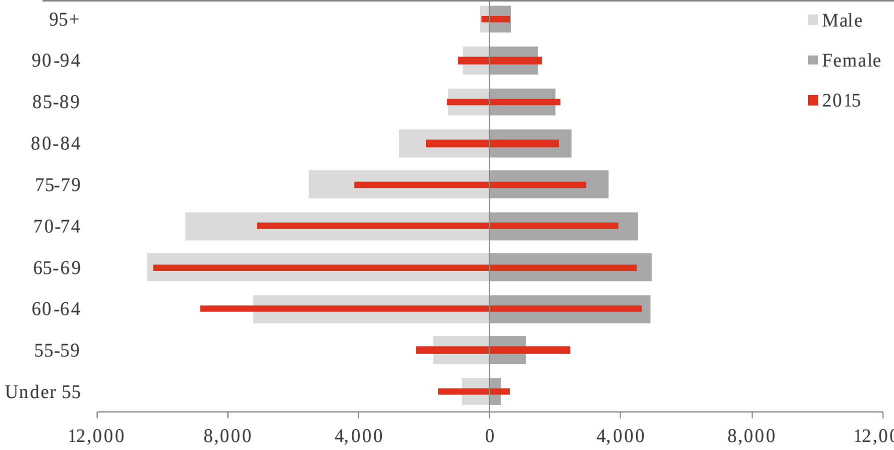
The total membership has decreased by 9.0% from 130,456 to 118,695 over the three year period

Contributor and deferred membership





Pensioner membership [2]



Contributors	2018	2015	Change
Membership	25,036	36,940	(32.2%)
Average age	56.8	55.6	1.2
Average service	30.4	30.0	0.4
Average salary [3]	$109,358	$99,215	10.2% / 3.3% p.a.[4]
Total salary [3]	$2,738m	$3,665m	(25.3%)

Deferreds [5]	2018	2015	Change
Membership	10,557	12,019	(12.2%)
Average age	56.0	54.0	2.1

Total	2018	2015	Change
Membership (incl SSS fully commuted pensioners)	118,695	130,456	(9.0%)

Pensioners	2018	2015	Change
Current	66,293	64,220	3.2%
Average age	71.3	70.1	1.2
Average pension	$46,593	$42,915	8.6% / 2.8% p.a.
Total pension	$3,089m	$2,756m	12.1%
Fully commuted pensioners	16,809	17,277	(2.7%)

- There are 35,594 non-pensioners, 66,293 pensioners as well as 16,809 fully commuted SSS pensioners whose spouses are eligible for reversionary pension (118,695 total).
- The membership profile has changed considerably over the 3 years with 32% fewer contributors and 12% fewer deferred members.

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[1] Based on SASS, SSS and PSS members using 30 April 2018 administrative data, projected to 30 June 2018 (as such figures may differ slightly to in Annual Accounts). Contributory and deferred members are also generally in SANCS.

[2] Chart excludes the 16,809 SSS fully commuted pensioners

[3] Full time equivalent salary

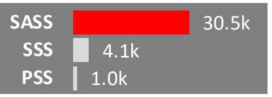
[4] Change in average salary across all members. This differs from the average salary increase for in-force members shown in Section 1 and later in this Section.

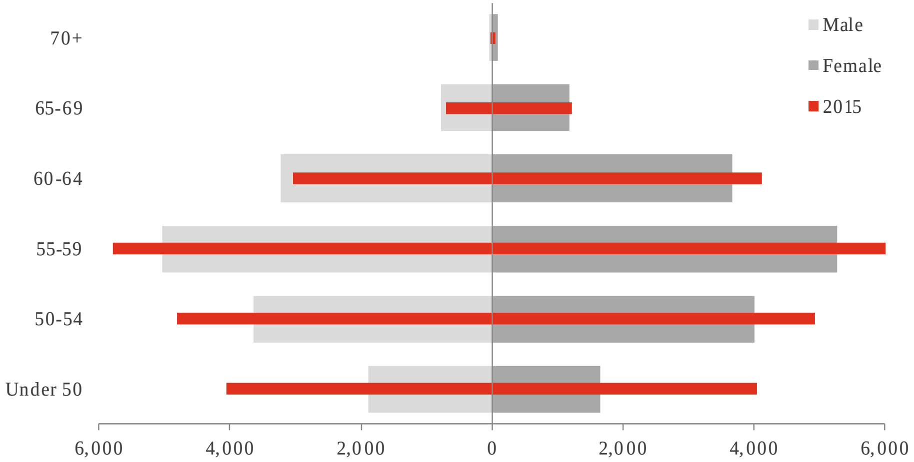
[5] SSS deferreds who are currently receiving pension payments have been excluded from the deferreds count and included in pensioners.

SASS membership

The total membership has decreased by 18.9% from 43,073 to 34,916 over the three year period

Contributor and deferred membership



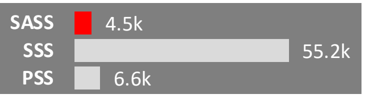


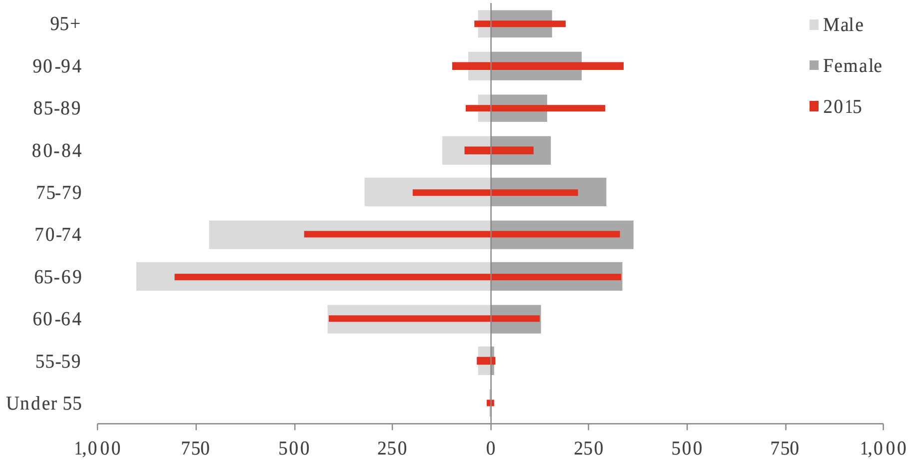
Contributors	2018	2015	Change
Membership	20,945	28,552	(26.6%)
Average age	56.7	55.4	1.3
Average service	29.3	28.7	0.6
Average salary	$107,000	$95,896	11.6% / 3.7% p.a.
Total salary	$2,241m	$2,738m	(18.1%)

Deferreds	2018	2015	Change
Membership	9,516	10,354	(8.1%)
Average age	55.8	53.6	2.2

Total	2018	2015	Change
Membership	34,916	43,073	(18.9%)

Pensioner membership





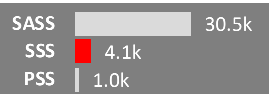
Pensioners	2018	2015	Change
Membership	4,455	4,167	6.9%
Average age	73.5	74.8	(1.3)
Average pension	$25,620	$20,637	24.1% / 7.5% p.a.
Total pension	$114m	$86m	32.7%

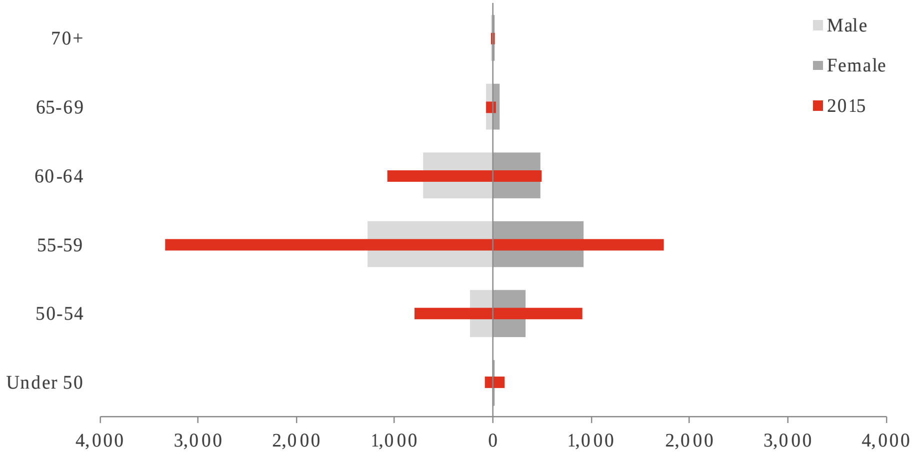
- SASS makes up 86% of the non pensioner members of the Pooled Fund, and 7% of the pensioner members.
- SASS has seen the largest decrease in membership (18.9% decrease) which is a result of SASS members generally receiving a lump sum at retirement and ceasing to be members of the Fund (rather than receiving a pension and continuing their membership).

SSS membership

The total membership has decreased by 4.1% from 79,439 to 76,174 over the three year period

Contributor and deferred membership



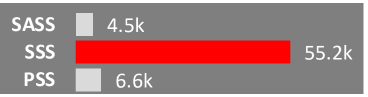


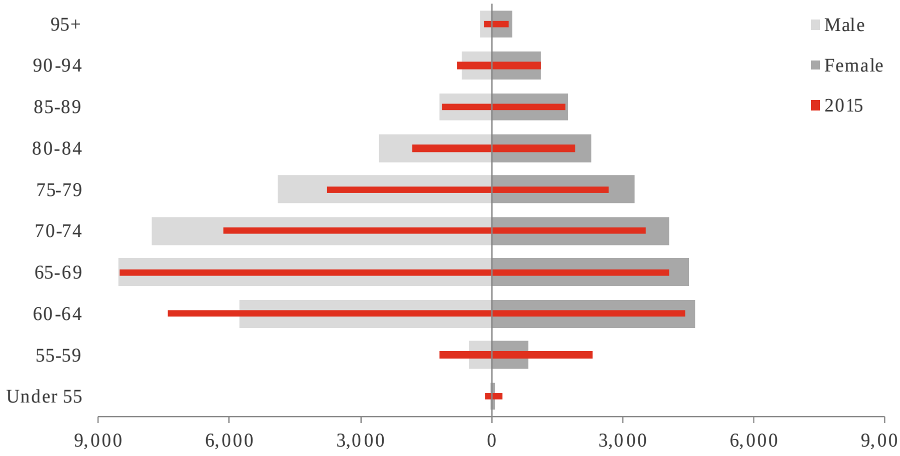
Contributors	**2018**	**2015**	**Change**
Membership	3,175	7,113	(55.4%)
Average age	58.1	57.1	1.0
Average service	36.5	34.9	1.6
Average salary	$116,359	$107,553	8.2% / 2.7% p.a.
Total salary	$369m	$765m	(51.7%)

Deferreds[2]	**2018**	**2015**	**Change**
Membership	957	1,551	(38.3%)
Average age	58.2	56.4	1.8

Total	**2018**	**2015**	**Change**
Membership (incl SSS fully commuted pensioners)	76,174	79,439	(4.1%)

Pensioner membership [1]





Pensioners	**2018**	**2015**	**Change**
Current[2]	55,233	53,498	3.2%
Average age	71.9	70.6	1.3
Average pension	$45,887	$42,282	8.5% / 2.8% p.a.
Total pension	$2,534m	$2,262m	12.0%
Fully commuted pensioners	16,809	17,277	(2.7%)

- SSS makes up 12% of the non pensioner members of the Pooled Fund, and 83% of the pensioner members. In addition to there are 16,809 fully commuted SSS pensioners whose spouses are eligible for reversionary pension.
- The contributor membership for SSS has decreased significantly by 55.4% or 3,938 people. This is mostly due to retirements.

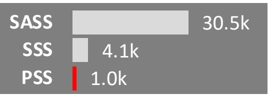
[1] Chart excludes the 16,809 SSS fully commuted pensioners.

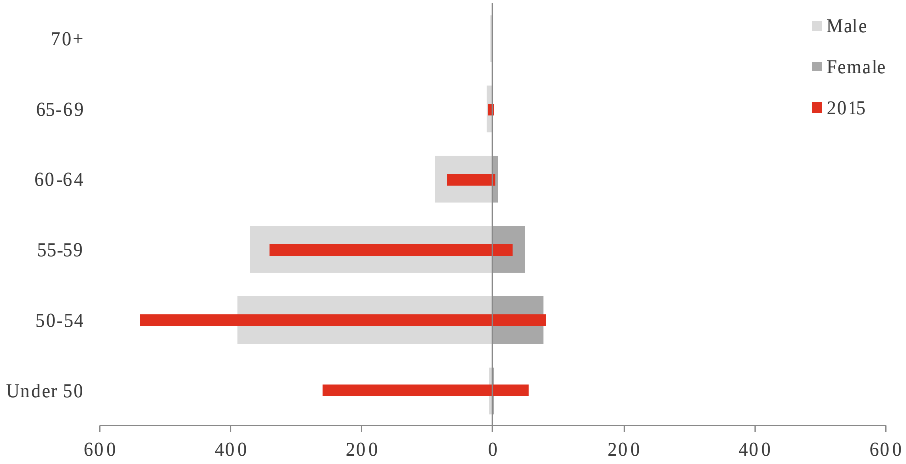
[2] SSS deferreds who are currently receiving pension payments have been excluded from the deferreds count and included in pensioners. There were 453 such members in 2018 and 496 in 2015.

PSS membership

The total membership has decreased by 4.3% from 7,944 to 7,605 over the three year period

Contributor and deferred membership



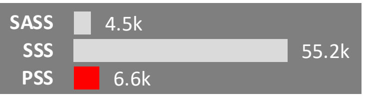


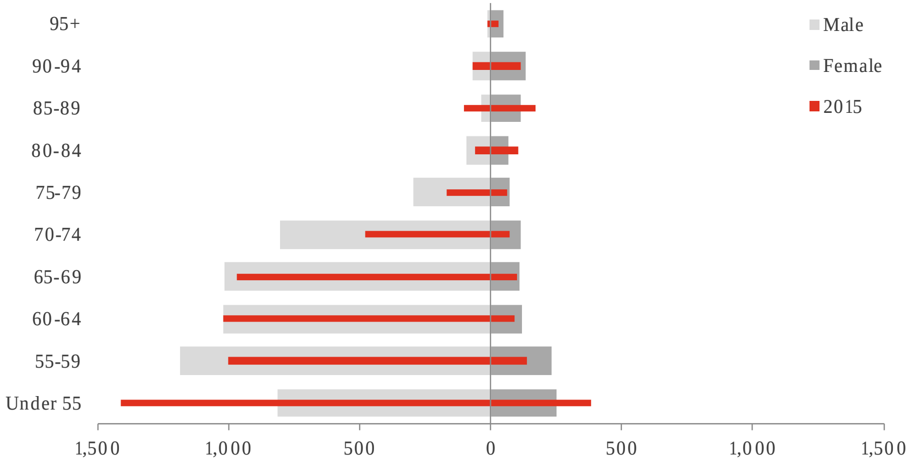
Contributors	2018	2015	Change
Membership	916	1,275	(28.2%)
Average age	55.0	52.8	2.2
Average service	33.5	30.9	2.6
Average salary	$139,014	$126,934	9.5% / 3.1% p.a.
Total salary	$127m	$162m	(21.4%)

Deferreds	2018	2015	Change
Membership	84	114	(26.3%)
Average age	56.6	54.2	2.4

Total	2018	2015	Change
Membership	7,605	7,944	(4.3%)

Pensioner membership





Pensioners	2018	2015	Change
Membership	6,605	6,555	0.8%
Average age	64.6	62.8	1.8
Average pension	$66,645	$62,171	7.2% / 2.3% p.a.
Total pension	$440m	$408m	7.9%

- PSS makes up 3% of the non pensioner members of the Pooled Fund, and 10% of the pensioner members.
- The average age of pensioners for PSS has increased by 1.8 years over the 3 year period from 62.8 to 64.6. In particular there are now significantly fewer pensioners aged under 55.

SANCS membership

The total membership has decreased by 27.2% from 48,696 to 35,470 over the three year period

Contributors	2018	2015	Change
Membership	25,034	36,933	(32.2%)

Deferreds	2018	2015	Change
Membership	10,436	11,763	(11.3%)

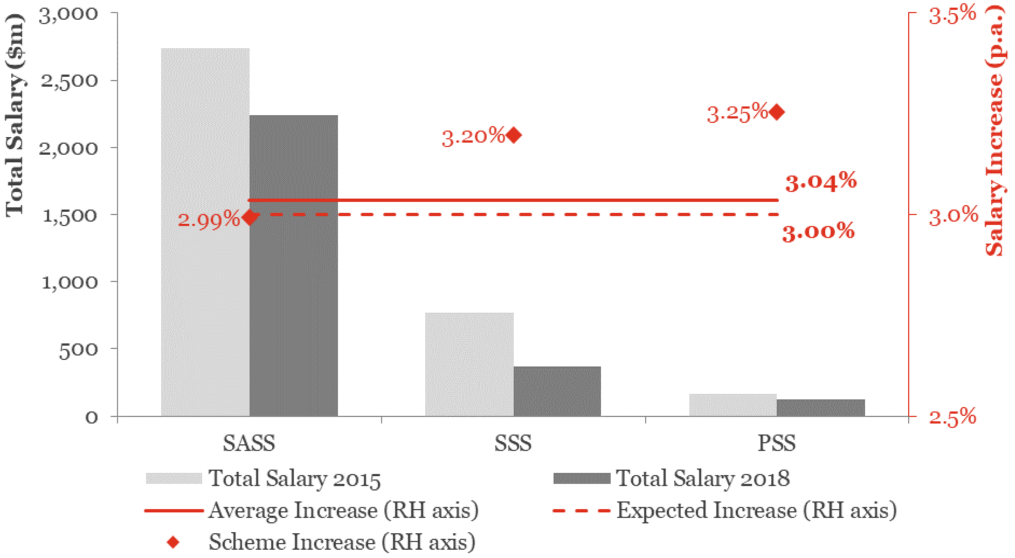
Total	2018	2015	Change
Membership	35,470	48,696	(27.2%)

- In general SASS, SSS and PSS contributory and deferred members are also members of SANCS. As such the total Pooled Fund profile information on page 28 for contributory and deferred members, is also relevant for SANCS members.
- The differences between SANCS membership and the memberships of SASS, SSS and PSS are as follows:
    - We understand members from Sydney Grammar are not SANCS members. There were 2 SSS contributors from Sydney Grammar as at 30 June 2018.
    - The difference in deferreds is due to SSS members who are deferred but are currently receiving pension payments (they have been excluded from the SSS deferreds count, but are present in SANCS deferreds). This is offset by deferred members of SASS, SSS and PSS who don’t have a record in the SANCS administrative data.

NSW Pooled Fund – Salary and pension increases

The average salary increases for contributors over the last three years was 3.0% p.a., which is in line with the expected increase. Pension increases were 1.8% p.a. which is lower than the 2.5% p.a. expected increases.

Contributor salaries[1]



Pensions

- Average salary increases over the last three years for people who have remained in service have been 2.99% p.a. for SASS, 3.20% p.a. for SSS and 3.25% p.a. for PSS
- This compares with expected salary increases of 3.0% p.a.
- The total salary role has decreased across all three Schemes.

- Pensioners in each Scheme receive increases in line with the increase in CPI. The average increase over the last three years has been 1.76%, compared to the expected increase of 2.5%.

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[1] Actual salary increases: these are based on the average increase each year for people who remained contributors in the Scheme - this differs from the increase in the average salaries shown in the pages above. Expected salary increases: for simplicity we have excluded the impact of the promotional salary scale when estimating the salary increase experience item above. This proportional scale only has a minor effect as around 90% of contributors are now above the age range that this promotional scale is applied for.

NSW Pooled Fund membership movements

Overall membership decreased by 9.0% from 130,456 to 118,695, reflecting the closed nature of the Fund and members leaving

	Contributors	Deferreds	Pensioners[1]	Total
30 June 2015	36,940	12,019	81,497	130,456
Exits [2]	11,915 ^	2,998	5,898	20,811
New entrants	11 [3]	1,536	7,503 [4]	9,050
30 June 2018	**25,036**	**10,557**	**83,102**	**118,695**
Change	(32.2%)	(12.2%)	2.0%	(9.0%)

^ See breakdown of contributor exits on the right

	Contributor exits breakdown
Deaths	95
Disablement	582
Resignations	464
Retirements	10,166
Retrenchments	608
Total	**11,915**

- The table above shows the total membership movements.
- Overall there were 20,811 exits and 9,050 entries. This includes double counting where there were movements between membership category.
- Further details of membership movements by Scheme are shown in Appendix H.

[1] Includes SSS fully commuted pensioners.

2 Includes projected Fund exits between data date (30 April 2018) and valuation date (30 June 2018), but does not include movements between membership types during this 2 month projection period.

[3] Analysis of data showed 11 new entrants into contributors. These relate to reinstatements of SASS members rather than genuine new entrants.

[4] New entrants into pensioners include spouse pensions commencing following the death of original pensioner.

Investments and insurance

6

Investment strategy

The majority of the Fund assets are invested in the Trustee Selection investment option

- The Trustee has a documented Investment Policy Statement which is currently under review, however we have considered the existing policy dated 17 June 2015. STC's stated primary investment objective is to achieve target rate of returns within acceptable risk parameters and to support the NSW Government meet its funding goal.
- The following seven investment options are used:

Investment options	% of Fund assets[1]
Trustee Selection (Defined Benefits – Growth)	80.5%
University – Diversified Conservative	0.3%
University - Cash	0.9%
Defined Contribution – Growth	14.6%
Defined Contribution – Balanced	2.2%
Defined Contribution – Diversified Conservative	1.2%
Defined Contribution – Cash	0.3%

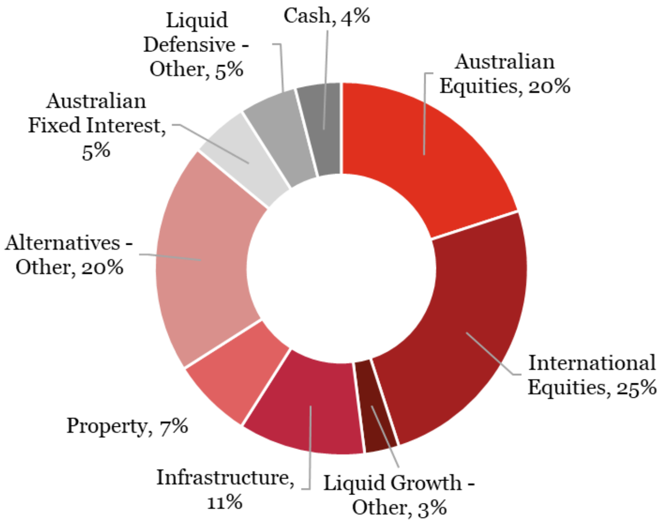
- The Trustee Selection investment option has a high growth component and targets higher returns which consistent with a longer term funding strategy. The two University investment options target a lower level of returns but with more certainty. The Defined Contribution options are intended to provide a range of investment options that broadly cover the risk-return spectrum.
- We believe that the investment options are reasonable, considering the nature of the liabilities, the backing of NSW Government in addressing the shortfall, and also the Board's objectives.
- The Trustee's Investment Policy Statement states that given the Fund's negative cash flow position, the Trustee aim to hold at least two years' projected benefit payments in liquid assets. The Trustee has controls in place around the liquidity levels required. We believe that this policy is reasonable.
- Crediting rates are used to attribute the Scheme's investment returns to the different reserves. The crediting rates are produced for each of the investment options above and the Trustee has an Asset Valuation Policy (dated June 2016), which includes a goal of ensuring valid crediting rates. Whilst we have not carried out a detailed review, we believe that the approach is reasonable.
- We have set out information on the Trustee Selection which supports the majority of the employer reserves on the next slide. We have also set out information on the University – Diversified Conservative and University – Cash, which support the remainder of the employer reserves, in Appendix F. Additional information on all seven can be found in the publicly available STC Annual Report.

[1] Fund splits by investment option above are based on total assets at 30 June 2018 provided by STC from the provisional draft STC 2017/18 Annual Report.

Investment Portfolio – Trustee Selection

In our opinion the investment strategy is reasonable and consistent with the Board's objectives, strategic asset allocation and the nature of the liabilities. The net return over the 3 year period was 7.1% p.a., higher than 6.8% p.a. expected as at 30 June 2015.

Strategic Asset Allocation as at 1 July 2018 [1]

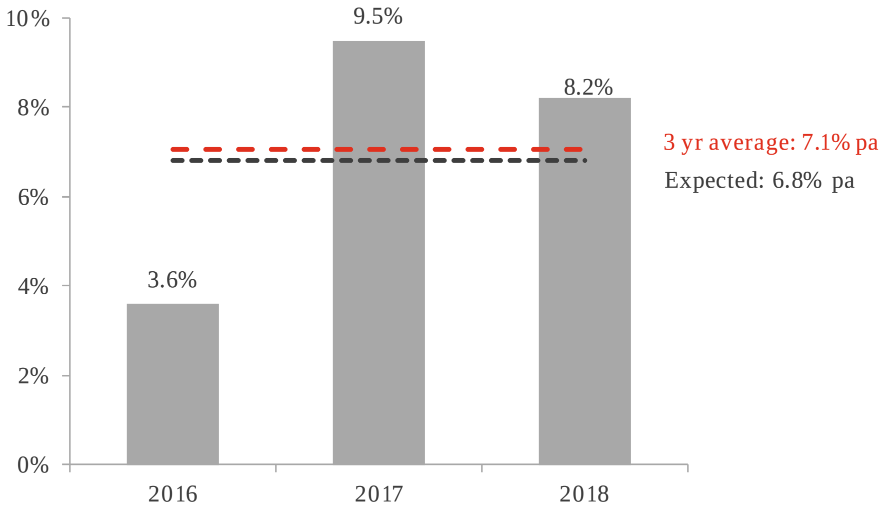


- Return over the period (7.1% p.a. after tax and fees) was higher than assumed long term return of 6.8% p.a. as at 30 June 2015.
- Over the last ten years returns have been 6.7% p.a. (net).

Investment Objectives

- Target is return of CPI + 4% p.a. over rolling 10 year periods
- As at 30 June 2018, the assumed returns are 6.4% p.a. net of fees and tax for contributors and deferred, and 7.4% p.a. gross of tax and net of fees for pensioners. This is lower than the 30 June 2015 assumptions of 6.8% p.a. net of fees and tax, and 7.8% p.a. gross of tax and net of fees.

Investment Returns (post superannuation tax and pre-ECPI) [2]



[1] Source: State Super website, as approved by the Board in June 2018.

[2] Investment returns in this chart are net of superannuation tax and fees, and before any increase due to exempt current pension income (ECPI).

Asset values

The total assets for the Pooled Fund are $43,021.6m including the $7.4m SASS Additional Benefits Reserve.

Assets as at 30 June 2018 ($m)	Employer reserves	Member reserves	Deferred benefit reserves	Total excl. SASS Additional Benefits Reserve	SASS Additional Benefits Reserves	Total
SASS	5,625.0	4,784.3	2,533.0	12,942.3	7.4	12,949.7
SSS	22,062.7	1,163.8	-	23,226.5	-	23,226.5
PSS	4,565.3	335.1	-	4,900.4	-	4,900.4
SANCS	1,311.7^	94.2^	539.1	1,945.0	-	1,945.0
Total	**33,564.7**	**6,377.4**	**3,072.1**	**43,014.2**	**7.4**	**43,021.6**

^ See notes below on adjustment made to SANCS employer and member reserve

- The audited total net assets in the financial statements are $45,566m. This includes an allowance of $2,545m for an Employer Sponsor Receivable which relates to the PSS deficiency. The total net assets in the financial statements excluding this receivable are $43,021m.
- STC also provided us with a separate breakdown of the net assets (excluding the PSS receivable), broken down to Scheme and Reserve. The total assets in this breakdown ($43,021.6m) are consistent with the audited assets in the financial statements reference above, after the PSS receivable is excluded.
- We have made the following further adjustments to the net assets for the purposes of our reporting, in addition to the exclusion of the PSS receivable:
  - For consistency with the liabilities, the total assets used in this report exclude the SASS Additional Benefits Reserve of $7.4m which is a self-insurance arrangement to cover the member's proportion of the SASS Additional Benefits (and this is subject to a further actuarial investigation). This results in total net assets of $43,014.2m.
  - We have adjusted the presentation of the assets above by moving the SANCS Other Accounts (estimated to be $45.9m) from the SANCS employer reserves to the SANCS members reserves. We presented the results in this way as the SANCS Other Accounts relate to accumulation-style benefits and do not count towards the funding of employer past service liabilities. The assets provided by STC shows SANCS employer reserves of $1,357.6m (which was reduced for the presentation above by $45.9m to give $1,311.7m), and SANCS member reserves of $48.3m (which was correspondingly increased for the presentation above by $45.9m to give $94.2m).

Self-insurance arrangements for death and disability benefits

The NSW Pooled Fund self-insures death and disability benefits. Benefits are met from the reserves, with backing from the State government.

In our opinion, these arrangements are adequate and in the members' best interests.

Insured benefits

- Death and Disability benefits for all Schemes as well as the employer component of the SASS Additional Benefits are self insured within the Fund.
- The SASS Additional Benefits Reserve, a separate self-insurance arrangement, is held to cover the member's portion of the SASS Additional Benefits.

Main risks

- Employer contributions include an allowance for expected claims.
- As such, normal variations in experience pose little risk.
- The main risk is high unexpected claims due to pandemics or other catastrophes.

Risk mitigants

- The benefits are underwritten by the State government, so little risk of genuine claims not being paid.
- The Fund has pensioners as well, who will also be impacted by pandemics etc and as such this liability would be reduced, releasing assets so acting as a hedge.

Impact of higher claims

- Total self-insured benefits = $24.1bn ($11.6bn death, $12.5bn disability).
- Expected annual cost of claims = $197m (0.8% of insurable liability).
- If claims for a year doubled the additional cost would be approximately $197m (representing a 0.4% increase in employer funded liabilities).
- This is immaterial compared to investment earning fluctuations.

Actuarial management

- STC is in the process of establishing an insurance management framework.
- Each triennial valuation considers the self insurance and impact on funding position and employer contributions.
- In our opinion, the current arrangements are adequate and in the members' best interests.
- The SASS Additional Benefits Reserve is subject to a separate valuation which will be carried out following the completion of this triennial report. The last full valuation was carried out as at 30 June 2015 and interim reviews are carried out annually.

Assumptions and methodology

7

Economic assumptions

The economic and demographic assumptions were reviewed and updated in 2018. The economic assumptions remain unchanged since the 2017 annual valuation, when the discount rates, salary increase rates and CPI rates were reduced.

Assumption	30 June 2015 triennial valuation	30 June 2017 AASB1056 valuation	30 June 2018 triennial valuation
Discount rate			
Non-pensioner	6.8% p.a.	6.4% p.a.	**6.4% p.a.**
Pensioner	7.8% p.a.	7.4% p.a.	**7.4% p.a.**
General salary increase			
Short term	3.0% p.a. to 30 June 2019	2.7% p.a. to 30 June 2019	**2.7% p.a.** **to 30 June 2019**
Long term	3.5% p.a.	3.2% p.a.	**3.2% p.a.**
Rate of CPI increase	2.5% p.a.	2.2% p.a.	**2.2% p.a.**
Expenses	1.0% of benefit payments		**1.0% of benefit payments**

- The table above shows the economic assumptions agreed by the Trustee. An experience review was carried out and reported on separately in order to inform the economic and demographic assumptions, which are set as a best estimate. The review considered:
    - The current long-term market outlook for future investment returns (allowing for the Fund's investment strategy), as well as CPI increases.
    - Actual vs expected experience for the Fund over recent years.
    - Broader superannuation industry practices and research.
- Pension liabilities are assumed to be backed by assets which are exempt from investment tax. Non-pensioner liabilities are assumed to be subject to investment tax and so a lower return is used. Additionally, employer contributions are assumed to be taxed at 13% which is in line with recent contribution tax experience, net of deductions for expenses and premiums.
- In terms of the economic assumptions, the key driver of the valuation is the difference between the discount rate and the assumptions underlying liability growth (salary inflation and CPI increases).
- This difference has decreased by 0.1% p.a. from 5.3% p.a. (based on the 30 June 2015 assumptions), to 5.2% p.a. (based on the 30 June 2018 assumptions)[1].
- Overall these economic assumption changes resulted in a $357m (or 0.7%) increase[2] in the employer past service liabilities (of $49.5bn).

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[1] The difference looked at for this comparison is the difference between the pensioner discount rate (2018 assumption: 7.4% p.a.) and the rated of CPI increases (2018 assumption: 2.2% p.a.).

2 See page 14 for further details – amount shown is total of discount rate, salary and CPI changes (-$1,797m, +$152m and +$1,288m impacts respectively on the unfunded employer liabilities).

Demographic assumptions

The table below shows the key demographic assumptions as well as brief commentary on some of the recent experience seen at the time of both valuations.

Assumption	2015 triennial valuation updates	2018 triennial valuation updates
Pensioner mortality All schemes	Actual experience to 2015 was close to expected; 3 years of mortality improvements and smoothing were applied to the rates	Maintain 2015 valuation assumptions with the applicable mortality improvements from 2015 to 2018
Pensioner mortality future improvements All schemes	6 years of short-term ALT10-12 improvement factors [1] applied from the valuation date, and thereafter the ALT10-12 long-term improvement factors	No change as current factors are the latest available; continue to apply 6 years of short-term and thereafter long-term improvement factors
Retirements SSS and SASS contributors	Actual exits to 2015 were higher than expected, but no change was made to retirement rates as retrenchment rates were restructured to include higher rates for members over early retirement age	Actual exits continue to be higher than expected; increase SASS retirement rates in line with experience but no change to SSS retirement rates
Retirement and hurt on duty PSS contributors	Simplified to 100% retirement at age 60 and reduced hurt on duty assumptions in line with experience; maintained the level of discretionary hurt on duty pensions at 100% of salary	No change
Pension take up SASS contributors	Increased assumption from 28% to 50% in line with experience	Increase assumption from 50% to 60% in line with experience
Other demographics SASS preservation	Increased assumption to 75%+ in line with experience	Increase assumption to 85%+ in line with experience

- The changes in demographic assumptions above were made following the experience review, which was reported on separately. The table above summarises the key demographic assumptions agreed by STC. Further details on the assumptions are shown in Appendix I.
- The demographic assumption changes above resulted in a \$241m[2] increase in the employer past service liabilities (of \$49.5bn). See page 14 for further commentary.

[1] The pensioner mortality future improvement factors allow for mortality rates to continue to improve into the future. The rates used have been taken from the latest Australia Life Tables 2010-12 (ALT10-12) produced by the Australian Government Actuary. The following two scenarios are published and these are both used in our projections: short-term improvement rates which considered improvements seen over the past 25 years; and long-term improvement rates which considered improvements seen over the past 125 years. The short-term improvement rates have generally higher year-on-year mortality improvements than the long-term rates (with some differences by age). These short-term rates have been applied for the first 6 years, followed by the long-term rates thereafter.

[2] 0.5% increase, of which 0.2% from demographic assumption changes and 0.3% from the continuation of the short-term mortality improvement rates for the first 6 years after the valuation date.

Valuation methodology

There are two main measures of the Fund’s liabilities, Past Service Liabilities and Vested Benefits.

Measure	Comments
Past Service Liabilities (Accrued Benefits)	• The Past Service Liabilities are valued using the present day, discounted value of the expected future benefit payments arising from membership completed prior to the valuation date. • The valuation of Past Service Liabilities is in respect of past service only, there is no account taken of benefits arising from future service or of any self-insured liabilities. • Past Service Liabilities have been calculated without applying a Vested Benefits minimum, consistent with the requirements of AASB1056 and Professional Standards.
Vested Benefits	• For contributors, the Vested Benefit is equal to the resignation/retirement benefit. For members under the early retirement age, we have allowed for a proportion will choose to defer their benefits rather than take a cash resignation benefit. This proportion is in line with the demographic assumptions for the schemes. • For deferred benefits and pensioners, the Vested Benefit is the same as the Past Service Liabilities. That is, it is valued using the present day, discounted value of the expected future benefit payments arising from membership completed prior to the valuation date. • Not subjected to a minimum of the Minimum Requisite Benefit.

Details of approach	Comments
Approach to Apportionment of Benefits	• The valuation calculations project each benefit to the projected dates of exit, allowing for future accrual and salary increases. • These projected benefits are then multiplied by an apportionment factor in order to estimate the past service component, with the remainder used to estimate future service component. • The apportionment factor used allows for the service up to the valuation date, as a proportion of the projected of service up to the date of exit. • We have set out further details in Appendix A.
Roll forward methodology	• Membership data was provided by the Fund administrators as at 30 April 2018 and this has been relied on for our calculations. This data is summarised in Section 5. • We have rolled forward these results to 30 June 2018 allowing for expected experience in line with the triennial assumptions. We have also allowed for actual assets at 30 June 2018, as set out in Section 6.

- The calculations make use of certain Fund factors. We note that the SSS commutation factors are currently under review. This is not expected to materially impact the Fund liabilities, and we have not made allowance for any changes.
- The method above is in line with that used in the previous actuarial investigation.
- When considering funding plans we have projected forward the Past Service Liabilities, allowing for future accrual as well as contributions and other projected movements in assets. We believe that the valuation methodology above is appropriate given the nature of the Fund and the funding arrangements.
- Detailed Past Service Liabilities and Vested Benefits result are provided in Section 8 and Appendix E.

8

Actuarial statements

Statements

The following statements are made in line with the STC Defined Benefit Matters Policy.

The STC Defined Benefit Matters Policy outlines STC Management's monitoring and review processes and funding arrangements for the Pooled Fund and its employers, to ensure the STC Schemes are maintained in accordance with their governing legislation and the Commonwealth's retirement principles. This policy considers Scheme legislation as well as relevant standards and guidance issued by APRA[1]. This is an STC Management policy rather than a Board policy.

The information below is provided in line with Section 8 of the STC Defined Benefit Matters Policy.

- Summary of membership data – see Section 5.
- Overview of the STC Schemes – see Appendix A.
- Value of the assets and employer reserves – see Sections 1 and 6.
- Financial and demographic experience to date – see Sections 5 and 6, as well as the separate experience analysis report.
- Financial and demographic assumptions and funding method – see Section 7 as well as the separate experience analysis report.
- Value of the Past Service Liabilities (accrued benefits), Vested Benefits and minimum (SG) benefits by Scheme – see Section 1 as well as the next page.
- Projection of likely funding position during the three years following the valuation date by Scheme and employer – see Section 2 for General Government Sector projections. Projections by Scheme and Sector, as well as employer level funding results to be provided separately.
- Sensitivity of the valuation results to changes in key assumptions – see Section 3.
- Recommendation/s on the funding arrangements including the level of employer contributions for the three-year period immediately following the valuation date by Scheme and employer – see Section 4. We carried out a contribution review as at 30 June 2018 in October 2018 which covers the individual Non Crown General Government Sector entities, PTEs and Other employers. Results were provided separately.

Additionally, the following statements are made in line with Section 8 of the STC Defined Benefit Matter Policy.

- In our opinion the assets of the Fund combined with the future contributions and earnings, as well as the backing from State Government, are sufficient to meet the liabilities of the Fund.
- In our opinion the funding arrangements for the Fund as a whole are adequate. Individual Non Crown General Government Sector entities, PTEs and Other employer funding plans were reviewed as at 30 June 2018 in October 2018 and recommendations were provided separately.

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[1] Specifically Prudential Standard SPS 160 – Defined Benefit Matters (dated July 2013) (SPS 160.0); APRA guidance contained in Prudential Practice Guide SPG 160 Defined Benefit Matters (dated November 2013) (SPG 160.0); Reporting Standard SRS 160.0 Defined Benefit Matters (dated July 2013) (SRS 160.0); and Reporting Standard SRS 161.0 Self-Insurance (dated July 2013) (SRS 161.0). However the STC Defined Benefit Matters Policy also notes that as public sector superannuation fund that is not fully funded, STC is exempt from the certain SPS 160.0 provisions.

NSW Pooled Fund – other funding measures

The asset cover for the total Vested Benefit has improved from 70% at 30 June 2015, to 72% at 30 June 2018.

Scheme	Employer Vested Benefits				Contributor Reserves ($m)	Deferred Reserves ($m)	2018 Vested Benefits ($m)	*2015 Vested Benefits ($m)*
	Contributors (m)	Deferred ($m)	Pensioners ($m)[1]	Total ($m)				
SASS	6,507.9	-	1,395.7	7,903.7	4,784.3	2,533.0	15,221.0	*15,463.4*
SSS	1,401.3	249.1	31,724.5	33,374.9	1,163.8	-	34,538.7	*34,632.7*
PSS	586.0	14.4	6,161.9	6,762.2	335.1	-	7,097.3	*7,025.8*
SANCS	1,925.4	-	-	1,925.4	94.2	539.1	2,558.6	*2,906.1*
Total Vested Benefits (A)	**10,420.6**	**263.5**	**39,282.1**	**49,966.2**	**6377.4**	**3,072.1**	**59,415.7**	***60,028.0***
Total Assets (B)				**33,564.7**			**43,014.2**	***41,982.4***
Asset coverage (B/A)				**67%**			**72%**	***70%***

- The asset cover for the total Vested Benefit (excluding Minimum Requisite Benefits underpin) for the Fund has improved from 70% at 30 June 2015, to 72% at 30 June 2018. This is projected to increase to around 73% by 30 June 2021 based on the current contribution level.
- Additionally we have estimated the Minimum Requisite Benefits (MRB)[2] for the Fund to be $54.1bn. The asset coverage of the MRB is 79%. The MRB split, where SANCS amounts have been included within the main Scheme values[3], is as follows: SASS $13.5bn, SSS $33.9bn, PSS $6.7bn.
- Total Vested Benefit with MRB underpin is estimated to be $59.45bn as at 30 June 2018 (estimated MRB impact of $0.04bn). The asset cover is 72%.
- We have also estimated the market value of the pension liabilities. We have done this by allowing for a discount rate of 2.6% p.a. (instead of 7.4% p.a. used for the main results). This discount rate based on the Commonwealth 10 year bond yield. This increases the pensioner liabilities from by 67% from $39.3bn to $65.8bn. Note we have not considered the market value of liabilities relating to future pensioners.

[1] Vested Benefit for deferred and pensioners was taken to be the Past Service Liabilities.

[2] For contributors: the MRB is calculated by the Fund administrators but was not available at the time of writing this report. Instead we estimated the MRB for contributors by rolling forward the 30 June 2017 MRB values provided by the Fund administrators.
For deferred and pensioner: the MRB was taken to be the Past Service Liabilities.

[3] SANCS MRB included in the main Scheme MRB, in line with MRB in administrative data provided ty the Fund administrators.

Reliance

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Reliance and limitations

- This report is not intended to be read or used by anyone other than STC and the NSW State Government.
- We prepared this report solely for STC's use and benefit in accordance with our engagement contract with STC dated 28 April 2017. In doing so, we acted exclusively for STC and considered no-one else's interests.
- We accept no responsibility, duty or liability:
  - to anyone other than STC in connection with this report
  - to STC for the consequences of using or relying on it for a purpose other than that referred to above.
- We make no representation concerning the appropriateness of this report for anyone other than STC. If anyone other than STC chooses to use or rely on it they do so at their own risk.
- This disclaimer applies:
  - to the maximum extent permitted by law and, without limitation, to liability arising in negligence or under statute; and
  - even if we consent to anyone other than STC receiving or using this report.
- Past performance is no guarantee of future performance and investment markets are volatile. PricewaterhouseCoopers Securities Pty Ltd does not guarantee that any specific level of returns will be achieved.
- The advice contained in this report is based on the circumstances of the NSW Pooled Fund as a whole. It does not take into account the specific circumstances of any individual.
- All reasonable care has been taken to provide member and investment data that is accurate. However, we have relied on a range of external sources for data. In particular we have relied on membership data provided by the Scheme administrators and summarised in Section 5, as well as asset data summarised in Section 6, and reconciled with the audited net assets in the financial statements. We have carried high level reasonableness checks however we are unable to guarantee the accuracy of the data contained in this report.
- This report must be read in its entirety. Individual sections of this report could be misleading if considered in isolation from each other.

Appendices

Summary of benefit design

A

SASS benefit design

The benefits provided by SASS are set out in the State Authorities Superannuation Act 1987 and are summarised below:

Membership and contributions

- Many previously existing public sector schemes were transferred into SASS between 1988 and 1990. Some members retained benefits under previous fund, which differ from standard SASS benefits
- Closed to new members on 19 December 1992
- Benefit accrual ceases at age 70
- Members contribute between 1% – 9% of salary
- Members accrue 1/12th of a benefit point for every 1% of salary contributed for a whole month, up to an average of 6 benefit points for each year of membership and up to an overall maximum of 180
- SASS is a Hybrid scheme – the member's personal account is accumulation style. Employer financed benefit is a defined benefit

Death and Invalidity benefits

- Lump sum consisting of:

  CFB + EFB calculated at higher of final salary or FAS x accrued benefit points x 2.5% (3% for ex-SPSSF members)
- Benefit may be increased if member had Additional Benefit Cover and either die or becomes totally and permanently incapacitated before age 58 and prior to the reaching maximum 180 points
- Members of some of the previous schemes transferred into SASS have a pension option available if medically retired under Total and Permanent Invalidity (TPI) or upon death in service
- Child pensions are payable to eligible children of some of the previous schemes that transferred into SASS upon the death of the member in service

Retirement benefit

- Available from age 58 (some members age 55)
- Lump sum benefit consisting of:
  - Contributor Financed Benefit (CFB) (accumulation of members contributions adjusted with interest) +
  - Employer Financed Benefit (EFB) defined benefit lump sum calculated at FAS x accrued benefit points x 2.5% (3% for ex-SPSSF members)
- FAS is final average salary (using exit salary and previous 2 years annual review)
- Members of some previous schemes transferred into SASS have a pension option available on retirement on or after age 60

Retrenchment benefit

- At age 58 and over, retirement benefit paid
- If under age 58, lump sum consisting of:

  CFB + EFB calculated at higher of final salary or FAS x accrued benefit points x 2.5% (3% for ex-SPSSF members)

Resignation benefit

- For members with 10 years or more in SASS (i.e. all current contributors):
  - CFB + EFB calculated as up to 2.5% of the CFB for each year of scheme membership (limited to the maximum benefit that an average contribution rate of 6% attracts)
  - Paid immediately subject to preservation rules and other early release conditions
  - If you resign from employment, and do not wish for your benefit to be paid immediately, you have the option to defer your benefit, to be paid at a later date
- Deferral:
  - Option of either the resignation benefit above **or**
  - Deferred benefit consisting of CFB + EFB calculated as FAS x accrued benefit points x 2.5%, (3% for ex-SPSSF members) reduced by a discount factor (currently 0.99 or 1% pa) to take account of the period of time by which the date of exit precedes the retirement age
  - Deferral benefit payable from age 58, Death, TPI or other release conditions
  - Once deferred, the member may elect at any time to take their immediate lump sum benefit (resignation/withdrawal) adjusted with investment earnings and administration fees. If the immediate lump sum is paid, DB benefit is no longer payable
  - Member can elect what investment strategy to be applied to CFB and EFB portion of DB while deferred

All benefits, except for the death benefit, are reduced for the impact of contribution tax for the period of service since the taxable date (1 July 1988). For more details, refer to the State Authorities Superannuation Act 1987 and SASS Factsheets on the State Super website. As noted on page 3, the Fund legislation in relation to death benefits is currently under review following the removal, by the government, of the anti-detriment provision for superannuation funds.

SSS benefit design

The benefits provided by SSS are set out in the Superannuation Act 1916 and are summarised below:

Membership and contributions

- Closed to new members from 1 July 1985
- Benefit accrual ceases at age 70
- Members are entitled to units of pension based on salary and an allowance for CPI
- Compulsory contributions determined by salary at Annual Review Date. Units are picked up each year at a different rate depending on age and the sex of the member.

Pensions

- All pensions (aside from spouse/child pensions) are reversionary. Reversionary pension is two-thirds of the member's original pension (before any commutation) on the member's death adjusted with CPI
- Pensioners can commute all or part of their pension once, but have multiple chances to do so (at pension commencement if 55 or over and at 60)
- Commutation does not affect the spouse's entitlement to a reversionary pension (they still receive two-thirds of the member's original pension before any commutation)
- Pensions are paid fortnightly and are indexed every October in line with CPI at June

Retirement benefit

- Available from age 55
- Pension based on units
- For retirement between ages 55 up to 60 (except for females with a specified normal retirement age of 55) pension benefit is reduced based on service
- If a member has retired due to invalidity at any age, they are entitled to an immediate pension equivalent to the full retirement benefit they were contributing to as at their exit date

Death benefit

- Pension to eligible spouse equivalent to two-thirds of member's pension
- Child pensions paid to each eligible child/student
- Guaranteed minimum benefit of the lump sum resignation benefit applies (e.g. no spouse)

Retrenchment benefit

- If age 55 and over, retirement pension paid
- If under age 55:
  - Retrenchment lump sum benefit based on units (adjusted to reflect non-payment of contributions due to shorter service), service and age (no further benefit payable from the scheme if this option is taken)
  - Deferred pension based on units (adjusted to reflect non-payment of contributions due to shorter service) and service. Payable from age 55, death, TPI or other release conditions.
  - Retrenchment pension (s.37B option calculated by MAS) if aged between 50 – 55 (subject to agreement from the employer). Employer and employee agree to pay contributions up to age 55. Pension is paid from age 55

Resignation benefit

- If under age 55:
  - Immediate lump sum benefit of multiple of accumulation of personal contributions paid based on service
  - Deferred pension benefit based on units (adjusted to reflect non-payment of contribution due to shorter service) and service. Employer portion of pension indexed to CPI. Payable from age 55, death or TPI.
- If age 55 and over, retirement pension paid

All benefits are reduced for the impact of contribution tax for the period of service since the taxable date (1 July 1988). For more details, refer to the Superannuation Act 1916 and SSS Factsheets on the State Super website.

PSS benefit design

The benefits provided by PSS are set out in the Police Regulation (Superannuation) Act 1906 and are summarised below:

Membership and contributions

- Closed to new members on 1 April 1988
- Benefit accrual ceases at age 70
- Members contribute 6% of salary

Pensions

- All pensions (aside from spouse/child pensions) are reversionary, and spouse pension is 62.5% of the member's pension paid at the time of death (spouse is not entitled to any proportion of the member's pension that has been commuted previously)
- Pensioners can commute all or part of their pension once, but have multiple chances to do so (at pension commencement if age 55 and over and at age 60)
- HOD pensioners can also apply for a lump sum based on the prescribed portion of their pension under s.10C
- Pensions paid fortnightly and indexed every October in line with CPI at June

Retirement benefit

- Available from age 55
- Pension benefit based years of service and final salary
- Retirement between age 55 up to 59, pension is reduced based on age

Invalidity benefit

- If not HOD and less than 20 years' service, lump sum paid equal to twice members salary at time of retirement
- If not HOD and more than 20 years service full time service, pension is a percentage of salary at exit (percentage based on years of service)
- If HOD, pension benefit is a percentage of final salary between 72.75% to 100% as determined by the Police Superannuation Advisory Committee (PSAC). Due to current legal considerations and for conservatism, we have assumed all HOD pensioners receive 100% of salary which is consistent with the assumption in 2015 Triennial Review

Death benefit

- Death in service not due to HOD, lump sum benefit based on final salary and years of service to age 55
- If death in service due to HOD, eligible spouse receives a pension benefit of a percentage of the member's salary between 55% and 62.5% at STC's discretion. For conservatism, we have assumed all death in service spouse pensions will be paid at 62.5% of salary which is consistent with the assumption in 2015 Triennial Review
- Additional child pensions paid to each eligible child
- A gratuity lump sum is paid to the deceased dependants in line with the Workers Compensation Act as determined by STC.

Resignation benefit

- Immediate lump sum benefit of accumulation of member's contributions plus interest
- Can opt to defer benefit until a later date.
- Deferred lump sum benefit calculated as the greater of 2.5 times member contributions without interest and early retirement benefit discounted for age at exit. This benefit is adjusted with CPI, payable from age 55 or upon death or TPI
- Once deferred, member can opt to take either the immediate lump sum or deferred lump sum benefit (if over age 55)

All benefits, except for the Not Killed on Duty death benefit, are reduced for the impact of contribution tax for the period of service since the taxable date (1 July 1988). For more details, refer to the Police Regulation (Superannuation) Act 1906 and PSS Factsheets on the State Super website. As noted on page 3, the Fund legislation in relation to death benefits is currently under review following the removal, by the government, of the anti-detriment provision for superannuation funds.

SANCS benefit design

The benefits provided by SANCS are set out in the State Authorities Non-Contributory Superannuation Act 1987 and are summarised below:

Membership and contributions	Benefits	Minimum Requisite Benefit
• All members of SASS, SSS and PSS are also members of SANCS, with the exception of Sydney Grammar School • Members do not contribute towards SANCS • Other contributions (Government co-contributions, Additional Employer Contributions) are credited to the member's accumulation account	• SANCS benefits are paid or deferred at the same time as the member's SASS, SSS or PSS benefit. • SANCS benefit calculated at 3% of FAS for each year of service from 1 April 1988 • If exit under age 55 due to retrenchment, death or invalidity, lump sum benefit calculated at 3% of final salary for each year of service from 1 April 1988 • FAS is final average salary (exit salary and previous 2 years annual review) • Member's SANCS benefit is paid out on all exits and is subject to preservation rules • SANCS accumulation account (Government co-contributions, Additional Employer contributions) paid on all exits.	• Sum of SANCS and member's other fund benefits (SASS, SSS or PSS) are subject to the superannuation guarantee minimum. • Any shortfall due is paid from SANCS

All benefits, except for the death benefit, are reduced for the impact of contribution tax for the period of service since the taxable date (1 July 1988). For more details, refer to the State Authorities Non-Contributory Superannuation Act 1987 and factsheets on the State Super website. As noted on page 3, the Fund legislation in relation to death benefits is currently under review following the removal, by the government, of the anti-detriment provision for superannuation funds.

Apportionment of benefits to employer past service liabilities

The approaches taken to apportion future benefit payments between employer past and future service liabilities are summarised below:

Scheme	Benefit	Employer past service liability component of benefit payable t years after valuation date	Notation
SASS	• All benefits	$\frac{ABP_0}{ABP_t}$ × (value of employer financed benefit payable at time t)	• ABP_0 = accrued benefit points at valuation date • ABP_t = accrued benefit points at time t
SSS	• Retirement • Retrenchment • Resignation	$\frac{PS_0}{PS_t}$ × (value of employer financed benefit payable at time t)	• PS_0 = years of service to valuation date, or normal retirement age if earlier • PS_t = years of service to time t, or normal retirement age if earlier • TS = years of service to normal retirement age
	• Death • Invalidity	$\frac{PS_0}{TS}$ × (value of employer financed benefit payable at time t)	
PSS	• Retirement • Resignation	$\frac{PS_0}{PS_t}$ × (value of benefit payable at time t)	• PS_0 = years of service to valuation date, or normal retirement age if earlier • PS_t = years of service to time t, or normal retirement age if earlier • TS = years of service to normal retirement age
	• Death • Invalidity	$\frac{PS_0}{PS_t} \times \frac{min(PS_t, 30)}{min(TS, 30)}$ × (value of benefit payable at time t)	
SANCS	• All benefits	$\frac{PS}{PS + t}$ × (benefit payable at time t) + $\frac{SGPS}{SGPS + t}$ × (SG top-up, if any)	• PS = years of service between 1 April 1988 and valuation date • SGPS = years of service between 1 July 1992 and valuation date

Financial structure of Schemes and reserves

B

Financial structure of Schemes and reserves

The Fund assets are made up of the following reserves:

Reserve	Applicable Scheme	Description
Employer reserve	• All	• The administrator maintains a notional account for each employer[1] in each Scheme to allow tracking of funding and contribution requirements. • Balance of employer contributions and net investment return less benefits, employer contributions tax and administration fees paid. • For SSS and PSS, the balance of member reserve is transferred in on member ceasing employment in the public sector as all benefits are paid from this reserve.
Member reserve	• All	• For each member: Balance of member (contributor) contributions and net investment return less benefits paid or transferred (contributor financed portion). • For SASS, SSS and PSS, the account balance is paid on member ceasing employment to the member, employer reserve or deferred reserve depending on the Scheme and exit type. • For SANCS, contributions includes government co-contributions (disclosed as member reserve for the purpose of this report) and Additional Employer Contributions (for eligible members in line with Superannuation Guarantee increases). • For SASS, Scheme administration fee and member portion of Additional Benefit levy is also payable (if applicable).
Deferred benefits reserve	• SASS • SANCS	• For each deferred member: Transfer in of employer and member reserves when a member defers benefit on ceasing employment. Balance accrues with net investment return less benefits paid.
Death or invalidity reserve	• SASS	• Balance of member paid Additional Benefits levy and net investment return less benefit payment of the member financed portion of Additional Benefits.

- Assets of the Schemes in the Fund are pooled for investment and related purposes such as tax calculations.
- Member investment choice is applicable to the SASS member reserve and member and employer portion of SASS deferred benefits reserve.

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[1] A single account is maintained for all Part 3 employers (public health organisations).

Additional information on funding provisions and Crown guarantee

C

Legislative provisions covering employer contributions

We have summarised below legislative provisions covering employer contributions for each Scheme.

Scheme	Legislative provisions	Reference
SASS Part 1 (The Crown and other employers)	"...the employer shall pay to the Fund an amount equal to a multiple of the contributions payable to the Fund by the contributor, being a multiple determined by STC, in relation to the employer, with the concurrence of the Treasurer." "Despite any other provision of this Part, STC may determine that the contributions payable by an employer specified in Part 1 of Schedule 1[1] in respect of a contributor are to be determined, or are payable, on a basis other than that set out in this Part. STC may only make such a determination with the concurrence of the Treasurer."	• State Authorities Superannuation Act 1987 – Part 4, Section 31 • State Authorities Superannuation Act 1987 – Part 4, Section 34A
SASS Part 3 (Public health organisations)	"...the employer shall pay to the Fund an amount equal to 1.0 (or such higher number as may be prescribed with the concurrence of the Treasurer) times the contributions payable to the Fund by the contributor while employed by the employer."	• State Authorities Superannuation Act 1987 – Part 4, Section 33
SSS	"(1) An employer listed in Schedule 3[1] must pay to the Fund in respect of each contributor that the employer employs an amount equal to a specified multiple of the contributions payable to the Fund by that contributor. (2) The specified multiple referred to in subsection (1) is a multiple that STC, with the concurrence of the Treasurer, periodically fixes in respect of the employer concerned"	• Superannuation Act 1916 – Division 7, Section 10AJ
PSS	No specific provisions	
SANCS	"...the employer shall pay to STC an amount equal to a percentage of the salary of the employee, being a percentage determined by STC, in relation to the employer, with the concurrence of the Treasurer."	• State Authorities Non-Contributory Superannuation Act 1987 – Part 3, Section 14

[1] Schedule 1 of the State Authorities Superannuation Act 1987 and Schedule 3 of the Superannuation Act 1916 both list employers for the Fund, which all fall under Part 1 (The Crown and other employers) or Part 3 (Public health organisations) of these schedules.

Existence of Crown guarantee

Prior to the 30 June 2012 valuation, the STC Executive obtained legal advice on the existence of any Crown guarantee on benefits. We have set out specific questions and a summary of the legal advice obtained below.

Question	Summary of legal advice obtained by the Trustee
Are the superannuation liabilities of all employers in the Pooled Fund covered by a guarantee of payment by the NSW Government?	• SASS – only in respect of privatised employers and Part 3 (i.e. Public health organisations) employers • SSS – only in respect of privatised employers • PSS – covered • SANCS – only in respect of privatised employers and Part 3 employers.
If the answer to the first question is no, which employers are not covered?	• SASS – no employers are covered except privatised employers and Part 3 employers • SSS – no employers are covered except privatised employers • PSS – not applicable • SANCS – no employers are covered except privatised employers and Part 3 employers
If the sub-fund of an individual employer has no assets, may the Trustee continue to pay benefits to members of that sub-fund?	• The Scheme Legislation does not empower the Trustee to continue to pay benefits (except for Part 3 employers)
If the sub-fund of an individual employer has no assets, must the Trustee continue to pay benefits to members of that sub-fund?	• The Scheme Legislation does not empower the Trustee to continue to pay benefits (except for Part 3 employers)

Current actuarial certificates

D

Appendix D – Current actuarial certificates

Below is a list of current actuarial certificates for STC.

Certificate	Certificate date	Effective period	Replacement date
Benefit certificate	13 June 2014	1 April 2014 to 31 March 2019	To be signed before 15 May 2019
Income Tax Assessment Act Section 295-390 Actuarial Certificate **Exemption of proportion of income attributable to current pension liabilities**	28 August 2018	The year of income covered by certificate is 1 July 2017 to 30 June 2018	July 2019
Income Tax Assessment Act Section 295-465(3) Actuarial Certificate **Deduction for Cost of providing Death and Disablement Funds**	30 July 2018	The year of income covered by certificate is 1 July 2017 to 30 June 2018	July 2019

Funding position by Sector and Scheme

E

General Government funding position

Employer past service liabilities are $42.6bn. Asset coverage has improved from 66% at 30 June 2015, to 70% at 30 June 2018.

Scheme	**Employer Past Service Liabilities (Accrued Benefits)**				**Contributor Reserve ($m)**	**Deferred Reserve[1] ($m)**	**Total ($m)**
	Contributors ($m)	**Deferred ($m)**	**Pensioners ($m)**	**Total ($m)**			
SASS	4,707.2	-	972.5	5,679.7	3,830.5	2,533.0	12,043.3
SSS	1,224.0	193.4	27,008.7	28,426.1	1,013.4	-	29,439.6
PSS	933.8	14.4	6,161.9	7,110.1	335.1	-	7,445.2
SANCS	1,371.1	-	-	1,371.1	88.5 [2]	539.1	1,998.7
Total Past Service Liabilities	8,236.2	207.8	34,143.0	42,587.0	5,267.6	3,072.1	50,926.7

	2018			
Scheme	**Employer Past Service Liabilities ($m) A**	**Employer Reserve ($m) B**	**Employer Unfunded Liabilities ($m) B-A**	**Asset coverage B/A**
SASS	5,679.7	4,103.9	(1,575.8)	72%
SSS	28,426.1	19,841.5	(8,584.6)	70%
PSS	7,110.1	4,565.3	(2,544.8)	64%
SANCS	1,371.1	1,096.9	(274.2)	80%
2018 Total	42,587.0	29,607.6	(12,979.3)	70%
2015 Total	*41,746.7*	*27,627.4*	*(14,119.3)*	*66%*

[1] All deferred reserves have been counted under General Government, consistent with treatment in 2015 Triennial Review

[2] Surcharge accounts have been included in SANCS Contributor Reserve

Universities funding position

Employer past service liabilities are $3.5bn. Asset coverage is 15% at 30 June 2018, reflecting the part pay-as-you-go funding approach backed by the Commonwealth and NSW governments.

Scheme	Employer Past Service Liabilities (Accrued Benefits)				Contributor Reserve ($m)	Deferred Reserve[1] ($m)	Total ($m)
	Contributors ($m)	Deferred ($m)	Pensioners ($m)	Total ($m)			
SASS	218.2	-	10.2	228.5	157.7	-	386.1
SSS	50.7	24.5	3,181.1	3,256.3	41.0	-	3,297.4
PSS	-	-	-	-	-	-	-
SANCS	55.0	-	-	55.0	(0.4) [2]	-	54.6
Total Past Service Liabilities	323.9	24.5	3,191.4	3,539.8	198.3	-	3,738.0

	2018			
Scheme	Employer Past Service Liabilities ($m) A	Employer Reserve ($m) B	Employer Unfunded Liabilities ($m) B-A	Asset coverage B/A
SASS	228.5	173.1	(55.3)	76%
SSS	3,256.3	360.5	(2,895.8)	11%
PSS	-	-	-	-
SANCS	55.0	10.7	(44.3)	19%
2018 Total	3,539.8	544.3	(2,995.5)	15%
2015 Total	*3,736.4*	*828.2*	*(2,908.2)*	*22%*

[1] All deferred reserves have been counted under General Government, consistent with treatment in 2015 Triennial Review

[2] Surcharge accounts have been included in SANCS Contributor Reserve

PTEs/Other funding position

Employer past service liabilities are $3.4bn. Asset coverage has improved from 97% at 30 June 2015, to 100% at 30 June 2018.

Scheme	Employer Past Service Liabilities (Accrued Benefits)				Contributor Reserve ($m)	Deferred Reserve[1] ($m)	Total ($m)
	Contributors ($m)	Deferred ($m)	Pensioners ($m)	Total ($m)			
SASS	1,054.6	-	413.0	1,467.6	796.1	-	2,263.7
SSS	143.4	31.3	1,534.7	1,709.4	109.3	-	1,818.7
PSS	-	-	-	-	-	-	-
SANCS	234.1	-	-	234.1	6.1 [2]	-	240.1
Total Past Service Liabilities	1,432.1	31.3	1,947.7	3,411.1	911.5	-	4,322.5

	2018			
Scheme	Employer Past Service Liabilities ($m) A	Employer Reserve ($m) B	Employer Unfunded Liabilities ($m) B-A	Asset coverage B/A
SASS	1,467.6	1,347.9	(119.7)	92%
SSS	1,709.4	1,860.7	151.3	109%
PSS	-	-	-	-
SANCS	234.1	204.2	(29.9)	87%
2018 Total	3,411.1	3,412.8	1.7	100%
2015 Total	*3,407.4*	*3,308.8*	*(98.6)*	*97%*

[1] All deferred reserves have been counted under General Government, consistent with treatment in 2015 Triennial Review

[2] Surcharge accounts have been included in SANCS Contributor Reserve

Additional information relating to Universities

F

Alternative valuation for Universities

University liabilities valued on a long term cash basis instead of the valuation basis increases the employer past service liabilities by $1.5bn, or 41%.

Investment return/discount rate assumption	2018 valuation basis	Cash basis
Non-pensioner	6.4% p.a.	2.9% p.a.
Pensioner	7.4% p.a.	3.4% p.a.

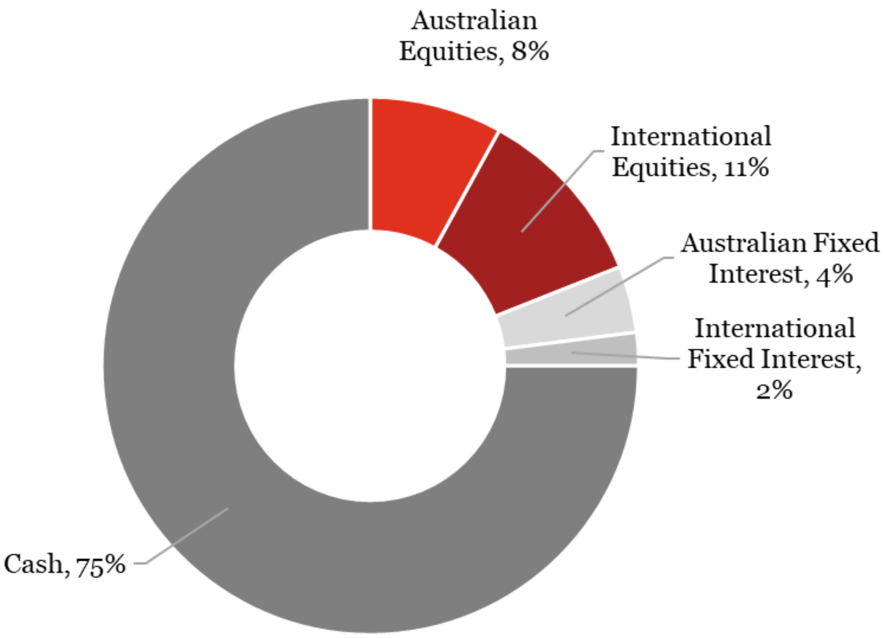
Scheme	2018 Valuation basis		Alternative cash basis	
	Total Past Service Liabilities ($m)	Employer Past Service Liabilities ($m)	Total Past Service Liabilities ($m)	Employer Past Service Liabilities ($m)
SASS	386.1	228.5	426.4	268.8
SSS	3,297.4	3,256.3	4,700.0	4,659.0
SANCS	54.6	55.0	63.1	63.6
Total	**3,738.0**	**3,539.8**	**5,189.5**	**4,991.3**

- The University Sector is funded on a pay-as-you-go basis[1], as such the University Employer Reserve assets are currently invested conservatively in the University Conservative Diversified and the University Cash investment options.
- The University Sector accounts for 7% of the total Employer Past Service Liabilities (based on the 2018 valuation basis). In the main reporting we have valued the liabilities using the same discount rate as the other Sectors at 6.4% p.a. for non-pensioners and 7.4% p.a. for pensioners.
- If we were to value the University employer past service liabilities using a discount rate consistent with a long term cash portfolio, the liabilities would increase by $1.5bn or 41%.
- However given that the liabilities are funded on a pay-as-you-go basis, this is provided for information only.

[1] The Commonwealth and NSW Governments entered into a Memorandum of Understanding (MoU) in December 2014. Under this the Commonwealth and NSW Governments have agreed to assist the universities with their unfunded superannuation liabilities through the provision of funds on a 78/22 per cent basis respectively. The universities will continue to contribute at their current rate of 17% of salaries per annum and further additional contributions in respect of 'Excess salaries' as set out in the MoU. The Commonwealth and NSW Governments will make payments to the Fund on a pay-as-you-go basis with the aim of maintaining a 1-year asset buffer at all times to meet expected benefit payments. A similar arrangement is in place for University of NSW (UNSW) Australian Defence Force Academy (ADFA), under which pay-as-you-go contributions are funded by UNSW, with the aim of maintaining a 3-year asset buffer.

Investment Portfolio – University Conservative Diversified

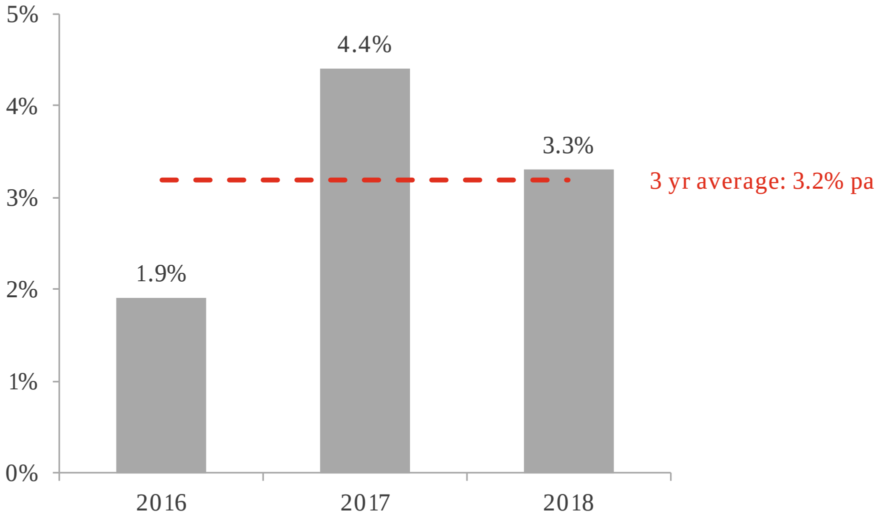
Strategic Asset Allocation as at 1 July 2018 [1]



Investment Objectives

- Target is return of CPI + 0.5% p.a. over a rolling 4 year period

Investment Returns (post superannuation tax and pre-ECPI) [2]



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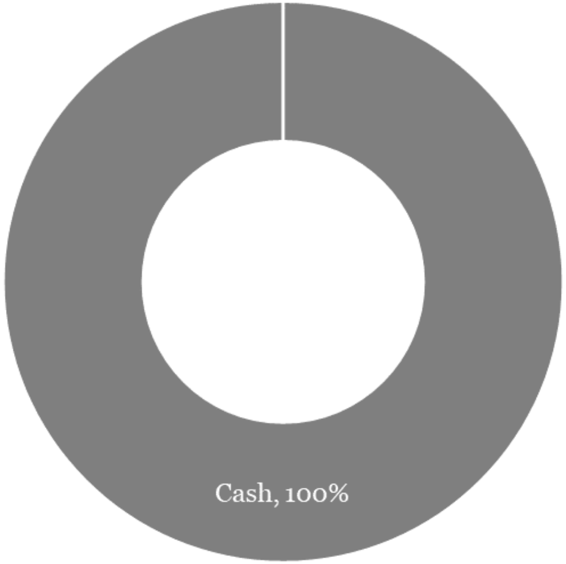
[1] Source: State Super website, as approved by the Board in June 2018.

[2] Investment returns in this chart are net of superannuation tax and fees, and before any increase due to exempt current pension income (ECPI).

Investment Portfolio – University Cash

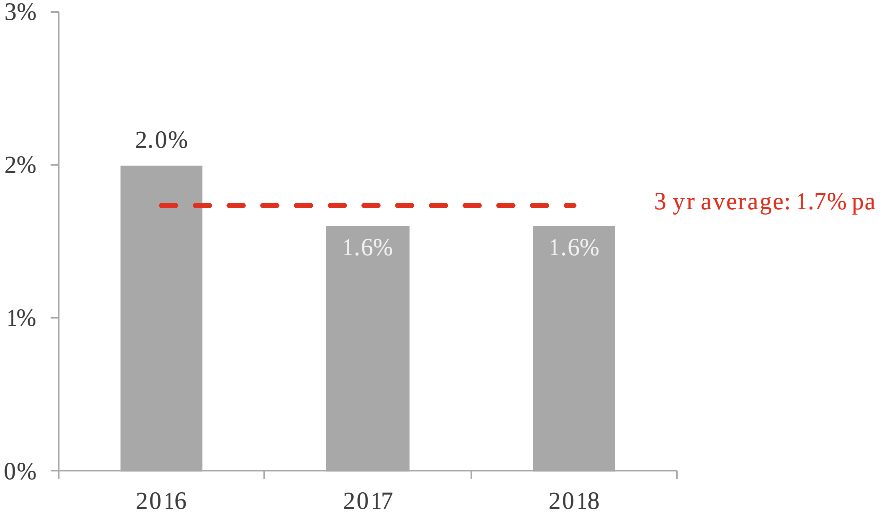
Strategic Asset Allocation as at 1 July 2018 [1]



Investment Objectives

- Target is return of cash p.a. over a rolling 3 year period

Investment Returns (post superannuation tax and pre-ECPI) [2]



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[1] Source: State Super website, as approved by the Board in June 2018.

[2] Investment returns in this chart are net of superannuation tax and fees, and before any increase due to exempt current pension income (ECPI).

Theoretical future service rates

G

Theoretical future service rates

The theoretical employer future service contribution rates as a percentage of salary calculated under the “Attained Age Normal” method and is set out below.

As at 30 June 2018		SASS	SSS	PSS	SANCS	Total
Employer Total Service Liability – contributors ($m)	**A**	6,689.0	1,484.7	1,025.5	1,939.8	11,138.9
Employer Past Service Liability – contributors ($m)	**B**	5,980.0	1,418.2	933.8	1,660.1	9,992.2
Employer Future Service Liability – contributors ($m)	**C = A - B**	709.0	66.5	91.7	279.6	1,146.7
Present value of 1% of future salary ($m)	**D**	112.7	8.8	3.9	125.4	
2018 employer future service contribution rate (% of salary)	**(C / D) / 0.87[1] (%)**	**7.2%**	**8.7%**	**26.9%**	**2.6%**	
2015 employer future service contribution rate (% of salary)		**8.2%**	**10.3%**	**26.5%**	**2.7%**	

- The “Attained Age Normal” method determines the contribution rate required to fund future service benefit accrual over the future working life of the contributors in the Fund. The calculation of the employer future service rate is set out above.
- The employer future service contribution rates have decreased since 2012 for SASS, SSS and SANCS and increased for PSS. Items that influence the rate includes:
  - Changes in the profile of the members considered in the future service rate.
  - Maximum benefit accrual – the rate will tend to decrease as contributors get closer to their maximum benefit accrual.
  - Any change in assumptions which impact the future service liability and present value of 1% of future salary.
  - Changes in the member reserves – for SSS members, changes in the members reserves can impact the employer future service contribution rate.
- The employer deficit on the total service liabilities can be calculated as the deficit on the employer past service liabilities of $15,973.1m (see Section 1) plus the employer future service liability of $1,146.7m (above), to give a total of $17,119.8m.

[1] Division by 0.87 in order to gross the results up to be on a pre contribution tax basis. Contribution tax is assumed to be 13%, and is net of tax deductions for expenses and premiums.

Membership movements by Scheme

H

SASS membership movements

SASS membership decreased by 18.9% from 43,073 to 34,916

	Contributors	Deferreds	Pensioners	Total
30 June 2015	28,552	10,354	4,167	43,073
Exits[1]	7,618 ^	2,141	579	10,338
New entrants	11 [2]	1,303	867 [3]	2,181
30 June 2018	**20,945**	**9,516**	**4,455**	**34,916**
Change	(26.6%)	(8.1%)	6.9%	(18.9%)

^ See breakdown of contributor exits on the right

	Contributor exits breakdown
Deaths	81
Disablement	174
Resignations	430
Retirements	6,344
Retrenchments	589
Total	**7,618**

- The table above shows the membership movements for SASS.
- SASS has seen the largest decrease in membership (18.9% decrease) which is a result of SASS members generally receiving a lump sum at retirement and ceasing to be members of the Fund.

[1] Includes projected Scheme exits between data date (30 April 2018) and valuation date (30 June 2018), but does not include movements between membership types during this 2 month projection period.
[2] Analysis of data showed 11 new entrants into contributors. These relate to reinstatements of members rather than genuine new entrants.
[3] New entrants into pensioners include spouse pensions commencing following the death of original pensioner.

SSS membership movements

SSS membership decreased by 4.1% from 79,439 to 76,174

	Contributors	Deferreds	Pensioners[1]	Total
30 June 2015	7,113	1,551	70,775	79,439
Exits [2]	3,938 ^	827	4,916	9,681
New entrants	-	233	6,183 [3]	6,416
30 June 2018	**3,175**	**957**	**72,042**	**76,174**
Change	(55.4%)	(38.3%)	1.8%	(4.1%)

^ See breakdown of contributor exits on the right

	Contributor exits breakdown
Deaths	13
Disablement	130
Resignations	34
Retirements	3,742
Retrenchments	19
Total	**3,938**

- The table above shows the membership movements for SSS.
- The contributor membership has decreased significantly by 3,938 or 55.4% p.a.

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[1] Includes fully commuted pensioners.

[2] Includes projected Scheme exits between data date (30 April 2018) and valuation date (30 June 2018), but does not include movements between membership types during this 2 month projection period.

[3] New entrants into pensioners include spouse pensions commencing following the death of original pensioner.

PSS membership movements

Overall membership decrease of 4.3% from 7,944 to 7,605

	Contributors	Deferreds	Pensioners	Total
30 June 2015	1,275	114	6,555	7,944
Exits [1]	359 ^	30	403	819
New entrants	-	-	453 [2]	480
30 June 2018	**916**	**84**	**6,605**	**7,605**
Change	(28.2%)	(26.3%)	0.8%	(4.3%)

^ See breakdown of contributor exits on the right

	Contributor exits breakdown
Deaths	1
Disablement	278
Resignations	-
Retirements	80
Total	**359**

- The table above shows the membership movements for PSS.
- Almost 80% of PSS contributor exits (278 out of 359) over the period from 30 June 2015 to 30 June 2018 were due to disablement.

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[1] Includes projected Scheme exits between data date (30 April 2018) and valuation date (30 June 2018), but does not include movements between membership types during this 2 month projection period.

[2] New entrants into pensioners include spouse pensions commencing following the death of original pensioner.

Summary of demographic assumptions

I

Non age-based assumptions

Assumptions applying to all schemes

	Age difference (member age less spouse age)
Male member	4
Female Member	-2

Commutation assumptions	Proportion opting to take lump sum		Proportion opting to take pension	
	SSS	PSS	SASS	
Current contributor on becoming a new pensioner	5%	0%	60%	Note: this is only applied to SASS contributors with pension options at retirement
Current deferred on becoming a new pensioner	5%	0%	N/A	
Current original pensioner	5%	0%	N/A	
Current and new spouse pensioner	40%	0%	N/A	

Note that for SASS members eligible for pension benefits, they forfeit pension rights if they chose to defer benefits.

Retrenchment assumptions

Year ending 30 June	General Government Sector		PTEs		Other Employers	
			<ERA	>ERA		
	SASS	SSS	SASS/SSS	SASS/SSS	SASS	SSS
2018	0.4%	0.7%	1.5%/nil	18.5%	1.5%	nil
2019	1.1%	1.1%	1.5%/nil	6.7%	1.5%	nil
2020	1.2%	1.2%	1.5%/nil	7.1%	1.5%	nil
2021	1.3%	1.3%	1.5%/nil	7.2%	1.5%	nil
2022	1.4%	1.4%	1.5%/nil	7.7%	1.5%	nil
Thereafter	1.5%	nil	1.5%/nil	1.5%/nil	1.5%	nil

Other SASS assumptions	After reaching maximum contribution rate
Maintain current contribution rate	80%
Reduce contribution rate to 1%	20%

Note: ERA = Early Retirement Age

SASS contributor decrements

	SASS contributors																			
	Death		TPI (non-police)		TPI (police)		PPI (non-police)		PPI (police)		Retirement (Part 1 employers)		Retirement (Part 3 employers)		Resignation (Part 1 employers)		Resignation (Part 3 employers)		Deferral on resignation	
Age nearest	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
35	0.0004	0.0002	0.0007	0.0002	0.0201	0.0201	0.0028	0.0006	0.0134	0.0134					0.0147	0.0161	0.0223	0.0292	85%	85%
36	0.0004	0.0002	0.0007	0.0003	0.0201	0.0201	0.0028	0.0009	0.0134	0.0134					0.0137	0.0151	0.0215	0.0268	85%	85%
37	0.0004	0.0002	0.0008	0.0003	0.0201	0.0201	0.0032	0.0009	0.0134	0.0134					0.0126	0.0144	0.0203	0.0244	85%	85%
38	0.0004	0.0002	0.0008	0.0003	0.0201	0.0201	0.0032	0.0009	0.0134	0.0134					0.0116	0.0137	0.0192	0.0221	85%	85%
39	0.0004	0.0002	0.0008	0.0003	0.0201	0.0201	0.0032	0.0009	0.0134	0.0134					0.0109	0.0130	0.0185	0.0202	85%	85%
40	0.0005	0.0003	0.0009	0.0003	0.0201	0.0201	0.0036	0.0009	0.0134	0.0134					0.0105	0.0123	0.0177	0.0186	85%	85%
41	0.0005	0.0003	0.0009	0.0004	0.0201	0.0201	0.0036	0.0012	0.0134	0.0134					0.0102	0.0116	0.0170	0.0175	85%	85%
42	0.0005	0.0003	0.0010	0.0005	0.0221	0.0221	0.0040	0.0015	0.0147	0.0147					0.0098	0.0109	0.0160	0.0168	85%	85%
43	0.0006	0.0003	0.0010	0.0005	0.0234	0.0234	0.0040	0.0015	0.0156	0.0156					0.0095	0.0102	0.0151	0.0165	85%	85%
44	0.0006	0.0004	0.0012	0.0007	0.0241	0.0241	0.0048	0.0021	0.0161	0.0161					0.0091	0.0095	0.0141	0.0161	85%	85%
45	0.0006	0.0004	0.0011	0.0008	0.0250	0.0250	0.0044	0.0024	0.0166	0.0166					0.0088	0.0095	0.0132	0.0161	85%	85%
46	0.0007	0.0004	0.0011	0.0010	0.0250	0.0250	0.0039	0.0025	0.0167	0.0167					0.0084	0.0095	0.0126	0.0161	85%	85%
47	0.0007	0.0005	0.0011	0.0011	0.0253	0.0253	0.0039	0.0028	0.0169	0.0169					0.0083	0.0096	0.0120	0.0161	85%	85%
48	0.0008	0.0005	0.0013	0.0013	0.0261	0.0261	0.0046	0.0033	0.0174	0.0174					0.0081	0.0097	0.0113	0.0161	85%	85%
49	0.0009	0.0005	0.0015	0.0015	0.0271	0.0271	0.0053	0.0038	0.0180	0.0180					0.0080	0.0099	0.0110	0.0161	85%	85%
50	0.0009	0.0006	0.0018	0.0018	0.0301	0.0301	0.0063	0.0045	0.0200	0.0200					0.0078	0.0101	0.0106	0.0161	85%	95%
51	0.0010	0.0006	0.0019	0.0021	0.0305	0.0305	0.0029	0.0024	0.0204	0.0204					0.0077	0.0103	0.0103	0.0161	85%	95%
52	0.0011	0.0007	0.0023	0.0025	0.0316	0.0316	0.0035	0.0029	0.0210	0.0210					0.0076	0.0105	0.0099	0.0161	85%	95%
53	0.0012	0.0007	0.0026	0.0028	0.0331	0.0331	0.0039	0.0032	0.0220	0.0220					0.0074	0.0109	0.0097	0.0161	90%	95%
54	0.0012	0.0008	0.0029	0.0032	0.0385	0.0385	0.0044	0.0037	0.0256	0.0256					0.0073	0.0119	0.0095	0.0161	95%	95%
55	0.0014	0.0008	0.0033	0.0036	0.0442	0.0442	0.0050	0.0041	0.0294	0.0294					0.0071	0.0130	0.0095	0.0161	95%	100%
56	0.0015	0.0009	0.0036	0.0039	0.0574	0.0574	0.0054	0.0045	0.0383	0.0383					0.0070	0.0140	0.0094	0.0161	100%	100%
57	0.0016	0.0010	0.0039	0.0043	0.0619	0.0619	0.0059	0.0049	0.0413	0.0413	0.0250	0.0500	0.0250	0.0250	0.0069	0.0140	0.0093	0.0161	100%	100%
58	0.0017	0.0011									0.0600	0.1100	0.0750	0.0750						
59	0.0019	0.0012									0.0850	0.1100	0.1000	0.0750						
60	0.0021	0.0013									0.1850	0.1850	0.1750	0.1750						
61	0.0024	0.0015									0.1850	0.1600	0.1000	0.1250						
62	0.0026	0.0016									0.1850	0.1600	0.1000	0.1250						
63	0.0029	0.0018									0.1850	0.1600	0.1000	0.1250						
64	0.0032	0.0019									0.3100	0.2850	0.2000	0.2500						
65	0.0036	0.0021									0.4350	0.3850	0.4500	0.4000						
66	0.0039	0.0023									0.3650	0.2350	0.2750	0.3000						
67	0.0043	0.0025									0.2950	0.2350	0.2750	0.3000						
68	0.0048	0.0028									0.2250	0.2350	0.2750	0.3000						
69	0.0052	0.0031									0.5850	0.5850	0.7000	0.6000						
70											1.0000	1.0000	1.0000	1.0000						

Other contributor decrements

	SSS contributors							PSS contributors										Promotional salary scales (for all contributors)
	Death		Invalidity		Retirement			Death (not killed on duty)		Death (killed on duty)		Invalidity (not hurt on duty)		Invalidity (hurt on duty)		Retirement		
Age nearest	Male	Female	Male	Female	Male	Female 55	Female 60	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male and Female
35	0.0004	0.0002																2.4%
36	0.0004	0.0002																2.3%
37	0.0004	0.0002																2.2%
38	0.0004	0.0002																2.1%
39	0.0004	0.0002																2.0%
40	0.0005	0.0003																1.8%
41	0.0005	0.0003	0.0058	0.0024				0.0005	0.0003	0.0002	0.0002	0.0035	0.0035	0.0600	0.0600			1.6%
42	0.0005	0.0003	0.0063	0.0027				0.0005	0.0003	0.0002	0.0002	0.0043	0.0043	0.0650	0.0650			1.4%
43	0.0006	0.0003	0.0067	0.0033				0.0006	0.0003	0.0002	0.0002	0.0050	0.0050	0.0680	0.0680			1.2%
44	0.0006	0.0004	0.0075	0.0039				0.0006	0.0004	0.0002	0.0002	0.0062	0.0062	0.0680	0.0680			1.0%
45	0.0006	0.0004	0.0084	0.0045				0.0006	0.0004	0.0002	0.0002	0.0076	0.0076	0.0680	0.0680			0.8%
46	0.0007	0.0004	0.0086	0.0058				0.0007	0.0004	0.0002	0.0002	0.0077	0.0077	0.0680	0.0680			0.6%
47	0.0007	0.0005	0.0091	0.0065				0.0007	0.0005	0.0002	0.0002	0.0082	0.0082	0.0680	0.0680			0.4%
48	0.0008	0.0005	0.0105	0.0075				0.0008	0.0005	0.0002	0.0002	0.0095	0.0095	0.0680	0.0680			0.2%
49	0.0009	0.0005	0.0123	0.0088				0.0009	0.0005	0.0002	0.0002	0.0111	0.0111	0.0680	0.0680			
50	0.0009	0.0006	0.0144	0.0103				0.0009	0.0006	0.0002	0.0002	0.0151	0.0151	0.0700	0.0700			
51	0.0010	0.0006	0.0151	0.0108				0.0010	0.0006	0.0001	0.0001	0.0159	0.0159	0.0700	0.0700			
52	0.0011	0.0007	0.0156	0.0112				0.0011	0.0007	0.0001	0.0001	0.0176	0.0176	0.0700	0.0700			
53	0.0012	0.0007	0.0179	0.0128				0.0012	0.0007	0.0001	0.0001	0.0201	0.0201	0.0700	0.0700			
54	0.0012	0.0008	0.0201	0.0144				0.0012	0.0008	0.0001	0.0001	0.0241	0.0241	0.0800	0.0800			
55	0.0014	0.0008	0.0224	0.0160	0.0390	0.6700	0.0300	0.0014	0.0008	0.0001	0.0001	0.0286	0.0286	0.0900	0.0900			
56	0.0015	0.0009	0.0246	0.0176	0.0200	0.3300	0.0300	0.0015	0.0009	0.0001	0.0001	0.0332	0.0332	0.1250	0.1250			
57	0.0016	0.0010	0.0268	0.0192	0.0275	0.1750	0.0300	0.0016	0.0010	0.0001	0.0001	0.0382	0.0382	0.1300	0.1300			
58	0.0017	0.0011	0.0291	0.0208	0.0450	0.2400	0.0380	0.0017	0.0011	0.0001	0.0001	0.0437	0.0437	0.1300	0.1300			
59	0.0019	0.0012	0.0313	0.0224	0.2700	0.2350	0.2300	0.0019	0.0012	0.0001	0.0001	0.0493	0.0493	0.1300	0.1300			
60	0.0021	0.0013			0.7600	0.2950	0.7000									1.0000	1.0000	
61	0.0024	0.0015			0.4200	0.2350	0.3400									1.0000	1.0000	
62	0.0026	0.0016			0.2550	0.2900	0.2000									1.0000	1.0000	
63	0.0029	0.0018			0.2350	0.0625	0.2000									1.0000	1.0000	
64	0.0032	0.0019			0.3500	0.2500	0.3000									1.0000	1.0000	
65					1.0000	1.0000	1.0000									1.0000	1.0000	

Nil resignation rate is assumed for SSS & PSS contributors.

Note

- SANCS contributor decrements are assumed to be in line with those for the main Scheme for the member.
- Female 60 relates to female SSS members with a retirement age of 60. Female 55 relates to female SSS members with a retirement age of 55.

Deferred decrements

	Deferreds					
	SASS retirements*		SSS retirements		PSS retirements	
Age nearest	Male	Female	Male & F60	F55	Male	Female
55	0.0300	0.0300		1.0000	1.0000	1.0000
56	0.0600	0.0600		1.0000	1.0000	1.0000
57	0.1000	0.1000		1.0000	1.0000	1.0000
58	0.1500	0.1500		1.0000	1.0000	1.0000
59	0.1500	0.1500		1.0000	1.0000	1.0000
60	0.2500	0.2500	1.0000	1.0000	1.0000	1.0000
61	0.1500	0.1500	1.0000	1.0000	1.0000	1.0000
62	0.1500	0.1500	1.0000	1.0000	1.0000	1.0000
63	0.1500	0.1500	1.0000	1.0000	1.0000	1.0000
64	0.2500	0.2500	1.0000	1.0000	1.0000	1.0000
65	0.4000	0.4000	1.0000	1.0000	1.0000	1.0000
66	0.4000	0.4000	1.0000	1.0000	1.0000	1.0000
67	0.3000	0.3000	1.0000	1.0000	1.0000	1.0000
68	0.3000	0.3000	1.0000	1.0000	1.0000	1.0000
69	0.3000	0.3000	1.0000	1.0000	1.0000	1.0000
70	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

* These assumptions are new following the experience analysis, but do not affect the valuation of liabilities as SASS deferred benefits are purely accumulation in nature.

Note

- SANCS deferred decrements are assumed to be in line with those for the main Scheme for the member.
- F60 relates to female SSS members with a retirement age of 60. F55 relates to female SSS members with a retirement age of 55.

Pensioner decrements

	SASS pensioners mortality						SSS & PSS pensioners mortality						Mortality improvements				Marital status	
	Standard pensioners		Invalidity pensioners*		Spouse pensioners		Standard pensioners		Invalidity pensioners*		Spouse pensioners		Short-term		Long-term		Proportion with spouse	
Age nearest	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
50	0.0012	0.0010	0.0021	0.0020	0.0012	0.0010	0.0012	0.0010	0.0021	0.0020	0.0012	0.0010	0.0229	0.0198	0.0149	0.0163	80%	55%
51	0.0012	0.0011	0.0021	0.0021	0.0012	0.0011	0.0012	0.0011	0.0021	0.0021	0.0012	0.0011	0.0238	0.0204	0.0146	0.0160	80%	55%
52	0.0012	0.0011	0.0023	0.0023	0.0012	0.0011	0.0012	0.0011	0.0023	0.0023	0.0012	0.0011	0.0248	0.0210	0.0144	0.0158	80%	55%
53	0.0013	0.0012	0.0024	0.0023	0.0013	0.0012	0.0013	0.0012	0.0024	0.0023	0.0013	0.0012	0.0257	0.0216	0.0141	0.0156	80%	55%
54	0.0014	0.0013	0.0025	0.0024	0.0014	0.0013	0.0014	0.0013	0.0025	0.0024	0.0014	0.0013	0.0265	0.0221	0.0139	0.0155	80%	55%
55	0.0015	0.0014	0.0027	0.0026	0.0015	0.0014	0.0015	0.0014	0.0027	0.0026	0.0015	0.0014	0.0273	0.0226	0.0138	0.0153	80%	55%
56	0.0017	0.0016	0.0028	0.0027	0.0017	0.0016	0.0017	0.0016	0.0028	0.0027	0.0017	0.0016	0.0281	0.0231	0.0136	0.0152	80%	55%
57	0.0017	0.0017	0.0031	0.0030	0.0017	0.0017	0.0017	0.0017	0.0031	0.0030	0.0017	0.0017	0.0287	0.0235	0.0134	0.0150	80%	55%
58	0.0019	0.0019	0.0034	0.0032	0.0019	0.0019	0.0019	0.0019	0.0034	0.0032	0.0019	0.0019	0.0294	0.0239	0.0132	0.0148	80%	55%
59	0.0020	0.0020	0.0038	0.0034	0.0020	0.0020	0.0020	0.0020	0.0038	0.0034	0.0020	0.0020	0.0299	0.0243	0.0129	0.0145	80%	55%
60	0.0022	0.0020	0.0044	0.0037	0.0022	0.0020	0.0022	0.0020	0.0044	0.0037	0.0022	0.0020	0.0304	0.0246	0.0126	0.0142	80%	55%
61	0.0023	0.0021	0.0046	0.0040	0.0023	0.0021	0.0023	0.0021	0.0046	0.0040	0.0023	0.0021	0.0309	0.0249	0.0123	0.0139	79%	55%
62	0.0024	0.0022	0.0052	0.0045	0.0024	0.0022	0.0024	0.0022	0.0052	0.0045	0.0024	0.0022	0.0312	0.0252	0.0120	0.0137	78%	55%
63	0.0025	0.0023	0.0056	0.0053	0.0025	0.0023	0.0025	0.0023	0.0056	0.0053	0.0025	0.0023	0.0315	0.0254	0.0118	0.0135	77%	55%
64	0.0027	0.0024	0.0063	0.0059	0.0027	0.0024	0.0027	0.0024	0.0063	0.0059	0.0027	0.0024	0.0317	0.0255	0.0117	0.0135	76%	55%
65	0.0033	0.0029	0.0071	0.0066	0.0033	0.0029	0.0033	0.0029	0.0071	0.0066	0.0033	0.0029	0.0319	0.0256	0.0117	0.0139	75%	55%
66	0.0040	0.0031	0.0080	0.0073	0.0040	0.0031	0.0040	0.0031	0.0080	0.0073	0.0040	0.0031	0.0319	0.0257	0.0118	0.0142	75%	55%
67	0.0048	0.0035	0.0095	0.0080	0.0048	0.0035	0.0048	0.0035	0.0095	0.0080	0.0048	0.0035	0.0319	0.0257	0.0118	0.0142	75%	55%
68	0.0057	0.0041	0.0114	0.0087	0.0057	0.0041	0.0057	0.0041	0.0114	0.0087	0.0057	0.0041	0.0318	0.0257	0.0115	0.0139	75%	55%
69	0.0066	0.0046	0.0134	0.0094	0.0066	0.0046	0.0066	0.0046	0.0134	0.0094	0.0066	0.0046	0.0316	0.0256	0.0112	0.0135	75%	55%
70	0.0075	0.0048	0.0150	0.0102	0.0075	0.0048	0.0075	0.0048	0.0150	0.0102	0.0075	0.0048	0.0314	0.0255	0.0107	0.0129	75%	55%
71	0.0085	0.0051	0.0164	0.0112	0.0085	0.0051	0.0085	0.0051	0.0164	0.0112	0.0085	0.0051	0.0310	0.0253	0.0102	0.0123	75%	51%
72	0.0096	0.0058	0.0178	0.0126	0.0096	0.0058	0.0096	0.0058	0.0178	0.0126	0.0096	0.0058	0.0306	0.0250	0.0099	0.0119	75%	47%
73	0.0109	0.0068	0.0193	0.0148	0.0109	0.0068	0.0109	0.0068	0.0193	0.0148	0.0109	0.0068	0.0300	0.0247	0.0096	0.0116	75%	43%
74	0.0123	0.0085	0.0211	0.0180	0.0123	0.0085	0.0123	0.0085	0.0211	0.0180	0.0123	0.0085	0.0294	0.0243	0.0095	0.0115	75%	39%
75	0.0157	0.0125	0.0240	0.0228	0.0157	0.0125	0.0142	0.0104	0.0240	0.0228	0.0142	0.0104	0.0286	0.0238	0.0093	0.0115	75%	37%
76	0.0179	0.0150	0.0288	0.0266	0.0179	0.0150	0.0163	0.0125	0.0288	0.0266	0.0163	0.0125	0.0277	0.0233	0.0091	0.0114	74%	35%
77	0.0208	0.0177	0.0338	0.0301	0.0208	0.0177	0.0189	0.0147	0.0338	0.0301	0.0189	0.0147	0.0266	0.0228	0.0088	0.0113	73%	33%
78	0.0261	0.0224	0.0389	0.0348	0.0261	0.0224	0.0217	0.0172	0.0389	0.0348	0.0217	0.0172	0.0255	0.0221	0.0085	0.0111	72%	31%
79	0.0307	0.0264	0.0445	0.0402	0.0307	0.0264	0.0255	0.0203	0.0445	0.0402	0.0255	0.0203	0.0243	0.0214	0.0081	0.0108	71%	28%
80	0.0403	0.0346	0.0504	0.0452	0.0403	0.0346	0.0298	0.0247	0.0504	0.0452	0.0298	0.0247	0.0229	0.0206	0.0077	0.0105	70%	26%
81	0.0481	0.0406	0.0562	0.0528	0.0481	0.0406	0.0356	0.0290	0.0562	0.0528	0.0356	0.0290	0.0216	0.0197	0.0073	0.0102	67%	24%
82	0.0584	0.0475	0.0644	0.0614	0.0584	0.0475	0.0433	0.0339	0.0644	0.0614	0.0433	0.0339	0.0202	0.0188	0.0069	0.0098	64%	22%
83	0.0688	0.0554	0.0736	0.0701	0.0688	0.0554	0.0510	0.0396	0.0736	0.0701	0.0510	0.0396	0.0190	0.0180	0.0064	0.0093	62%	20%
84	0.0793	0.0645	0.0824	0.0794	0.0793	0.0645	0.0588	0.0460	0.0824	0.0794	0.0588	0.0460	0.0178	0.0166	0.0060	0.0088	60%	18%
85	0.0899	0.0738	0.0918	0.0890	0.0899	0.0738	0.0666	0.0527	0.0918	0.0890	0.0666	0.0527	0.0166	0.0152	0.0056	0.0083	58%	16%
86	0.1019	0.0835	0.1002	0.0949	0.1019	0.0835	0.0754	0.0597	0.1002	0.0949	0.0754	0.0597	0.0153	0.0138	0.0052	0.0077	56%	14%
87	0.1165	0.0945	0.1095	0.1002	0.1165	0.0945	0.0863	0.0675	0.1095	0.1002	0.0863	0.0675	0.0140	0.0124	0.0048	0.0072	54%	12%
88	0.1307	0.1068	0.1197	0.1045	0.1307	0.1068	0.0968	0.0763	0.1197	0.1045	0.0968	0.0763	0.0124	0.0110	0.0045	0.0066	52%	10%
89	0.1468	0.1204	0.1421	0.1088	0.1468	0.1204	0.1087	0.0861	0.1421	0.1088	0.1087	0.0861	0.0108	0.0097	0.0041	0.0060	50%	9%
90	0.1673	0.1414	0.1661	0.1190	0.1673	0.1414	0.1239	0.1087	0.1661	0.1190	0.1239	0.1087	0.0089	0.0083	0.0037	0.0055	48%	8%
91	0.1921	0.1616	0.1853	0.1332	0.1921	0.1616	0.1423	0.1244	0.1853	0.1332	0.1423	0.1244	0.0070	0.0070	0.0034	0.0049	46%	7%
92	0.2211	0.1836	0.2034	0.1524	0.2211	0.1836	0.1638	0.1412	0.2034	0.1524	0.1638	0.1412	0.0051	0.0056	0.0031	0.0044	43%	6%
93	0.2506	0.2067	0.2221	0.1728	0.2506	0.2067	0.1856	0.1590	0.2221	0.1728	0.1856	0.1590	0.0031	0.0043	0.0028	0.0039	40%	5%
94	0.2802	0.2306	0.2448	0.1912	0.2802	0.2306	0.2076	0.1774	0.2448	0.1912	0.2076	0.1774	0.0012	0.0031	0.0025	0.0035	37%	4%
95	0.3109	0.2546	0.2760	0.2098	0.3109	0.2546	0.2303	0.1958	0.2760	0.2098	0.2303	0.1958	-	0.0020	0.0023	0.0031	34%	3%
96	0.3406	0.2784	0.3060	0.2294	0.3406	0.2784	0.2523	0.2141	0.3060	0.2294	0.2523	0.2141	-	0.0009	0.0020	0.0027	31%	2%
97	0.3703	0.3013	0.3400	0.2517	0.3703	0.3013	0.2743	0.2318	0.3400	0.2517	0.2743	0.2318	-	-	0.0017	0.0023	28%	1%
98	0.3973	0.3224	0.3760	0.2688	0.3973	0.3224	0.2943	0.2480	0.3760	0.2688	0.2943	0.2480	-	-	0.0015	0.0018	25%	0%
99	0.4203	0.3388	0.4120	0.2860	0.4203	0.3388	0.3113	0.2606	0.4120	0.2860	0.3113	0.2606	-	-	0.0012	0.0014	22%	0%
100	0.4392	0.3531	0.4500	0.3002	0.4392	0.3531	0.3253	0.2716	0.4500	0.3002	0.3253	0.2716	-	-	0.0009	0.0010	19%	0%

* A select mortality rate is assumed for the first year of invalidity: 5% for ages up to 39 and 2.5% for ages 40 and older.

Note: Short-term mortality improvements have been applied for the first 6 years from 2018, followed by the long-term rates thereafter.