2 December 2009

Report on the Actuarial Investigation of the:

- State Authorities Superannuation Scheme

- State Authorities Non-Contributory Superannuation Scheme

- State Superannuation Scheme

- Police Superannuation Scheme

As at 30 June 2009

Volume I

SAS Trustee Corporation

MERCER

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Consulting. Outsourcing. Investments.

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1. Introduction and Summary of Results

1.1 Introduction

1.1.1 As requested by the SAS Trustee Corporation (the Trustee) we have carried out an actuarial valuation of the following Schemes in accordance with the relevant legislation governing each of the Schemes:

- the State Authorities Superannuation Scheme (SASS)
- the State Authorities Non-Contributory Superannuation Scheme (SANCS)
- the State Superannuation Scheme (SSS)
- the Police Superannuation Scheme (PSS).

The previous actuarial investigation of SASS, SANCS, SSS and PSS was carried out by myself as at 30 June 2006 and the results were set out in a report dated December 2006.

This report conforms to the requirements of Professional Standard 400 of the Institute of Actuaries of Australia.

This report has been prepared in accordance with the timetable agreed with the Trustee and this timing is consistent with the 2003 and 2006 Triennial Reviews.

As at the date of the previous investigation certain assets were held in the General Government Liability Management Fund (GGLMF). The assets were transferred to the Pooled Fund during the inter-investigation period. Where appropriate the effect of the GGLMF has been noted.

1.1.2 Each of the Schemes were established on the following dates and have been closed to new entrants as set out in the table below:

Scheme	Commencement	Closed to New Entrants
SASS	1 April 1988	19 December 1992
SANCS	1 April 1988	8 December 1992
SSS	1 July 1919	1 July 1985
PSS	1 February 1907	31 March 1988

The main characteristics of each Scheme are:

SASS The benefit from employee contributions is the accumulation of those contributions plus interest.

The employer financed benefit is generally a lump sum, and is a defined benefit varying with final average salary, period of membership and the level of employee contributions.

SANCS Employees do not contribute. The employer financed benefit is generally a lump sum of 3% times final average salary times years of membership.

SSS On retirement, a defined benefit (pension or lump sum) is payable. The level of benefit depends upon the number of units that have been purchased.

PSS On retirement, a defined benefit (pension or lump sum) is payable. The level of benefit depends upon final average salary and length of membership.

1.1.3 The purposes of the triennial investigation are:

(1) To assess the suitability of the actuarial assumptions. The triennial investigation provides an opportunity to carefully consider recent experience and to modify the actuarial basis accordingly;

(2) To calculate the unfunded liability on a Scheme basis, thereby determining the extents to which the Schemes and the Pooled Fund are funded;

(3) To investigate the funding status of the major employer groupings: the General Government Sector, Universities and PTEs and other employers;

(4) To provide information which can be used for other financial purposes such as determining the level of contributions on an employer by employer basis, and for detailed projections of future cash flows.

1.1.4 In accordance with legislation distinctions are made between groups of employers as set out in the following table.

Scheme	Employers
SASS	Employers separated into Parts 1 and 3 in accordance with legislation. Part 1 includes the Crown and other employers, Part 3 includes Hospitals and other bodies. Refer Section 6 Volume II for a full listing of the employers.
SANCS	Employers are subdivided in the same manner as SASS above.
SSS	Employers under SSS are essentially equivalent to Part 1 employers under SASS.
PSS	No subdivision necessary.

Separate information is no longer provided in respect of Part 1 and Part 3. Part 3 information is shown separately in Volume II of this report and in the report on the financial position of individual employers.

1.1.5 The number of contributors in each of the Schemes at the current and previous investigation dates is set out below:

Contributors	**SASS**	**SANCS**	**SSS**	**PSS**	**Total***
30 June 2009	46,741	68,979	19,903	2,352	137,975
30 June 2006	56,986	86,875	26,616	3,297	173,774

Pensioners	**SASS**	**SANCS**	**SSS**	**PSS**	**Total**
30 June 2009	4,099	n/a	44,516	6,190	54,805
30 June 2006	4,653	n/a	39,754	5,697	50,104

* Note that each SANCS member is also a member of one of the other Schemes.

1.1.6 The Pooled Fund assets at 30 June 2009 totalled $28,847.7 million compared to $28,578.1 million at the last valuation. The assets were allocated to each Scheme as follows:

Assets ($millions)	**SASS**	**SANCS**	**SSS**	**PSS**	**Total**
30 June 2009	7,854	1,030	17,214	2,750	28,848
30 June 2006	8,590	1,145	17,881	962	28,578

The assets of the GGLMF amounted to $6,729 million as at 30 June 2006 (and are not included in the above table).

Note that the asset level of PSS has increased significantly over the three years to 30 June 2009 whereas the level has reduced for other Schemes. This is due to a high allocation of cash flow to the PSS in the inter-valuation period reflecting STC's practice of allocating Crown Contributions received firstly to address emerging cash flows and secondly to develop a consistent level of funding across Schemes.

1.1.7 The Employer Reserves as at 30 June 2009 in respect of each Scheme are as follows:

$millions	SASS	SANCS	SSS	PSS	Total
Assets	7,854	1,030	17,214	2,750	28,848
Less,					
➢ Member Reserves (including SASS and SANCS deferreds)	4,985	253	3,627	314	9,179
➢ Death/ Disability Reserves	2	-	-	-	2
Adjustments	19	-40	79	-12	46
Employer Reserve	2,886	737	13,666	2,424	19,713

The adjustments noted above represent differences between the employer records (which are required for subdivision by Scheme and employer) and the accounts. In addition co-contributions in SANCS have been removed from the SANCS Employer Reserve.

1.1.8 Two approaches have been adopted for this investigation – a funding valuation and a financial position valuation.

The major part of the report relates to the funding valuation which is consistent with the approach adopted in previous valuations. The purpose of the funding valuation is to assess the financial condition of the fund from the perspective of setting contribution rates.

The results of the investigation on the financial position valuation are set out in Section 8 of the report. The financial position valuation is an assessment of the Pooled Fund on a stand alone scenario: a hypothetical situation where the Trustee does not rely on the future contributions by the employer and where the Trustee therefore needs to be as certain as practicable that there are sufficient assets in the fund to meet the liabilities to members that have accrued to the date of the investigation. The financial position valuation assumes the Trustee invests only in Commonwealth bonds in order to be as certain as possible of the value of future assets.

The difference between the net liability on the financial position valuation and the net liability on the funding valuation is a measure of the value of the employer's covenant. That is, the financial backing of the employer allows the Trustee to invest in assets with higher expected return, but with less security.

1.1.9 For all Schemes the key long term economic assumptions for the funding valuation are as follows:

Long-term assumptions	This valuation % per annum	Last valuation % per annum
Rate of investment return / discount rate	8.3% for pensioners, 7.3% other members	7.7% for current pensioners, 7.0% other members
Rate of general salary escalation	4.0%	4.0%
Rate of increase in CPI	2.5%	2.5%

The investment return assumption for assets backing the liabilities of non pensioners has been increased from 7.0% at the previous valuation to 7.3% per annum and the rate of return for assets backing the liabilities of pensioners from 7.7% to 8.3% per annum. The rate of investment return assumption is higher for pensioners because no tax is payable in respect of assets backing Current Pension Liabilities. Note that the higher investment return assumption applies for all pensioners, not just current pensioners, as was assumed at the previous investigation.

The main reasons for the increase in the investment return assumptions are that the tax position was comprehensively investigated in the inter valuation period and was found to be more favourable than previously assumed; and the outlook by investment consultants is slightly more positive than previously (taking into account relatively depressed asset values).

No special short term assumptions have been adopted with the long term assumptions applying over all time periods.

The change in discount rate has resulted in a reduction in the liability and hence a source of surplus to the Schemes.

1.1.10 The assumptions for the financial position valuation are the same as for the funding valuation except for the rate of investment return / discount rate which is set at 5.59% per annum. This rate is the ten year Commonwealth bond rate at 30 June 2009, allowing for the fact that interest is payable six monthly.

1.1.11 A comprehensive analysis was carried out in respect of all demographic assumptions used in the investigations of the Pooled Fund Schemes. The analysis related mainly to the three years 1 July 2005 to 30 June 2008.

This analysis led to changes in relation to the rates of resignation, preservation, mortality, disability, retirement and early retirement and proportions choosing lump sums or pensions on retirement.

Changes in contributor decrements and deferral of retirement in SASS and SANCS have provided only a small offset to the effect of improvements in pensioner mortality, increased disability rates in respect of the PSS and the assumed rate of people taking pensions with the result that the demographic basis changes have produced a strengthening of the basis and hence a source of deficiency to the Schemes overall.

1.2 Results on the funding valuation basis

1.2.1 Excluding the GGLMF, the unfunded liability for the Pooled Fund has increased from $17,164.7 million to $19,871.2 million over the three years to 30 June 2009. Including the GGLMF, the unfunded liability has increased from $10,435.7 million to $19,871.2 million over the three years.

1.2.2 The unfunded liabilities of each of the Schemes or sub-divisions within Schemes are as follows:

$millions	SASS	SANCS	SSS	PSS	Total
Employer Accrued Benefits					
➢ Contributors	6,479.0	2,268.7	5,829.9	1,862.6	16,440.2
➢ Deferreds	-		627.5	21.7	649.2
➢ Pensioners	427.2		17,951.0	4,116.4	22,494.6
Total Employer Accrued Liability	6,906.2	2,268.7	24,408.4	6,000.7	39,584.0
Less, Employer Reserve Account	2,886.1	737.0	13,665.7	2,424.0	19,712.8
Employer Unfunded Liability as at 30 June 2009	4,020.1	1,531.7	10,742.7	3,576.6	19,871.2
Unfunded Liability as at 30 June 2006 before taking into account the GGLMF	3,088.0	1,231.9	8,152.1	4,692.7	17,164.7
GGLMF					(6,729.0)
Unfunded liability at 30 June 2006 after taking into account GGLMF					10,435.7

The employer unfunded liabilities shown above have not been grossed up for contributions tax.

Employer contributions towards meeting unfunded liabilities must be grossed up to allow for tax on contributions. Wherever employer contribution rates have been calculated in this report, the contribution rates have been grossed up accordingly.

1.2.3 The results in 1.2.2 relate to the employer financed liabilities and assets only. Taking into account employee liabilities and assets, the funding valuation results are:

	$ million
Total accrued liability	48,719
Total Reserve Accounts	28,848
Unfunded liabilities as at 30 June 2009	19,871

1.2.4 Sensitivity runs were carried out, and the results are set out in the following table:

	Unfunded liability under varying assumptions ($million)				
Basis	**SASS**	**SANCS**	**SSS**	**PSS**	**Total**
Standard	4,020.1	1,531.7	10,742.7	3,576.6	19,871.2
Investment return plus 1%	3,534.8	1,388.1	8,041.4	2,963.3	15,927.7
Investment return minus 1%	4,577.1	1,693.5	14,007.4	4,324.5	24,602.5
Salary increases plus 1%	4,495.8	1,694.5	11,053.4	3,684.9	20,928.5
Salary increases minus1%	3,592.7	1,384.8	10,450.7	3,481.0	18,909.2
CPI increases plus 1%	4,103.2	1,531.7	13,789.8	4,248.8	23,673.5
CPI increases minus 1%	3,948.7	1,531.7	8,156.4	3,014.4	16,651.3
Rate of salary increase 3.5% per annum	3,800.7	1,456.4	10,594.4	3,526.5	19,378.0

The above table demonstrates that the rate of investment return has the major impact on the financial condition of the Pooled Fund. The table also shows that a worsening of an economic parameter by 1% per annum has a greater dollar effect than a favourable change of 1% per annum. This effect is particularly noticeable for SSS and PSS. This effect is analysed further in Section 7.5 of Volume II.

In addition, the effect of a short term "shock" to investment return was quantified.

	Unfunded liability under varying assumptions ($million)				
Basis	**SASS**	**SANCS**	**SSS**	**PSS**	**Total**
Standard	4,020.1	1,531.7	10,742.7	3,576.6	19,871.2
Investment return negative 10% in next year, other assumptions as standard	4,519.5	1,661.3	13,682.0	4,065.9	23,928.7

1.3 Major items contributing to current results

1.3.1 The major items of surplus and deficiency which have affected the Schemes over the period since the last actuarial investigation are as follows:

Item	Comment		Amount of deficiency /surplus (-) $ billion
Unfunded liability as at 1 July 2006			17.2
Investment Earnings	Investment earnings of the Pooled Fund were significantly lower than assumed and this resulted in an item of deficiency.		8.3
Contributions	Contributions to the Crown funded employer reserves in SSS and PSS were less than the accruals over the period but offsetting funding transfers and past service funding in SASS and SANCS resulted in an overall surplus.		-0.5
Effect of GGLMF	The GGLMF balance, transferred in 2006-7, together with assumed interest reduced the unfunded liability.		-9.0
Change of actuarial basis	Pensioner assumptions	1.1	
	Lower commutation	0.3	
	PSS higher disability	0.2	
	Expenses allocated to accrued liability	0.4	
	Discount rate	-3.4	
	Other net effects	0.1	
	The overall impact of the changes in the valuation basis was an item of surplus.		-1.3
Impact of disability experience in PSS	The impact of the higher actual than expected disabilities in the PSS was an item of deficiency.		0.1
Other exits	Generally fewer other exits and lower commutation rates was a further item of deficiency.		0.1
Salary increases	Higher than expected salary increases led to a deficiency.		0.4
CPI increases	Higher than anticipated CPI increases led to a deficiency.		0.5
Interest on the previous unfunded liability.	Interest on the previous unfunded liability at 1 July 2006 resulted in a deficiency.		4.1
Other			0.0
Unfunded liability as at 30 June 2009			19.9

The major items of surplus were the transfer from the GGLMF, the change in the actuarial basis and higher contributions overall than benefit accruals; while investment earnings being lower than anticipated, interest on the opening unfunded liability and higher than anticipated salary and CPI increases were the major items of deficiency.

1.4 Funding plans

1.4.1 Position as at 30 June 2009

The financial positions as at 30 June 2009 of the main funding groups are:

	Present value of employer financed past service benefits $ million	Value of assets $ million	Unfunded liability $ million
General Government Sector	32,460	14,688	17,772
Universities	3,285	1,434	1,851
PTEs and others	3,839	3,591	248
Total	39,584	19,713	19,871

This compares with the position as at 30 June 2006:

	Present value of employer financed past service benefits $ million	Value of assets $ million	Unfunded liability $ million
General Government Sector	28,074.0	11,721.0	16,353.0
Universities	2,913.7	1,837.9	1,075.8
PTEs and others	3,564.2	3,828.4	-264.2
Subtotal	34,551.9	17,387.2	17,164.7
GGLMF	0.0	6,729.0	-6,729.0
Total	34,551.9	24,116.2	10,435.7

1.4.2 General Government Sector

The 2009-10 Budget Statement outlined the NSW Government's funding plan for the General Government Sector. The plan is re-evaluated each year and adjusted for the actual experience in the preceding year.

The Non-Crown General Government Sector employers are assumed to continue to contribute at recent levels of contributions as a percentage of salaries of members.

The contributions for the Crown are determined to fully fund the General Government Sector by 30 June 2030.

The approach to the methods and assumptions used by Treasury is identical to the approach to the methods and assumptions used in this report except that the rate of general salary increase used by Treasury is 3.5% per annum whereas the assumption adopted for this report is 4.0% per annum. This difference is non material and well within the range of acceptable assumptions.

Hence this investigation confirms that NSW Treasury's funding plan is expected to result in the General Government Sector being fully funded by 30 June 2030. That is, the assets at that date are expected to exceed the value of past service liabilities.

1.4.3 Universities

The combined deficit of the sub-funds relating to Universities on the funding basis is $1.8 billion. On the current level of contributions individual University sub-funds are expected to exhaust their employer reserves over the period 2014/15 to 2021/22.

Legal advice obtained by the Trustee states that the Trustee cannot pay benefits once a sub-fund is exhausted. That is, other Pooled Fund assets are not available for a sub-fund in deficit.

Recently the NSW Government approached the Commonwealth Government highlighting concern about the funding shortfall of the Universities sector. However, negotiations between the Commonwealth Government and the New South Wales Government in respect of the responsibility for the Universities' superannuation deficit have been continuing for a very long time without resolution. If these negotiations are not resolved by 2014/15 then it is expected that the Trustee will not be able to meet the benefit payment obligation in respect of members of the affected University sub-funds.

I recommend that the Trustee urge the Commonwealth and New South Wales governments to reach agreement in respect of the funding of the Universities within a reasonable timeframe and to formally advise the Trustee of the decision reached.

1.4.4 PTEs and other employers

As a group, Public Trading Enterprises (PTEs) and other employees have a deficiency on the funding basis of $0.2 billion. Possible individual funding plans for each employer are set out in a separate report.

1.4.5 Legal status of employer reserves

As stated in 1.4.2 above, legal advice obtained by the Trustee states that the Trustee cannot pay benefits from a sub-fund once its assets are exhausted.

Subject to the position of the Universities outlined above, the Trustee has put in place appropriate administration procedures to prevent the assets of employer reserves being depleted. The Trustee has also commenced discussions with NSW Treasury to attain greater flexibility with respect to the management of employer reserves.

1.5 Financial position valuation

The results of the financial position valuation for the employer financed section of the Pooled Fund are:

		$ million
less	Value of employer accrued benefits	53,255.4
	Employer reserve account	19,712.8
	Employer unfunded liability	33,542.6

1.6 Post valuation events

1.6.1 Since 1 July 2009 investment returns have been significantly in excess of the level assumed. Thus in the short term, the financial position of the Pooled Fund has strengthened, post valuation.

1.6.2 The Trustee has requested a comprehensive asset liability investigation to be undertaken, following the completion of the actuarial triennial investigation. The purpose of the asset liability investigation is to assist in determining the most appropriate combinations of investment and funding strategies.

2

2. Summary of Information Provided

For the purposes of our investigation we have been provided with information from the Trustee and from the Administrator, Pillar in respect of legislation, membership and financial statements for each of the Schemes within the Pooled Fund.

2.1 Legislation

2.1.1 We have been provided with the consolidated legislation in respect of each of the Schemes within the Pooled Fund. The principal changes to the operation of the Scheme through this legislation in the period since the previous investigation are:

- Provisions were enacted to facilitate payment of salary sacrifice contributions and consistency across schemes;
- Provisions clarifying transfer rights of senior executive members.

2.1.2 A summary of the contribution, benefit and transitional provisions of each of the relevant Acts and Regulations as at 30 June 2009 forms Section 1 of Volume II to this Report. In brief, each of the Schemes provides benefits as follows:

SASS	Provides an accumulation benefit from employee contributions and a defined benefit from employer contributions. The defined benefit is determined according to the number of points accrued by a member, and the points earned varies with the level of member contributions. If an employee contributes 6% of salary for thirty years then he/she qualifies for an employer-financed benefit of 4.5 times final average salary (less 15% tax in respect of periods after 1 July 1988).
SANCS	Provides a defined benefit to members of SASS, PSS and SSS. The Scheme was originally established to meet Award obligations. The Scheme is non-contributory.
SSS	Provides a defined benefit on retirement, which reflects the "units of pension", purchased by members. An accumulation benefit is payable on resignation.
PSS	Is a defined benefit scheme where members can take either pensions or a commuted lump sum. Due to the nature of the occupation specific benefits are payable if injury or death occurs on duty.

2.1.3 The change in the definition of salary from superannuation salary to OTE for purposes of the Superannuation Guarantee legislation necessitated changes to the MRB defined in the Benefit Certificate.

2.2 Membership

2.2.1 Pillar provided us with computer disks containing certain information on:

- any person who is or had been a contributor to any of the Pooled Fund Schemes at any time during the period 1 July 2006 to 30 June 2009; and
- Persons receiving pensions from the Schemes at any time during the period 1 July 2006 to 30 June 2009; and
- Persons who had a deferred interest in any of the Schemes during the period 1 July 2006 to 30 June 2009.

2.2.2 Section 4 of Volume II of this report contains detailed analysis of the Schemes' membership data provided.

2.2.3 The membership data was edited and checked for reasonableness, and we are satisfied as to its accuracy for the purposes of this investigation.

2.3 Financial

2.3.1 The Corporation provided us with copies of its Annual Report for the years ended 30 June 2007, 2008 and 2009, which include the audited accounts. We were also provided with schedules showing the breakdown of these accounts between the various Schemes and reserves and computer disc records in respect of individual employer reserves.

2.3.2 Volume II contains further details from the accounts and includes an apportionment of assets between the various Scheme reserves for the purposes of the valuation.

3

3. Assets and Accounts

When conducting an actuarial investigation of a Scheme the actuary needs to have regard to both the assets and the liabilities of the Scheme. It is incumbent on the actuary to review the underlying assets of the Scheme to see if they are an appropriate match for the emerging liabilities. This section outlines our review of the assets of the Pooled Fund in relation to the actuarial valuation of the Schemes.

3.1 Structure of Investments

3.1.1 Following the introduction of the Superannuation Administration Act 1987, the assets of the four Schemes were pooled, for investment and related purposes. There is no separate portfolio of assets for each Scheme as such, but for convenience reference to 'the Fund' may be taken as reference to that part of the Pooled Fund that the Trustee holds in trust for that particular Scheme. The following discussion, however, relates to the Pooled Fund in its entirety.

3.1.2 The General Government Liability Management Fund (GGLMF) was established in accordance with the *General Government Liability Management Fund Act 2002 No 60* with effect from 10 July 2002. In 2006 / 2007 the assets of the GGLMF were used to pay employer contributions to the Pooled Fund in respect of pre 1 July 1988 liabilities. This payment extinguished the Pre 1 July 1988 Funding Credits. No assets remain in the GGLMF.

3.1.3 The Auditor-General reported that he has conducted an audit of the accounts of the Pooled Fund as at 30 June 2009, to provide reasonable assurance that they are free of material misstatement. In his opinion the financial statements of the Pooled Fund complied with Section 41B of the Public Finance and Audit Act 1983. They presented the financial position of the Fund as at 30 June 2009 fairly and in accordance with applicable Accounting Standards.

3.2 Investment Arrangements

3.2.1 As at 30 June 2009 investment management for the Pooled Fund was carried out by thirty seven investment managers. At the previous triennial investigation investment management was carried out by twenty investment managers.

3.2.2 The Trustee manages four investment portfolios: Growth, Balanced, Conservative Growth and Cash. However the latter three strategies only apply in respect of Member Investment Choice for certain members of the Pooled Fund. The assets backing the defined benefit liabilities are invested in the Growth strategy.

3.2.3 The Trustee, in conjunction with its asset consultant, and its investment managers, has developed a strategic asset allocation, having regard to acceptable levels of risk for the Pooled Fund. The Trustee reports that it does not permit the use of derivatives to obtain leverage of the investment portfolio, but it does use derivatives to limit the risk of adverse market movements. The Trustee has developed a Derivatives Risk Statement to comply with APRA guidelines on derivatives exposure.

3.3 Investment Guidelines for the Pooled Fund

3.3.1 The Trustee first sets a Strategic Asset Allocation which is the percentage of Growth Assets and Defensive Assets. For the Growth portfolio, the percentages are 75% Growth Assets and 25% Defensive Assets.

The proportions allocated to each Strategy remain within a margin of plus or minus 5% of these percentages. However, the allocation to the asset sectors that make up these broader categories may change. The Fund's asset allocations are reviewed formally at least once a year and are constantly monitored through-out the year.

As at 30 June 2009, the Actual Asset Allocation was:

Growth assets	**%**	**$m**
Australian equities	32.3	9,326.40
International equities	26.1	7,546.30
Property	9.7	2,797.10
Alternative assets	7.25	2,100.97
Total Growth assets	75.35	21,770.77
Defensive assets		
Australian fixed income	6.3	1,823.10
International fixed income	4.7	1,362.70
Cash	8.1	2,332.80
Alternative assets	5.55	1,608.33
Total Defensive assets	24.65	7,126.93
TOTAL	100.0	28,897.70

As at 30 June 2009, the Strategic Asset Allocation was:

Growth assets	**%**
Australian equities	32.0
International equities	26.0
Property	9.0
Alternative assets	8.9
Total Growth assets	75.9
Defensive assets	
Australian fixed income	5.5
International fixed income	4.0
Cash	8.0
Alternative assets	6.6
Total Defensive assets	24.1
TOTAL	100.0

3.3.2 Through the index manager, State Street Global Advisers Australia Limited, the Pooled Fund passively rebalances the tradeable asset classes on a daily basis.

3.3.3 The long term investment strategy for the Growth Portfolio is to exceed the change in CPI by 4.5% per annum over rolling 10 year periods. In addition, short term performance up to three years is monitored against comparable funds as measured by the appropriate universe of managers in the Intech Super Survey.

3.4 Asset Valuation

3.4.1 Investments are valued at the balance date on a net market value basis. The estimated market value is determined as the net realisable value after the deduction of the estimated costs of disposal. Changes in market values, representing gains or losses, are brought to account as investment revenue in the period in which they occur. The Trustee has determined details of the method of valuation used for each class of investment as follows:

Investment Class	Method of valuation
Short Term Securities	Market rates.
Fixed interest securities	Relevant fixed interest securities markets.
Equities, Unit Trusts and Unlisted Assets	Relevant stock exchange quoted last sale price, or if unlisted, independent valuation.
Property	Current market value determined individually by independent registered valuers on the basis of an exchange between knowledgeable and willing parties in an arm's length transaction.

3.5 Pooled Fund Performance

3.5.1 The table below summarises the total income and expenditure of the Pooled Fund during the intervaluation period. The data has been taken from the audited annual reports of the Trustee. According to the Audit Report, all assets have been accounted for and valued in accordance with the principles described above.

Financial Year ending 30th June	**2007 $m**	**2008 $m**	**2009 $m**	**3 years to 2009 $m**
Reserves at beginning	**28,578.1**	**38,587.0**	**34,213.8**	**28,578.1**
Income				
Contributions				
➢ Employer	7,437.5	1,130.9	1,152.2	9,720.6
➢ Employee	515.9	564.1	545.6	1,625.6
Investment income	4,940.8	-3,062.1	-4,128.9	-2,250.2
Miscellaneous	6.0	2.7	2.3	11.0
Net Transfers	0.4	4.3	-1.4	3.3
Total income	**12,900.6**	**-1,360.1**	**-2,430.2**	**9,110.3**
Expenditure				
Total benefits	2,758.9	3,075.1	3,020.8	8,854.8
Expenses of management	33.5	33.6	34.4	101.5
Investment Expenses	81.0	109.1	85.4	275.5
Tax – Investment related	74.2	-313.5	-336.8	-576.1
Tax – Scheme related	-46.6	118.7	137.0	209.1
Superannuation Contributions Surcharge	-9.3	-9.9	-4.9	-24.1
Total expenditure	**2,891.7**	**3,013.1**	**2,935.9**	**8,840.7**
Reserves at 30 June	**38,587.0**	**34,213.8**	**28,847.7**	**28,847.7**

3.5.2 During the three year period to the 30 June 2009 the Pooled Fund earned investment revenue of negative $2,250.2 million.

	Income $m	**Changes in Market Value $m**	**Total Investment Revenue $m**
2007	1,553.4	3,387.4	4,940.8
2008	1,941.6	-5,003.7	-3,062.1
2009	1,653.4	-5,782.3	-4,128.9
TOTAL	5,148.4	-7,398.6	-2,250.2

3.5.3 After the deduction of investment-related expenses, and after taking into account investment income tax, the net rates of return in the Growth portfolio are as follows:

Financial Year	Net Investment Return % per annum	Investment Return net of increase in CPI % per annum	Investment Return net of increase in NSW AWOTE % per annum
1.7.2006 to 30.6.2007	14.9%	12.8%	9.8%
1.7.2007 to 30.6.2008	-7.2%	-11.7%	-8.5%
1.7.2008 to 30.6.2009	-10.3%	-11.8%	-15.7%

Note that the above "Net Investment Return" is the rate of return credited to contributors' accounts. Some employer reserves achieve a higher return because of the tax exemption associated with Current Pension Liabilities.

The compound average return over the period was -1.5% per annum. By way of comparison, the compound average return over the three-year period of the previous actuarial investigation was 14.1% per annum.

By way of further comparison, the median rate of return for the three years ended 30 June 2009 of investment managers included in the Mercer Employer Super Multi-Sector Balanced Growth Survey was -4.0% per annum.

3.6 Asset Risk Management

3.6.1 It is noted that the Trustee has suitable risk management policies in place.

3.7 Opinion

3.7.1 The liabilities of the Pooled Fund are long term in nature, and increase in line with increases in CPI and general salary inflation. The asset allocation of 75% Growth Assets and 25% Defensive Assets is a reasonable investment strategy in these circumstances. Moreover the Trustee has appropriate risk management policies in place.

4

4. Financial Structure of each Scheme

Each of the Schemes form part of the Pooled Fund and the Trustee has administered the State Authorities Superannuation Scheme, the State Authorities Non-Contributory Superannuation Scheme, the State Superannuation Scheme and the Police Superannuation Scheme as one fund.

Each of the Schemes has their own structure and this is described below.

4.1 SASS

4.1.1 For the purpose of the actuarial investigation, SASS has six separate sub-divisions, with each employer group (employers under each of Parts 1 and 3) having three divisions:

- Contributors' Reserves
- Employers' Reserves
- Deferred Reserves

The assets of a Part are available only to pay benefits in respect of members of that Part; and in the case of employers in Part 1, the assets are similarly segregated at an employer level. (This segregation is carried out in the accounts, not by way of separation of physical assets).

4.1.2 Contributors' Reserves

All the Contributors' Reserves operate in a similar manner to a personal bank account. In effect, an account is maintained for each contributor of the Scheme. In each superannuation year, the account is credited with the opening balance of the account, and monthly thereafter with contributions made by the contributor and interest for the Scheme's investment earnings. The account is debited with charges in respect of expenses of management and, for those contributors who are covered for additional benefits, charges in respect of those additional death and disability benefits

Whatever the cause of exit, a benefit is payable to a contributor who leaves the Scheme equal to the full amount in his/her Contributor's Reserve account. Moreover, in the event of the death or total and permanent disablement of a contributor covered

for “additional benefits” as defined in Volume II, an additional amount is paid from the Contributors’ Reserve account. Details of these benefits are set out in Volume II.

Within the Contributors’ Reserve, a death and invalidity reserve is established. This reserve is financed by deductions from contributors’ contributions. Any employee-financed additional benefits which become payable on death or disablement are paid out of the reserve. The deductions from contributors’ contributions are determined by multiplying the additional benefit for each contributor by a death and disability charge that varies according to age and sex. The adequacy of these death and disability charges is not within the scope of this investigation however we note that the reserve was at an adequate level when it was last reviewed. The reserve will be reviewed following the completion of this investigation.

4.1.3 Employers’ Reserves

The Employers’ Reserves exist to provide benefits to former contributors in respect of contributions made by employers. However, the funding strategy of each Employers’ Reserve is different.

Part 1 Employers

The current arrangements applying to all Part 1 employers are as follows:

(a) Each employer has an employer reserve account which is credited with contributions by employers at a multiple of contributors’ contributions, increased by investment earnings and debited with benefit payments and management costs;

(b) Each year, each employer is advised the amount of its unfunded past service liability, being the difference between the total accrued superannuation liability determined in accordance with Accounting Standard AASB 119 (ie the present value of benefits payable in respect of completed service) and the balance in the employer reserve;

(c) From time to time employers are advised the contributions required to fund the liabilities that accrue each year. For Part 1 Budget Sector employers this is currently advised as 1.9 times contributors’ contributions.

However, this multiple is “notional” in that Budget Sector agencies use it to calculate their superannuation expense for reporting purposes only. The Crown in line with a long-term funding plan makes actual employer contributions on their behalf. This plan aims to extinguish Budget Sector unfunded liabilities by 2030, as consistent with the provisions of the Fiscal Responsibility Act 2005.

(d) Part 1 Non-Budget Sector employers are required to fund their current service liabilities by contributing at a rate advised by the Trustee after receiving Treasury approval. Additionally they are required to fund their unfunded past service liability by 2030.

As a result of the current funding arrangements the employer contribution ratios (expressed as “billing multiples”) cover a wide range, currently up to 3.8 times contributors’ contributions.

Most of the employer-financed benefits are defined in terms of the contributor's salary at or before date of exit. Because experience will diverge from time to time from assumptions made in relation to salaries and other factors affecting benefits and the build-up of the fund, it is not possible to be certain of the contributions that should be paid to secure these benefits.

The investigation is to be carried out on an individual employer basis. The purposes of the triennial actuarial investigations in respect of Part 1 are:

(i) to assess the suitability of the actuarial assumptions. This assessment is only done every three years as annual assessments cannot be done due to tight time constraints;

(ii) to calculate the unfunded past service liability as at the valuation date;

(iii) to investigate the funding status of the major employer groupings: the General Government Sector, Universities and PTEs and other employers;

(iv) to provide information in respect of the financial strength and future funding commitments of the employer reserves.

Part 3 employers

The Employers' Reserve in respect of employers under Part 3 is intended to fully provide the employer-financed benefits to former contributors of these employers. The reserve is credited in each case with contributions by employers according to the Act, increased by investment earnings and debited with benefit payments and management costs.

The Act specifies that the employers should contribute 1.0 times contributors' contributions (or such higher number as may be prescribed with the concurrence of the Treasurer).

Most of the employer-financed benefits are defined in terms of the contributor's salary at or before date of exit. For the reasons mentioned above, it is not possible to be certain of the contributions that should be paid to secure these benefits.

The purpose of this investigation in respect of the Employers' Reserve is to assess or estimate the extent to which the current contribution levels, together with the amount held in the reserve at the investigation date, are sufficient to finance the defined benefits and to recommend alterations in the prescribed rate if required.

4.1.4 Deferred Reserves

When a member leaves SASS before a 'condition of release' is satisfied, and elects to receive a deferred benefit (rather than taking the benefit in cash) an account is set up in the member's name in the deferred reserve.

This account is credited with investment return and debited with expenses.

If the member decides to receive the benefit before attaining a condition of release, then the accumulated cash resignation benefit is payable with the difference between the deferred account balance and the benefit payable transferred back to the Employer Reserve.

4.1.5 Unfunded Superannuation Liabilities

Calculations in respect of the unfunded superannuation liabilities of employers under Part 1 are required annually for inclusion in the financial statements of statutory bodies.

Under AEIFRS, the calculations must be carried out in accordance with AASB 119. The methodology and assumptions of AASB 119 differ from those adopted for the purposes of this investigation.

4.2 SANCS

4.2.1 For the purposes of the actuarial investigation SANCS has four separate sub-divisions, with each employer group (employers under each of Parts 1 and 3) having two divisions:

- Employers' Reserves
- Deferred Reserves

Within Part 1, the employer reserve is maintained at an individual employer level.

4.2.2 Part 1 Employers

The current arrangements applying to all Part 1 employers are as follows:

(i) Each employer has an employer reserve account which is credited with contributions by the employer at a percentage of members' salaries, increased by investment earnings and debited with benefit payments, tax and management costs;

(ii) Each year, each employer is advised the amount of its unfunded past service liability, being the difference between the total accrued superannuation liability (i.e. the present value of benefits payable in respect of service prior to the calculation date) and the balance in the employer reserve;

(iii) Employers are advised of the contributions required to fund the liabilities accruing each year. This is generally advised as 2.5% of salaries, although pay-as-you-go employers (Consolidated Fund or supported Government employers) are only required to contribute at 0.5% of salaries.

However, this contribution rate is “notional” in that Budget Sector agencies use it to calculate their superannuation expense for reporting purposes only. The Crown in line with a long-term funding plan makes actual employer contributions on their behalf. This plan aims to extinguish Budget Sector unfunded liabilities by 2030, consistent with provisions of the Fiscal Responsibility Act 2005.

(iv) Part 1 Non-Budget Sector employers are required to fund their current service liabilities by contributing at a rate advised by the Trustee. Additionally they are required to fund their unfunded past service liability by 2030.

(v) With the concurrence of the Treasurer, the Trustee determines for each employer the percentage of members' salaries, which is to be its contribution rate for the following year. In setting this rate the Trustee has regard to the contributions advised as in (iii) and (iv) above.

Most of the employer-financed benefits are defined in terms of the contributor’s salary at or before date of exit. Because experience will diverge from time to time from assumptions made in relation to salaries and other factors affecting benefits and the build-up of the fund, it is not possible to be certain of the contributions that should be paid to secure these benefits.

The purposes of regular actuarial investigations in respect of Part 1 are:

(i) to assess the suitability of the actuarial assumptions,

(ii) to calculate the unfunded past service liability as at the valuation date,

(iii) to investigate the funding status of the major employer groupings: the General Government Sector, Universities and PTEs and other employers,

(iv) to provide information in respect of the financial strength and future funding commitments of the employer reserves.

4.2.3 Part 3 Employers

The Employers’ Reserves in respect of employers under Part 3 are intended to fully provide the Basic Benefits for employees of these employers. The Act specifies that the Trustee shall determine, with the concurrence of the Treasurer, the percentage contribution rate. This rate has been determined as 2.5% of members' salaries.

Benefits are defined in terms of the member's salary at or before the date of exit. Further, experience will diverge from time to time from assumptions made in relation to salaries and other factors. It is, therefore, not possible to be certain of the contributions that should be paid to secure these benefits.

The purpose of the actuarial investigation is to assess or estimate the extent to which the contribution rate prescribed in the legislation or determined by the Trustee, together with the amount held in the employer reserve at the investigation date, is sufficient to finance the benefits, and to recommend alterations in the prescribed or determined rate if required.

4.2.4 Deferred Reserves

When a member leaves SANCS before a 'condition of release' is satisfied, an account is set up in the member's name in the deferred reserve.

This account is credited with investment return and debited with expenses.

4.2.5 Unfunded Superannuation Liabilities

In the same manner as SASS, calculations in respect of the unfunded superannuation liabilities of employers under Part 1 are required annually for inclusion in the financial statements of statutory bodies.

4.3 SSS

4.3.1 SSS comprises two Reserves:

- The Contributors' Reserve and
- The Employers' Reserve - which in turn comprises of a number of individual Employer Reserves.

4.3.2 Contributors' Reserve

Since 30 June 1989 the Trustee has maintained a reserve called the Contributors' Reserve. It is credited with employee contributions, and interest at a rate determined by the Trustee. When a contributor ceases employment, an amount is transferred to the reserve account of the contributors' latest employer. For convenience, the event that initiates that action is referred to as "benefit emergence", although in the case of an election for a deferred benefit a benefit may not become payable for some time.

The amount payable from the Contributors' Reserve is the sum of the employee's contributions accumulated with interest at the rate of 3.5% per annum until 1 July 1972, and thereafter at rates fixed by the Trustee. That sum is referred to for convenience as the "Section 33B accumulation".

The amount payable from the Contributors' Reserve is further limited, namely to the value of the benefit. The value of pension or deferred benefits is determined by Pillar, using factors supplied by the Scheme Actuary. This limitation is not generally expected to apply.

The amount payable from the Contributors' Reserve is for convenience referred to as the "Section 33B transfer". In the case of resignations, it is paid directly to the beneficiary, and the balance of the lump sum, if any, is paid from the Employer reserve from which the benefit is to be paid.

4.3.3 Employer Reserves

The Administrator maintains for each employer a reserve, or a reserve for each cost centre within each employer. Each is credited with employer contributions, transfers from the Contributors' Reserve, and interest at a rate determined by the Trustee. It is debited with benefit payments, expenses and tax.

The amount of the contribution payable by each employer is currently a multiple (which may be less than one) of the contributions made by the employees. The Trustee, with the concurrence of the Treasurer, periodically fixes the multiple for each employer.

When a contributor exits from the Fund, an amount is transferred from the Contributors' Reserve as part of the benefit payable. If the benefit is a lump sum, the balance of the benefit is debited to the Employer Reserve. If the benefit is a pension, the money transferred from the Contributors' Reserve is placed in the Employer's Reserve and may remain there for some time before it is expended.

If an Employer Reserve becomes insufficient to meet benefit payments immediately due, the Trustee may require the employer to meet the necessary payment. In effect, the employer guarantees the benefit.

The Trustee may, with the concurrence of the Treasurer, adjust an Employer's Reserve whenever, through a change in circumstances, it appears appropriate to do so.

Treasurer's Direction 510.01 was introduced in January 1991. It refers to employers fully or partly Budget funded (in this context referred to as Consolidated fund employers) and now reads as follows:

> GOVERNMENT SERVICES (fully budget funded) COMMERCIAL ACTIVITIES (off-budget agencies and activities belonging to Government Service Organisations) and SEMI-COMMERCIAL AUTHORITIES (partly subsidised by the budget).
>
> Organisations in this category should:
>
> 1. Recognise all employee entitlements in the financial period in which they emerge.
> 2. Progressively seek to recover these from revenues
> 3. Not fund the liability unless otherwise directed by the Treasurer.

Treasurer's Direction 510.02 refers to Non Budget Sector employers, and now reads as follows:

> COMMERCIAL AUTHORITIES (self funded Government trading enterprises, including State owned corporations).
>
> Organisations in this category should:
>
> 1. Recognise all employee entitlements in the financial period in which they emerge
> 2. Fully fund superannuation entitlements
> 3. Meet other employee entitlements on a normal commercial basis from general operating cash flow (ie. no specific funding).

The Budget Papers state that Non-Budget Sector agencies are required to meet the full accrual cost of increases in superannuation liabilities and are required to fully fund past unfunded liabilities over a period of up to 30 years.

4.4 PSS

4.4.1 The PSS is split between the Contributor and Employer Reserves.

4.4.2 The Contributors Reserve operates in a similar way to the SSS Contributor Reserve, being credited with employee contributions and interest and debited at benefit emergence with the actual benefit payment or the transfer to employer reserve in the case of pension or deferred benefits.

4.4.3 The Employer Reserve is credited with employer contributions, transfers from the Contributors' Reserve, and interest at a rate determined by the Trustee. It is debited with benefit payments, expenses and tax. It behaves in the same way as the SSS employer reserve for a Budget-Sector employer, with the Consolidated Fund effectively covering the shortfall between benefits emerging and the total of Employer and Contributor reserves.

4.5 Ultimate Crown guarantee of benefits and legal status of employer reserves

4.5.1 At my request, the STC Executive obtained legal advice on the following questions:

a) are the superannuation liabilities of all employers in the Pooled Fund covered by a guarantee of payment by the NSW Government?
b) If the answer to the first question is no, which employers are not covered?
c) If the sub-fund of an individual employer has no assets, may the Trustee continue to pay benefits to members of that sub-fund?
d) If the sub-fund of an individual employer has no assets, must the Trustee continue to pay benefits to members of that sub-fund?

A summary of the legal advice obtained by the Trustee is as follows –

a) PSS – covered
SSS – only in respect of privatised employers
SASS – only in respect of privatised employers and Part 3 (ie Public health organisations) employers
SANCS – only in respect of privatised employers and Part 3 employers.
b) PSS – not applicable
SSS – no employers are covered except privatised employers
SASS – no employers are covered except privatised employers and Part 3 employers
SANCS – no employers are covered except privatised employers and Part 3 employers
c) The Scheme Legislation does not empower the Trustee to continue to pay benefits (except for Part 3 employers)
d) The Scheme Legislation does not empower the Trustee to continue to pay benefits (except for Part 3 employers).

4.5.2 This advice emphasises the need for the position with respect to the Universities to be resolved (refer Section 7).

4.5.3 Subject to paragraph 4.5.2, the Trustee has put in place appropriate administration procedures to prevent the assets of employer reserves being depleted. The Trustee has also commenced discussions with NSW Treasury to attain greater flexibility with respect to the management of employer reserves.

5

5. Funding Valuation Process and Valuation Basis

This section explains the assumptions used for each of the Schemes for valuing the liabilities for funding purposes. All of the assumptions are set out in detail in Volume II of this report.

5.1 Purpose of the funding valuation

The purpose of the funding valuation is to assess the financial condition of the fund from the perspective of setting contribution rates. Funding is a dynamic exercise. The contribution rate can be determined initially, and then adjusted at annual or triennial intervals. As actual events unfold the employer contributions can be adjusted upwards or downwards. In the funding valuation, the employer covenant (ie the willingness of the employer sponsor to financially support the fund) is the risk reserve for adverse experience.

In this environment it is reasonable to use best estimates for the assumptions. In particular the rate of discount is set at the expected rate of investment return.

5.2 Valuation Process

5.2.1 The actuarial valuation process has a number of stages as follows:

Stage 1
Assumptions are made about the future, based on the past experience of superannuation funds generally and on the recent past experience of each Scheme. This aspect is discussed in the remaining paragraphs of this section and the complete basis is set out in Volume II.

Stage 2
Using these assumptions, the future money flow into and out of the Scheme year by year is calculated until the last of the contributors and pensioners as at 30 June 2009 leaves the Scheme.

Stage 3
The cash flows are discounted to capital values at the valuation date.

5.2.2 Consistency of Assumptions across Schemes

The assumptions about rates of future investment return were set the same for all Schemes in the Pooled Fund as the same investment pool has been used and since the term of the outstanding liabilities is sufficiently similar. Similarly, assumptions about rates of inflation and rates of inflationary salary increases were set the same for all Schemes.

Other assumptions (mainly rates of decrement and rates of promotional salary increase) have been set independently to reflect the underlying experience of the membership of each Scheme. However, we have ensured that all Schemes have been treated in a consistent manner.

5.3 Economic Assumptions

5.3.1 Background

In the actuarial basis used to value the Schemes' benefits the three economic assumptions are the rate of investment return, the rate of salary increase and the rate of inflation. The excess of the rate of investment return over the rate of inflation is more important than the absolute values of those two items; and this gap is the most significant element of the actuarial basis. In addition the rate of investment return less the rate of salary increase is very important.

As set out in Section 3, the compound average rate of return over the 3 year period to 30 June 2009 was -1.5% pa. This compares with the rates of 7.7% per annum for pensioners and 7.0% per annum for other memberships assumed in the previous valuation.

Sources used in setting the assumptions include:

- NSW Treasury;
- June 2009 Capital Markets Assumptions – Australia; from Mercer Investment Consulting;
- Frontier Investment Consulting;
- Trends in Relative Consumer Price – Reserve Bank Bulletin July 2009;
- Australian Investment Performance 1959 to 2009 (and Investment Assumptions for Stochastic Models) Colin Grenfell, Presented to the Institute of Actuaries of Australia August / September 2009.

5.3.2 Rate of increase in the Consumer Price Index (CPI)

Mercer Investment Consulting expects consumer price inflation to average 2.5% per annum in the long run. This is based on the middle of the RBA's target of 2 - 3% per annum. It is acknowledged that this is a long term forecast and that there will be periods when inflation is above or below these levels.

The RBA's July bulletin analysed the rate of increase of various categories within the Consumer Price Index. Whilst there was considerable variation in the pace of price growth of the various goods and services, overall consumer price inflation in Australia has averaged 2.5% per annum since the adoption of inflation targeting in 1993.

Grenfell reviewed the actual economic and investment experience in Australia over the past fifty years (1 July 1959 to 30 June 2009). As a result of that review he adopted

CPI assumptions of 2.50% per annum (as an arithmetic average) and 2.48% per annum as a geometric average.

In the 2009-10 Budget Statement NSW Treasury estimated inflation in the medium term to be 2.5% per annum.

On the basis of the above, the rate of increase in CPI assumption is 2.5% per annum.

5.3.3 Rate of general increase in salaries

Mercer Investment Consulting notes that since the introduction of inflation targeting, Average Weekly Ordinary Time Earnings (AWOTE) has increased by 4.3% per annum on average, and the Wage Price Index (WPI) has increased by 3.6% per annum. The average of these two measures is 3.95% per annum.

Another way to estimate the rate of general salary increase is to add the expected rate of increase of CPI (2.5% per annum) to the thirty year average of labour productivity growth (1.6% per annum). This gives an estimate of 4.1% per annum.

Grenfell's assumptions for general salary increases are an arithmetic mean of 3.75% per annum and a geometric mean of 3.72% per annum.

On the basis of the above, the rate of general salary increase assumption is 4.0% per annum.

In the 2009-10 Budget Statement NSW Treasury estimated the wage price index to increase by 3.5% per annum.

However this estimate was set in a "whole of government" context and takes into account overall workforce planning initiatives. By numbers, the contributors to the Pooled Fund are a relatively small and decreasing proportion of the total NSW public sector workforce. It is quite possible that this subset will experience different salary increases to the NSW Public Sector workforce as a whole.

Nevertheless, one of the sensitivities investigated is the effect of salary increases of 3.5% per annum.

5.3.4 Rate of investment return and rate of discount

The asset allocation of the Pooled Fund as at 30 June 2009 is:

Asset Class	Percentage
Australian equities	32.3
International equities	26.1
Property	9.7
Alternative assets	12.8
Australian Fixed Interest	6.3
International Fixed Interest	4.7
Cash	8.1
Total	100.0

Based on Mercer's Investment Consulting sector returns, the estimated return of the portfolio net of tax and fees is 7.5% pa. For assets backing pension liabilities this is equivalent to an investment return of 8.5% per annum.

In the Grenfell paper, a post tax, post fees rate of return of 7.16% per annum is derived for a balanced portfolio. It is likely that State Super would have lower expenses than the typical Australian balanced superannuation fund.

On the basis of the above, the rates of investment return and discount assumptions for funding purposes were set at 7.3% per annum for assets not backing pension liabilities and 8.3% per annum for assets backing pension liabilities.

It must be borne in mind that there is considerable volatility from year to year in the rates of investment return actually experienced.

5.3.5 Summary

For all Schemes the key long term economic assumptions are as follows:

Rate of investment return:	7.3% per annum (non pensioners) 8.3% per annum (pensioners)
Rate of general salary escalation:	4.0% per annum
Rate of increase in consumer price index:	2.5% per annum

No specific short term assumptions have been adopted.

5.3.6 Sensitivities

To provide an indication of the sensitivity of the valuation results to economic factors seven further sets of calculations were carried out, being an increase of 1% per annum and a decrease of 1% per annum to the rate of investment return, the rate of salary increase and the rate of CPI increase; plus a set of calculations using the whole of government salary increase assumptions.

Sensitivity Study	**Economic Basis**
Investment Return plus 1%	Standard basis but with investment return increased by 1%
Investment Return minus 1%	Standard basis but with investment return decreased by 1%
Salary plus 1%	Standard basis but with salary increase rate increased by 1%
Salary minus 1%	Standard basis but with salary increase rate increased by 1%
CPI plus 1%	Standard basis but with CPI increase rate increased by 1%
CPI minus 1%	Standard basis but with CPI increase rate decreased by 1%
Rate of salary increase 3.5% per annum.	This assumption is consistent with certain whole of government projections.

5.3.7 Administration Expenses

In the previous valuation the level of administration expenses assumed for each Scheme were as follows:

SASS	2.5% of total contributions assuming that employer contributions are 1.5 times member contributions.
SANCS	2.5% of 2.5% of salaries
SSS	1.0% of (benefit payments plus total contribution income) assuming that employer contributions are 1.5 times member contributions.
PSS	0.625% of benefit payments

The total expenses over the three years for each of the Schemes participating in the Pooled Fund are as follows:

Three years to 30 June 2009	Total Pooled Fund $m
Actual expenses	101.5
2006 actuarial basis expense estimate	112.1

The expense assumptions adopted for previous investigations for SASS, SANCS and SSS were based on future member and employer contributions. As the schemes mature, there will be fewer contributors compared to members receiving benefits (in particular pensioners). Thus it is appropriate to move towards an expense base related to benefit payments. Actual expenses were 1.15% of benefit payments over the three year period to 30 June 2009. If it is assumed that SASS contributors continue to have an expense charge deducted from contributions, and a small component of the employer expense cost in respect of SSS and PSS is related to member contributions actual non-contribution related expenses were 0.98% of benefit payments.

The proposed administration expenses assumptions for each Scheme are as follows:

SASS	1.0% of employee contributions (assumed deducted from member accounts) plus 1.0% of benefit payments.
SANCS	1.0% of benefit payments.
SSS	1.0% of employee contributions (not deducted from member reserves) plus 1.0% of benefit payments.
PSS	1.0% of benefit payments

If this approach had been adopted for the three years to 30 June 2009 the expected expenses would have been $111.8 million.

5.3.8 Tax

Contributions tax is assumed to continue at 15% of employer contributions net of expenses and notional death and disability premiums.

5.4 Demographic Assumptions

5.4.1 A detailed analysis of the experience of the Schemes during the three year period to 30 June 2008 has been carried out to compare the experience with the assumptions made at the previous investigation. In addition comparisons were made for some elements of the basis with the analysis of the experience of the period 1 July 2002 to 30 June 2005.

Rates of exit vary by age and sex as is to be expected. For some types of exit, rates also vary by occupation group. SASS Part 3 forms a different occupation group to Part 1 and experiences different resignation and retirement rates. Rates of early retirement and rates of commutation also vary between Schemes. Members tend to optimise their own benefits.

We have formulated assumptions based on the experience of each of the Schemes. In setting these rates we have adopted realistic rates rather than retaining any margins for conservatism.

The following sections describe how the valuation basis was determined. Volume II contains a detailed specification of the basis.

5.5 Contributor Assumptions

5.5.1 Rates of salary increase

The future rates of salary increase assumed comprise two elements:

1. An underlying rate of increase in respect of inflation and general productivity increases. This is dealt with under economic assumptions; and

2. An age-specific promotional increase scale.

Based on the experience in the three years to 30 June 2008 there was no significant difference in promotional rates of salary increase between Schemes, nor was there any significant difference between males and females. The promotional scale adopted is the same as used in the 2006 valuation.

5.5.2 Rates of resignation

Complete sets of rates of resignations are included in Volume II. The changes from the previous investigation are summarised in the following table:

SASS	➢ Male and female rates reduced for Part 3 by between 10% and 15% for all ages; no changes for Part 1.
SANCS	➢ As for SASS
SSS	➢ Male cash resignation rates reduced for most ages by about 40%, partially reversing increases for 2006. ➢ Female cash resignation rates for retirement age 60 reduced for all; no changes for retirement age 55 females.
PSS	➢ Male and female rates reduced by 50%, continuing the decreases for 2006.

5.5.3 Rates of deferral

We have analysed the assumed proportions of resigning members who will elect to preserve their benefits rather than take a cash benefit. The rates have been adjusted to reflect experience as follows:

SASS	➢ Small increases in proportions of resignations deferring benefit for ages under 45 for males and under 50 for females.
SANCS	➢ As for SASS.
SSS	➢ Male rates reduced by about 30% for all ages; and for females over age 46.
PSS	➢ Rates reduced by 75% at all ages.

5.5.4 Rates of mortality for contributors

The rates experienced were quite close to those assumed.

The rates used are as follows:

SASS, SANCS and SSS	➢ Rates equal to 35% of the rates in the Australian Life Tables 2000-02 (adjusted for improvements in mortality to 2008)
PSS	➢ Slightly higher overall mortality rates are assumed as a "killed on duty" decrement is added to the standard rates. The killed on duty rates are unchanged from the previous investigation.

5.5.5 Rates of disablement for contributors

The disablement experience of SASS, SSS females and SANCS was lower than expected. However, the experience of PSS was significantly higher than expected.

The rates of disability assumed at this valuation are as follows:

SASS	➢ Male total disablement rates reduced to 90% of previous levels for ages under 45, 60% for ages 46 to 50 and 55% at higher ages. The proportions incurring partial disablement were adjusted to approximately maintain unchanged assumed levels of partial disablement. ➢ Female total disablement rates reduced to 65% of previous levels. As for males, the partial disablement proportions were adjusted to approximately maintain the 2006 assumed level of partial disablement.
SANCS	➢ Rates assumed at a weighted average of SASS combined TPI + PPI rates and SSS rates.
SSS	➢ Male rates unchanged from 2006, female rates reduced to 85% of 2006 levels.
PSS	➢ Significantly higher rates are incorporated in this valuation. For not hurt on duty disablements rates assumed are 20% higher than previously assumed rates. Hurt on duty rates assumed are 40% higher than 2006 rates.

5.5.6 Rates of retirement

The rates were fine-tuned to reflect the experience:

SASS	➢ All rates have been adjusted reflecting the trend to later retirement.
SANCS	➢ For Part 1, rates have been adjusted to reflect a weighted average of combined SASS & SSS membership. Part 3 as for SASS.
SSS	➢ Male rates and rates for females retiring at age 60 have been reduced; rates for females retiring at age 55 increased.
PSS	➢ Rates have been reduced at all ages to correspond with the experience.

No allowance has been made for late retirements in PSS. For SSS late retirement rates to age 65 have been retained and in SASS and SANCS late retirement rates to age 70 are adopted.

5.5.7 Rates of redundancy

The single largest factor in the experience affecting redundancies was the employer group, with Part 3 type employers under SASS experiencing the lowest rates. All groups also consistently experienced the lowest rates in the year 2007-2008.

For SASS Part 1, an allowance for 1.5% of members per annum to be made redundant was included in the basis in 2006. This has been retained. No allowance in other groups has been made.

5.5.8 Future contribution rates

In the period since 30 June 2006 about 83% of members did not reduce their contribution on attaining maximum points. Accordingly for this valuation we have assumed that 20% of members reduce their contribution to 1% on attaining maximum points and the remainder maintain their current contribution to retirement. This is a reduction from the 30% assumed for the 2006 valuation.

Rates of taking up optional units in SSS have been retained at the levels assumed for the previous investigation as these rates appear to be broadly in line with experience. (Optional units are those units for which contributions in excess of 6% salary are required.)

5.5.9 Distribution of new entrants

The Scheme is closed to new entrants and a distribution of new entrants is only used to derive theoretical contribution rates. The distribution used is the same as used for previous investigations and is set out in Volume II.

5.6 Pensioner Assumptions

5.6.1 Pensioner mortality

Mortality rates directly related to those in the Australian Life Tables 2000-02 were adopted for all pensioners. The experience showed a continuing trend of improvement in mortality and this has been reflected by the adoption of improvements at the ALT average 25 year rates ALT for years 2009-2015 and at average 105 year rates thereafter in the mortality rates for all pensioners.

SASS	➢ Based on experience the overall pensioner and spouse mortality has been retained at a similar level to the previous valuation, with rates adjusted at individual ages to a smooth proportion of the rates in the Australian Life Tables 2000-02 (including improvements to the relevant year). The same rates are used for the relatively few disability pensioners.
SSS	➢ Proportions were adjusted to reflect experience. This represents reductions at all ages for males averaging an overall reduction of about 8%, with significant reductions at the younger ages. For females, significant reductions were made at ages 55 to 85 and increases were effected at other ages. Over-all mortality rates for females were increased. Mortality rates for ill-health pensioners were reduced for disability pensioners under age 85 and increased for those over 85.
PSS	➢ For male retirement pensioners the same rates as for SASS are adopted; this is close to the 2006 basis. For disability pensioners the rates adopted are 100% of the SSS ill-health pensioner rates for ages up to 70, reducing to 67.6% from age 80 (but always limited to the normal retirement rate). Rates for hurt on duty pensioners the proportion varies from 40% at ages up to 50 to 100% at ages 60-70 reducing to the not hurt on duty rate from age 80. ➢ SSS rates are adopted for all female pensioners.

5.6.2 Proportion of members taking pension benefits & the proportion with spouse and dependants

The proportion of members electing to take lump sums over pension benefits when an election is available has reduced in all Schemes over the 3 year period. The assumed proportions commuting pensions (or taking lump sums) have been reduced for all Schemes for most types of pension.

For SASS, the proportion of members electing pension benefit of those eligible has been increased from 15% to 20%.

Commutation assumed for SSS has been reduced from 15% to 10% for retiring members with corresponding reductions for other types of pension.

For PSS, the proportion of members electing pension benefit of those eligible has been increased from 27.5% to 50%.

Assumptions as to proportions of contributors and pensioners married, age of spouse and the number and ages of children have been retained from the previous valuation for all but SSS retirement pensioners.

Proportions of pensioners with eligible spouse surviving at death in SSS have been adjusted to reflect experience. The proportions were increased by 15% for male retirement pensioners, 20% for disability pensioners. For females proportions were reduced by 25% for retirement pensioners over 80, and increased by 50% for breakdown pensioners. The assumed ages of spouses of SSS pensioners was retained unchanged.

5.7 Assets and Funding Indices

5.7.1 Valuation of assets

Accounting standards that govern the financial statements of superannuation funds in Australia require that assets be recorded at net market value; that is the market value of the asset at the valuation date less any costs of realisation.

For the purposes of the actuarial valuation it is essential that the assets and liabilities are valued on a consistent basis. Hence on the funding basis the liabilities have been valued at market rates of investment return to match the market value approach of the assets.

5.7.2 Funding indices

Three indices have been calculated whose progress from investigation to investigation provides an indication of comparative financial strength.

The indices calculated are:

Vested benefits index: the ratio of assets to vested benefits where a member's vested benefit is the amount he/she is entitled to as a cash benefit from the Scheme if he/she voluntarily leaves an employer at the investigation date.

Deferred benefits index: the ratio of assets to deferred benefits where a member's deferred benefit is the amount he/she is entitled to preserve in the Scheme if he/she voluntarily leaves an employer at the investigation date.

Accrued benefits index: the ratio of assets to accrued benefits where a member's accrued benefits are based on his/her service and contributions to the investigation date and on estimated final average salary.

6

6. Results of Valuation of Pooled Fund by Scheme

This section sets out the results of the valuation for each of the Schemes forming the Pooled Fund. Each section details the unfunded liability for the Scheme or Scheme sub-division and the theoretical contribution rate required to cover the outstanding liability.

6.1 SASS

6.1.1 SASS Employer's Reserve Unfunded Liability

Unfunded liability is defined as the value of accrued benefits less available reserves. The unfunded liability in the Employer's reserve for accrued benefits is set out below.

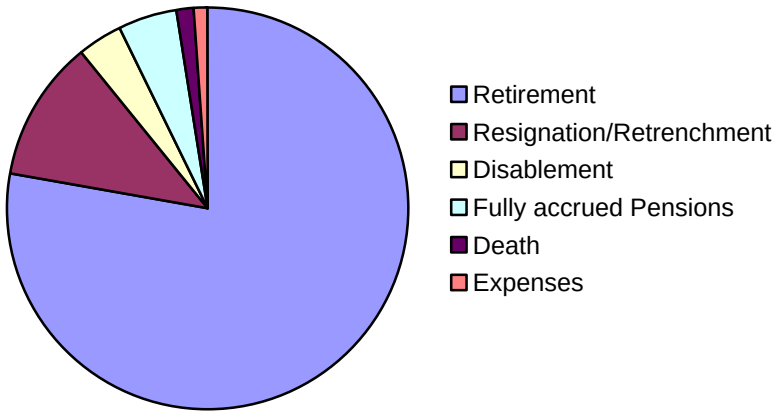
SASS Employers reserve		
	$m	**$m**
Present value of benefits (fully accrued) payable to existing pensioners		
▪ Pensions in course of payment	378.6	
▪ Reversionary pensions	44.4	
		423.0
Plus		
Present value of benefits payable in future to contributors in respect of service prior to the valuation date:		
▪ Male contributors	3,538.3	
▪ Female contributors	2,876.5	
		6,414.8
Plus		
Present value of administration expenses in respect of accrued benefits		68.4
Less		
Amount of fund		2,886.1
Gives		
Unfunded past service liability		4,020.1

This balance sheet is an aggregate for all SASS employers and includes both Part 1 and Part 3 employers.

If the valuation assumptions of the 2006 investigation had been retained, then the unfunded liability would have been $4,135.2 million rather than $4,020.1 million.

The pie chart below shows the allocation, on the valuation assumptions, of the total employer liability between members resigning in future, retiring, becoming disabled or dying, as well as expenses of management.

Allocation of Total Employer Liability



6.1.2 Employer's Financial Progress

The SASS investigation as at 30 June 2006 revealed an unfunded past service liability in the Employers' Reserve of $3,088.0 million, whereas this investigation has shown an unfunded liability of $4,020.1 million as at 30 June 2009. The method used to analyse the change in unfunded liability is to assess the effect of differences between the assumptions made at the previous valuation and the actual experience of the inter-investigation period. The major effects on the unfunded past service liability have been:

- Rates of investment earnings were lower than expected, increasing the deficiency;
- Rates of salary increase were higher than expected, increasing the deficiency;
- CPI increases on pensions in payment were higher than expected, increasing the deficiency;
- In respect of exits later retirements and fewer exits overall gave rise to a small surplus;
- Contributions paid were higher than the increment in past service liability due to service over the 3 years. This is the effect of current funding of past service deficiencies;
- Following analysis of the experience, the valuation basis was altered, resulting in a decrease in the current liability.

Set out below is a summary of the progress of the unfunded liability, showing the estimated financial effect of the major items:

SASS Employers	
Item	**$m**
Unfunded past service liability as at 30 June 2006	3,088.0
plus interest to 30 June 2009 at old valuation rate	694.9
Deficiency due to lower than expected investment earnings	991.7
Deficiency due to higher than expected salary increases	126.0
Deficiency due to higher than expected CPI increases	10.2
Exits - surplus due to late retirements & fewer exits	-7.1
Excess of contributions above accrual	-779.8
Change in valuation basis at 30 June 2009	-115.1
Other sources and rounding	-11.3
Unfunded liability at 30 June 2009	4,020.1

6.1.3 Total employers' liabilities including benefits and contributions in respect of future service

The valuation balance sheet as at 30 June 2009 for the SASS Employer's reserve is set out below, taking into account total service benefits as well as expected future contributions, expenses and taxes.

SASS Employers' Reserve		
	$m	**$m**
Present value of benefits (fully accrued) payable to existing pensioners		
• pensions in course of payment	378.6	
• reversionary pensions	44.4	
		423.0
Plus		
Present value of benefits payable in future to current contributors in respect of service prior to the valuation date:		
• male contributors	3,538.3	
• female contributors	2,876.5	6,414.8
Present value of benefits payable in future to current contributors in respect of future service:		
• male contributors	911.9	
• female contributors	1,021.6	1,933.5
Plus		
Present value of future expenses of management		87.7
Less		
Amount of fund		2,886.1
Gives		
Amount to be funded by employer contributions		5,972.9

6.1.4 SASS Employers – Theoretical Contribution Rate

If the Part 1 employers and Part 3 employers each taken as a whole had always contributed to employer reserves on a basis to fully fund benefits over the full service of members, the theoretical ratios of employer to contributor contributions, based on the age and sex distribution of entrants for each Part, would be:

	Part 1	Part 3
Males	1.70	1.62
Females	1.78	1.65
All contributors	1.73	1.64

The reduction in the ratio from the 1.81 and 1.69 for Parts 1 and 3 respectively calculated at the previous investigation reflects the change in discount rate and later retirement rates adopted at this investigation.

Contributions expected to be required for individual employer groups to fully fund contributors in force (ie taking into account past service deficiencies) as at 30 June 2009 are provided in a separate report.

6.1.5 SASS Employer's Reserve – Indices and Financial Strength

The sum of cash vested benefits, deferred benefits and accrued benefits (as defined in Section 5 above) for each Employer group are provided outside this report. Where employers are funding benefits in advance, the funding indices, i.e. the ratio of assets to these sums, may be used in future comparisons to monitor relative financial strength.

Vested Benefits

The sum of vested benefits (as defined in Section 5 above) for SASS contributors in the Employers' Reserve amounted to $3,563.6 million as at 30 June 2009. Assets available to cover employer liabilities after fully covering benefits due to current pensioners are $2,458.9 million. Therefore the ratio of assets to vested benefits is $2,458.9 million/$3,563.6 million, ie 69.0%.

The progress of this index over recent investigations has been:

30 June 2003	0.65
30 June 2006	1.06
30 June 2009	0.69

Deferred Benefits

The sum of deferred benefits (as defined in Section 5 above) for SASS contributors in the Employers' Reserve amounted to $7,897.0 million as at 30 June 2009. Therefore the ratio of assets to deferred benefits is $2,458.9 million/$7,897.0 million, ie 31.1%.

The progress of this index over recent investigations has been:

30 June 2003	0.22
30 June 2006	0.45
30 June 2009	0.31

Accrued Benefits

The sum of the accrued benefits (as defined in Section 5 above) for SASS contributors amounted to $8,308.4 million as at 30 June 2009. Therefore the ratio of assets to accrued benefits is $2,458.9 million/$8,308.4 million, ie 29.6%.

The progress of this index over successive investigations has been:

30 June 2003	0.26
30 June 2006	0.51
30 June 2009	0.30

6.1.6 Sensitivity Tests – SASS employer reserves

In order to test the sensitivity of the results of the valuation to the economic assumptions made, the effect on the unfunded liability of varying each factor by plus or minus 1% was calculated. A further calculation was made using the last funding position basis, and another to show the effect of a "shock" in the rate investment return. The alternative bases used were:

a) Earned interest rate +1% (long term rate 8.3/9.3%p.a.)
b) Earned interest rate -1% (long term rate 6.3/7.3%p.a)
c) Inflationary salary increases +% (long term rate 5%)
d) Inflationary salary increases -1% (long term rate 3%)
e) CPI increases +1% (long term rate 3.5%)
f) CPI increases -1% (long term rate 1.5%)
g) Rate of salary increase 3.5% per annum.
h) Earned interest rate in the first year following the valuation of negative 10%.

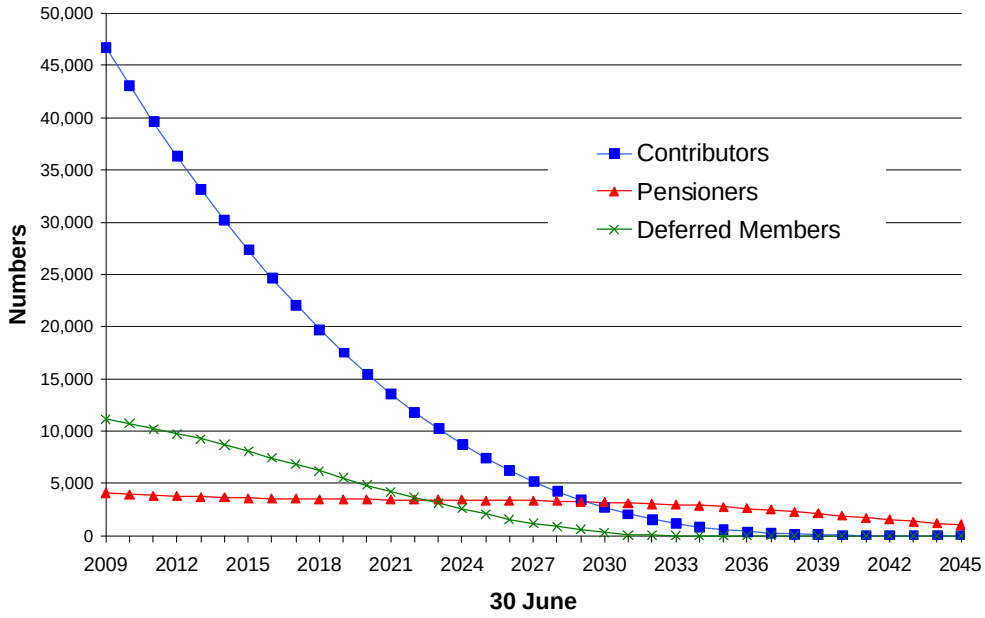
The table below shows the unfunded liability in the Employers' Reserve under SASS as at 30 June 2009 under each of the above assumptions.

Assumptions		**Employer Unfunded Liability $m**
Valuation basis		4,020.1
a)	+1% interest	3,534.8
b)	-1% interest	4,577.1
c)	+1% salary increase	4,495.8
d)	-1% salary increase	3,592.7
e)	+1% CPI increase	4,103.2
f)	-1% CPI increase	3,948.7
g)	Rate of salary increase 3.5% per annum thereafter	3,800.7
h)	-10% investment return in 2009-2010	4,519.5

6.2 Projections - SASS Scheme

The numbers of contributors, deferred benefit members and pensioners have been projected to 2045.

Total SASS Scheme - Projected Numbers of Contributors, Deferred Benefit Members and Pensioners



6.3 SANCS - Employers' Reserves

6.3.1 SANCS Employers' Reserves – Unfunded Liability

The unfunded past service liability for SANCS is set out below.

SANCS Employers reserve		
	$m	**$m**
Present value of benefits payable in future to contributors in respect of service prior to the valuation date[1]:		
▪ Male contributors	1,330.9	
▪ Female contributors	915.3	
		2,246.2
Plus		
Present value of administration expenses in respect of accrued benefits		22.5
Less		
Amount of fund		737.0
Gives		
Unfunded past service liability		1,531.7

[1] This figure includes the top-up benefit for Superannuation Guarantee requirements.

If the valuation assumptions of the 2006 investigation had been retained, then the unfunded liability would have been $1,565.6 million rather than $1,531.7million.

6.3.2 SANCS Employers - Theoretical Contribution Rate

If all employers taken as a whole had always contributed to the scheme on a basis to fully fund benefits, the theoretical rate of employer contribution, based on the past age and sex distribution of entrants for Part 1 and Part 3 employers and on the current actuarial basis, would be 2.3% of members' salaries.

6.3.3 SANCS Employers - Superannuation Guarantee Costs

When a contributor ceases service, the total benefit payable from SANCS and the associated fund (SASS, SSS or PSS) is compared with the minimum benefit payable under the Superannuation Guarantee legislation (refer Volume II). If there is a shortfall the difference is made up from the SANCS reserves.

The present value of the total liability for top-up payments in respect of all members is:

In respect of members who also contribute to:	$m
SASS	57.2
SSS	0.1
PSS	1.7

The total top-up represents a contribution averaged over all employers of 0.1% of members' salaries.

Note that the unfunded past service liability in section 6.3.1, includes allowances for these SG costs.

Also note that the value of the top-up liability is very sensitive to the assumptions made, as it is the difference between two larger amounts which can vary.

6.3.4 SANCS Employers' Reserve - Financial Progress

The SANCS investigation as at 30 June 2006 revealed an unfunded liability in the Employers' Reserve of $1,231.9 million. The main reasons for the increase in this liability to $1,531.7million at 30 June 2009 are set out below. The method used is to assess the effect of differences between the assumptions made at the previous valuation and the actual experience of the inter-investigation period.

- Rates of investment earnings were lower than expected, increasing the deficiency;
- Rates of salary increase were higher than expected, increasing the deficiency;
- There were slightly fewer exits than expected. Fewer exits give rise to a surplus as the accrued benefit is higher than the reserves held;
- Contributions net of tax actually paid were more than the rate of accrual of benefit, due to funding of past deficiencies;
- Following analysis of the experience, the valuation basis was altered, resulting in a decrease in the current unfunded liability.

Set out below is a summary of the progress of the unfunded liability, showing the estimated financial effect of the major items:

SANCS Employers' Reserve	
Item	**$m**
Unfunded liability as at 30 June 2006	1,231.9
Plus interest to 30 June 2009 at valuation rate	277.2
Deficiency due to lower than expected investment earnings	249.0
Deficiency due to higher than expected salary increases	67.4
Exits	-0.7
Excess of contributions over benefit accrual	-249.9
Change in valuation basis at 30 June 2009	-33.9
Other sources and rounding	-9.3
Unfunded liability at 30 June 2009	1,531.7

6.3.5 SANCS Employers - Valuation Balance Sheet including benefits and contributions in respect of future service

The valuation balance sheet for the Employers Reserve is set out below:

SANCS Employers Reserve	
Value of benefits payable in future to current contributors in respect of service prior to the valuation date*:	**$m**
• male contributors	1,330.9
• female contributors	915.3
Plus	
Present value of benefits payable in future to current	
contributors in respect of future service*:	
• male contributors	465.6
• female contributors	341.3
Plus	
Present value of future expenses of management	30.5
Less	
Amount of fund	737.0
Gives	
Deficiency	2,346.6

* includes allowance for SG top-up benefits

6.3.6 SANCS Employers' Reserve - Index

The sum of the accrued benefits (as defined in Section 5 above) for SANCS membership amounted to $2,843.0 million as at 30 June 2009. Therefore the ratio of assets to accrued benefits is $737.0million/$2,843.0million ie 25.9%.

The progress of this index over successive investigations has been:

30 June 2003	0.18
30 June 2006	0.41
30 June 2009	0.26

6.3.7 Sensitivity Tests - Combined employer reserves

In order to test the sensitivity of the results of the valuation to the economic assumptions made, the effect on the unfunded liability of varying each factor by plus or minus 1% was calculated. A further calculation was made using the last funding position basis, and another to show the effect of a "shock" in the rate investment return. The alternative bases used were:

(a) earned interest rate +1% (long term rate 8.3%p.a)
(b) earned interest rate -1% (long term rate 6.3%p.a)
(c) inflationary salary increases +1% (long term rate 5%)
(d) inflationary salary increases -1% (long term rate 3%)
(g) Rate of salary increase 3.5% per annum
(h) -10% investment return in 2009-2010

(Variations in CPI have no effect on SANCS results, so alternatives (e) and (f) are omitted.)

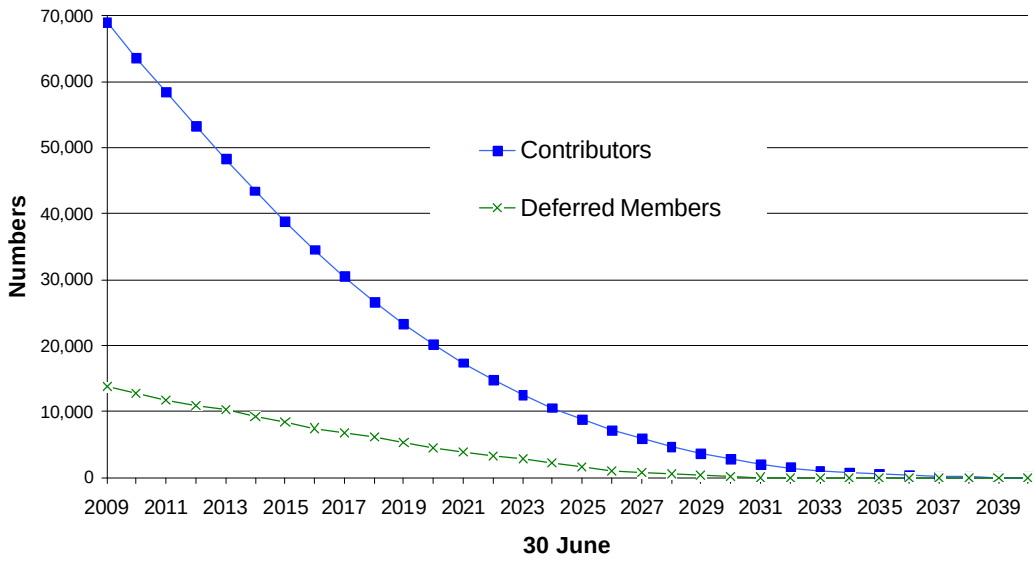
The table below shows the unfunded liability in the Employers' Reserve under SANCS under each of the above assumptions.

Assumption		Employer Unfunded Liability $m
Valuation basis		1,531.7
(a)	+1% interest	1,388.1
(b)	-1% interest	1,693.5
(c)	+1% salary increase	1,694.5
(d)	-1% salary increase	1,384.8
(g)	Rate of salary increase 3.5% per annum	1,456.4
(h)	-10% investment return in 2009-2010	1,661.3

6.4 Projections for SANCS

The numbers of contributors and deferred members have been projected to 2039.

SANCS Scheme - Projected Numbers of Contributors and Deferred Benefit Members



6.5 SSS – Valuation of Liabilities

This section sets out the results for SSS. The valuation of the liabilities includes both Employer and Contributor Reserves.

6.5.1 Unfunded liability

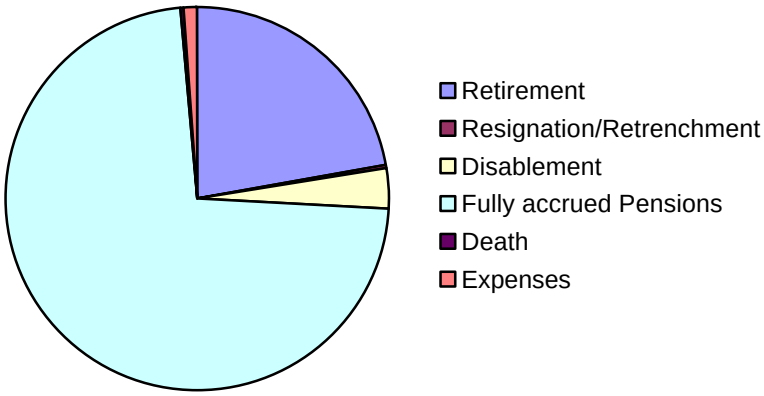
The unfunded liability for accrued benefits is set out below.

SSS		
	$m	**Total $m**
Present value of benefits (fully accrued) payable to existing pensioners		
• pensions in course of payment	16,880.8	
• reversionary pensions	892.4	17,773.2
Plus		
Present value of benefits (fully accrued) payable to existing deferred members	621.3	621.3
Plus		
Present value of benefits payable in future to contributors in respect of service prior to the valuation date:		
• male contributors	6,467.1	
• female contributors	2,925.1	9,392.2
Plus		
Present value of expenses in respect of accrued benefits		277.9
Less		
Amount of fund, including both Member and Employer Reserve adjustments (refer Volume II)		17,321.9
Gives		
Unfunded past service liability		10,742.7

If the valuation assumptions of the 2006 investigation had been retained, then the unfunded liability would have been $11,797.8 million rather than $10,742.7 million.

The pie chart below shows the allocation, on the valuation assumptions, of the total employer liability between fully accrued pensions, members resigning in future, retiring, becoming disabled or dying, as well as expenses of management.

Allocation of Total Employer Liability



6.5.2 Unfunded superannuation liability - financial progress

The SSS investigation as at 30 June 2006 revealed an unfunded liability of $8,152.1 million. The main reasons for the increase in the unfunded liability to $10,742.7 million at 30 June 2009 are set out below. The method used is to assess the effect of differences between the assumptions made at the previous valuation and the actual experience of the inter-investigation period.

- Rates of investment earnings were lower than expected, increasing the unfunded liability. This effect is compounded as the investment earnings shortfall on contributor reserves does not correspondingly reduce the total liability;
- Rates of salary increase were higher than expected, increasing the deficiency;
- CPI increases in pensions were higher than expected, giving rise to a deficiency;
- In respect of exits, lower than expected commutation of pension increased the unfunded liability. Fewer than expected early retirements contributed towards surplus;
- Contributions during the investigation period were lower than the accrual of benefits, due in part to Crown funding strategies;
- In 2006-7 the balance of the GGLMF ($7.2 billion) was transferred into the Pooled Fund and used to extinguish pre-June 1988 liabilities, mainly in SSS and PSS. $4.2 billion was transferred to the SSS employer reserve;
- Following analysis of the experience, the valuation basis was altered, resulting in a decrease in the liability.

Set out below is a summary of the progress of the unfunded liability, showing the estimated financial effect of the major items:

SSS	
Item	**$m**
Unfunded past service liability as at 30 June 2006	8,152.1
plus interest to 30 June 2009 at old valuation rate	1,963.9
Deficiency due to lower than expected investment earnings	5,956.5
Deficiency due to higher than expected salary increases	150.4
Deficiency due to higher than expected CPI increases	438.2
Exits - deficiency due to lower commutation of pension	83.2
- surplus due to later retirements	-6.7
Excess of accrual over contributions	250.9
GGLMF allocation	-5,152.5
Change in valuation basis at 30 June 2009	-1,055.1
Other sources and rounding	-38.2
Unfunded liability at 30 June 2009	10,742.7

6.5.3 Total liability including benefits and contributions in respect of future service

The valuation balance sheet as at 30 June 2009 for the State Superannuation Scheme is set out below, taking into account total service benefits as well as expected future contributions, expenses and taxes.

SSS		
	$m	**Total $m**
Present value of benefits (fully accrued) payable to existing pensioners		
• pensions in course of payment	16,880.8	
• reversionary pensions	892.4	17,773.2
Plus		
Present value of benefits (fully accrued) payable to existing deferred members	621.3	621.3
Plus		
Present value of benefits payable in future to contributors in respect of service prior to the valuation date:		
• male contributors	6,467.1	
• female contributors	2,925.1	9,392.2
Plus		
Present value of benefits payable in future to current contributors in respect of future service:		
• male contributors	1,311.8	
• female contributors	648.4	1,960.2
Plus		
Present value of future expenses of management		309.2
Less		
Present value of future contributions by employees		1,178.3

SSS		
	$m	**Total $m**
Less		
Amount of fund, including both Member and Employer Reserve adjustments (refer Volume II)		17,321.9
Gives		
Amount to be funded by employer contributions		11,555.9

We have calculated the Aggregate Employer Contribution Rate required over the future working life-time of current contributors to fully fund (after taking into account future employee contributions) all benefits, expenses and taxes arising from future service only. The required contribution is 0.79 times member contributions. Expressed as a level percentage of salary the contribution required is 11.8%.

6.5.4 Funding indices

Assets available for employer liabilities after fully covering benefits due to current pensioners and deferred members amount to negative $4,912.9 million. (ie employer reserve funds are currently insufficient by that amount to pay for pensioner and deferred members.)

Vested benefits are the benefits payable on immediate withdrawal from the scheme, ie normal or early retirement benefit if eligible or else the resignation benefit. The benefit may be taken as an immediate benefit or as a deferred benefit. The sum of the value of employer-funded vested benefits (taken as immediate benefits) is $4,069.6 million as at 30 June 2009. The sum of the value of vested deferred benefits is $5,269.5 million.

The progress of the funding indices over successive investigations has been:

	Vested Benefits	Deferred Benefits
30 June 1997	-0.45	-0.16
30 June 2000	1.31	0.96
30 June 2003	-0.34	-0.22
30 June 2006	-0.46	-0.32
30 June 2009	-1.21	-0.94

Accrued benefits as defined in section 5 above are the present value of retirement benefits expected to be payable in the future in respect of completed membership at the valuation, based on current salary. The total value of employer-financed benefits is allocated to past and future service using the proportional method. The total liability for accrued employer-financed benefits in respect of contributors is $8,175.6 million.

The progress of this index over successive investigations has been:

30 June 1997	-0.11
30 June 2000	0.64
30 June 2003	-0.18
30 June 2006	-0.27
30 June 2009	-0.60

6.5.5 Unfunded liability - sensitivity tests

In order to test the sensitivity of the results of the valuation to the economic assumptions made, the effect on the unfunded liability of varying each factor by plus or minus 1% was calculated. A further calculation was made using the whole of government assumed rate of salary increase, and another to show the effect of a "shock" in the rate investment return. The alternative bases used were:

(a)	earned interest rate +1% (long term rate 8.3%/9.3%p.a)
(b)	earned interest rate -1% (long term rate 6.3%/7.3%p.a)
(c)	inflationary salary increases +1% (long term rate 5%)
(d)	inflationary salary increases -1% (long term rate 3%)
(e)	CPI increases +1% (long term rate 3.5%)
(f)	CPI increases -1% (long term rate 1.5%)
(g)	Rate of salary increase 3.5% per annum
(h)	-10% investment return in 2009-2010

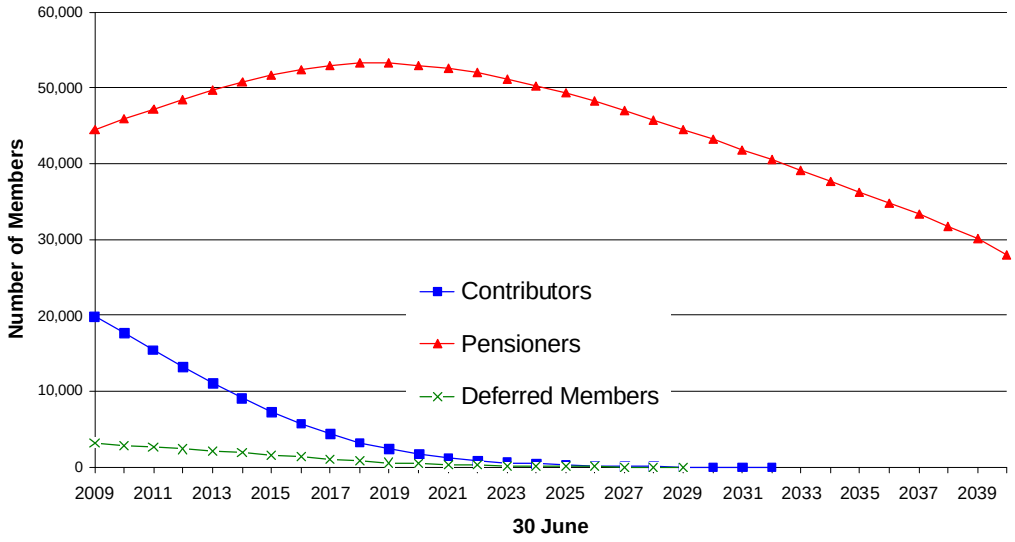
The table below shows the employer unfunded liability under SSS under each of the above assumptions.

Assumption		**Employer Unfunded Liability $m**
Valuation basis		10,742.7
(a)	+1% interest	8,041.4
(b)	-1% interest	14,007.4
(c)	+1% salary increase	11,053.4
(d)	-1% salary increase	10,450.7
(e)	+1% CPI increase	13,789.8
(f)	-1% CPI increase	8,156.4
(g)	Rate of salary increase 3.5% per annum	10,594.4
(h)	-10% investment return in 2009-2010	13,682.0

6.6 Projections for SSS

The number of contributors, deferred benefit members and pensioners have been projected to 2040.

SSS - Projected Numbers of Contributors, Pensioners and Deferred Benefit Members



6.7 PSS – Valuation of Liabilities

The PSS valuation liabilities include both Member Reserves and Employer Reserves.

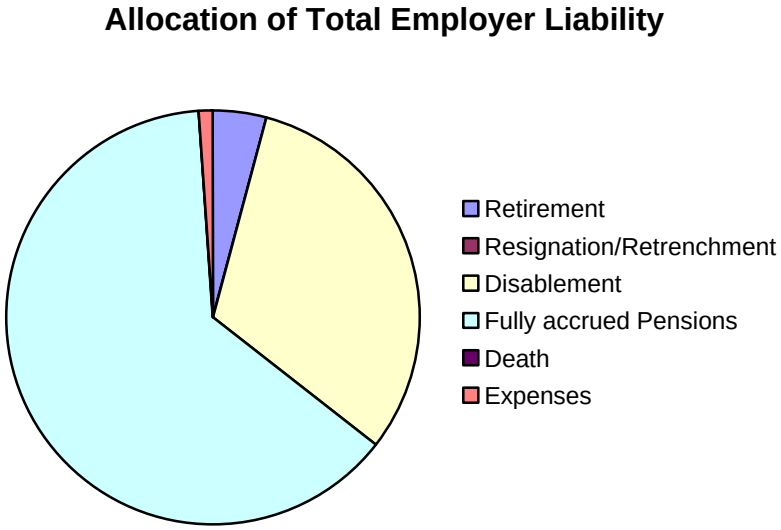
6.7.1 Unfunded liability

The unfunded liability for accrued benefits is set out below.

PSS		
	$m	**Total $m**
Present value of benefits (fully accrued) payable to existing pensioners		
• pensions in course of payment	3,941.9	
• reversionary pensions	133.7	4,075.6
Plus		
Present value of benefits (fully accrued) payable to existing deferred members		21.5
Plus		
Present value of benefits payable in future to contributors in respect of service prior to the valuation date:		
• male contributors	1,942.2	
• female contributors	220.2	2,162.4
Plus		
Present value of expenses in respect of accrued benefits		62.6
Less		
Amount of fund, including both Member and Employer Reserve adjustments (refer Volume II)		2,745.5
Gives		
Unfunded past service liability		3,576.6

If the valuation assumptions of the 2006 investigation had been retained, then the unfunded liability would have been $3,666.6 million rather than $3,576.6 million.

The pie chart below shows the allocation, on the valuation assumptions, of the total employer liability between fully accrued pensions, members resigning in future, retiring, becoming disabled or dying, as well as expenses of management.



6.7.2 Unfunded superannuation liability - financial progress

The PSS investigation as at 30 June 2006 revealed an unfunded liability to be met by the employer of $4,692.7 million. The main reasons for the decrease in the unfunded liability to $3,576.6 million at 30 June 2009 are set out below. The method used is to assess the effect of differences between the assumptions made at the previous valuation and the actual experience of the inter-investigation period.

- Rates of investment earnings were lower than expected, increasing the deficiency;
- Rates of salary increase were higher than expected, increasing the deficiency;
- CPI increases were higher than expected, increasing the shortfall;
- Significantly higher than expected disabilities gave rise to a deficiency. In respect of other exits, the rates of resignation were lower than expected, reducing anticipated surplus;
- Contributions during the investigation period were lower than the accrual of benefits, due in part to Crown funding strategies;
- In 2006-7 the balance of the GGLMF ($7.2 billion) was transferred into the Pooled Fund and used to extinguish pre-June 1988 liabilities, mainly in SSS and PSS. $3.2 billion was transferred to the PSS employer reserve;
- Following analysis of the experience, the valuation basis was altered, resulting in a decrease in the current unfunded liability.

Set out below is a summary of the progress of the deficiency, showing the estimated financial effect of the major items:

PSS	
Item	**$m**
Unfunded past service liability as at 30 June 2006	4,692.7
plus interest to 30 June 2009 at old valuation rate	1,128.9
Deficiency due to lower than expected investment earnings	1,079.0
Deficiency due to higher than expected salary increases	78.8
Deficiency due to higher than expected CPI increases	98.4
Exits - deficiency due to high disabilities	117.7
- deficiency due to lower than expected resignations	18.0
Excess of accrual over contributions	245.9
GGLMF transfer	-3,835.5
Change in valuation basis at 30 June 2009	-86.9
Other sources and rounding	39.6
Unfunded liability at 30 June 2009	3,576.6

6.7.3 Total liability including benefits and contributions in respect of future service

The valuation balance sheet as at 30 June 2009 for the Police Superannuation Scheme is set out below, taking into account total service benefits as well as expected future contributions, expenses and taxes.

PSS		
	$m	**Total $m**
Present value of benefits (fully accrued) payable to existing pensioners		
• pensions in course of payment	3,941.9	
• reversionary pensions	133.7	4,075.6
Plus		
Present value of benefits (fully accrued) payable to existing deferred members		21.5
Plus		
Present value of benefits payable in future to contributors in respect of service prior to the valuation date:		
• male contributors	1,942.2	
• female contributors	220.2	2,162.4
Plus		
Present value of benefits payable in future to contributors in respect of future service:		
• male contributors	460.6	
• female contributors	71.0	531.6
Plus		
Present value of future expenses of management		68.6
Less		
Present value of future contributions by employees at 6% of members' salaries		71.2

Less		
	$m	**Total $m**
Amount of fund, including both Member and Employer Reserve adjustments (refer Volume II)		2,745.5
Gives		
Shortfall to be met by future employer contributions		4,043.0

We have calculated the Aggregate Employer Contribution Rate required over the future working life-time of current members to fully fund (after taking into account future employee contributions) all benefits arising from future service only. The rate is 41.8% of members' salaries.

6.7.4 Funding status

PSS benefits are funded by a 6% contribution from in force membership, the balance being met by the Consolidated Fund. A funding strategy is in place to fully fund accrued benefits.

Assets available for contributors after fully covering benefits due to current pensioners and deferred members as well as covering contributor reserves amount to negative $1,714.0 million (ie funds are currently insufficient by that amount to pay for pensioner and deferred members and contributor reserves).

Vested benefits are the benefits payable on immediate withdrawal from the scheme, ie normal or early retirement benefit if eligible else the resignation benefit. The benefit may be taken as an immediate benefit or as a deferred benefit. The sum of the value of the vested benefits (taken as immediate benefits) is $144.2 million as at 30 June 2009. The sum of the value of vested deferred benefits is $541.0 million.

The progress of the shortfall in funding over successive investigations has been:

	Vested Benefits $m	**Deferred Benefits $m**
30 June 1997	-1,585.6	-1,692.7
30 June 2000	-844.8	-1,191.5
30 June 2003	-2,011.6	-2,360.8
30 June 2006	-2,980.9	-3,261.2
30 June 2009	-1,858.2	-2,255.0

6.7.5 Alternative bases - sensitivity tests

In order to test the sensitivity of the results of the valuation to the economic assumptions made, the effect on the unfunded past service liability of varying each factor by plus or minus 1% was calculated. A further calculation was made using the whole of government assumed rate of salary increase, and another to show the effect of a "shock" in the rate investment return. The alternative bases used were:

(a) earned interest rate +1% (long term rate 8.3%/9.3%p.a)
(b) earned interest rate -1% (long term rate 6.3%/7.3%p.a)
(c) inflationary salary increases +1% (long term rate 5%)
(d) inflationary salary increases -1% (long term rate 3%)

(e) CPI increases +1% (long term rate 3.5%)
(f) CPI increases -1% (long term rate 1.5%)
(g) Rate of salary increase 3.5% per annum
(h) -10% investment return in 2009-2010

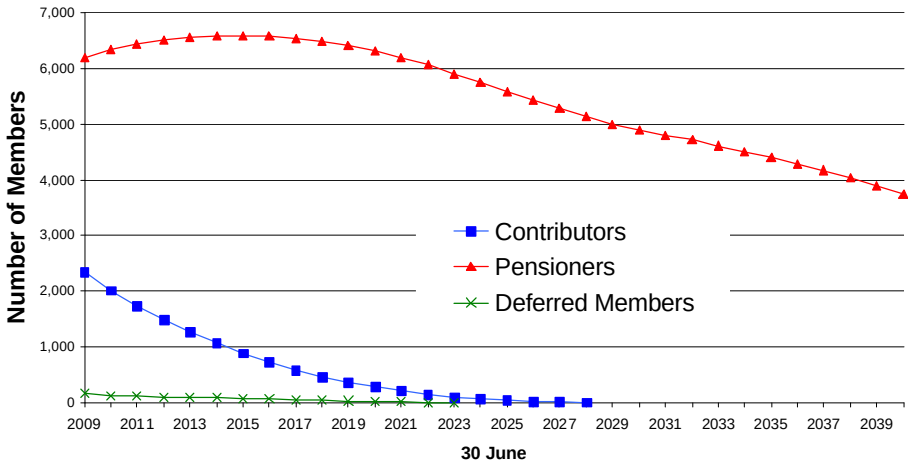
The table below shows the unfunded past service liability under PSS with each of the above assumptions.

Assumption		Unfunded Past Service Liability $m
Valuation basis		3,576.6
(a)	+1% interest	2,963.3
(b)	-1% interest	4,324.5
(c)	+1% salary increase	3,684.9
(d)	-1% salary increase	3,481.0
(e)	+1% CPI increase	4,248.8
(f)	-1% CPI increase	3,014.4
(g)	Rate of salary increase 3.5% per annum	3,526.5
(h)	-10% investment return in 2010-2011	4,065.9

6.8 Projections for PSS

The number of contributors, deferred benefit members and pensioners has been projected to 2040.

PSS - Projected Numbers of Contributors, Pensioners and Deferred Benefit Members

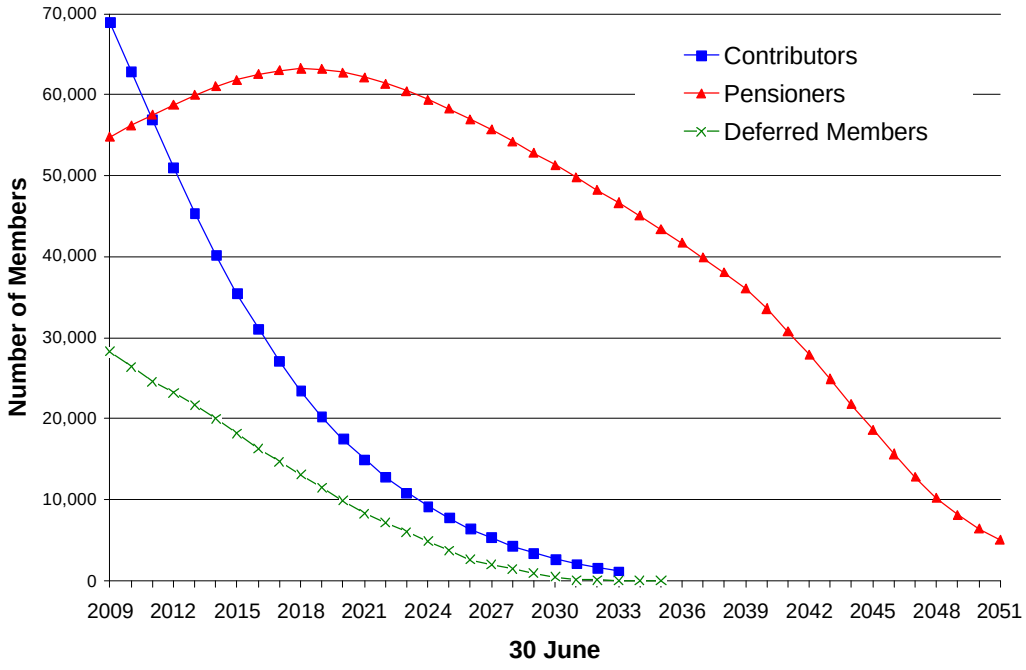


6.9 Total Pooled Fund Results

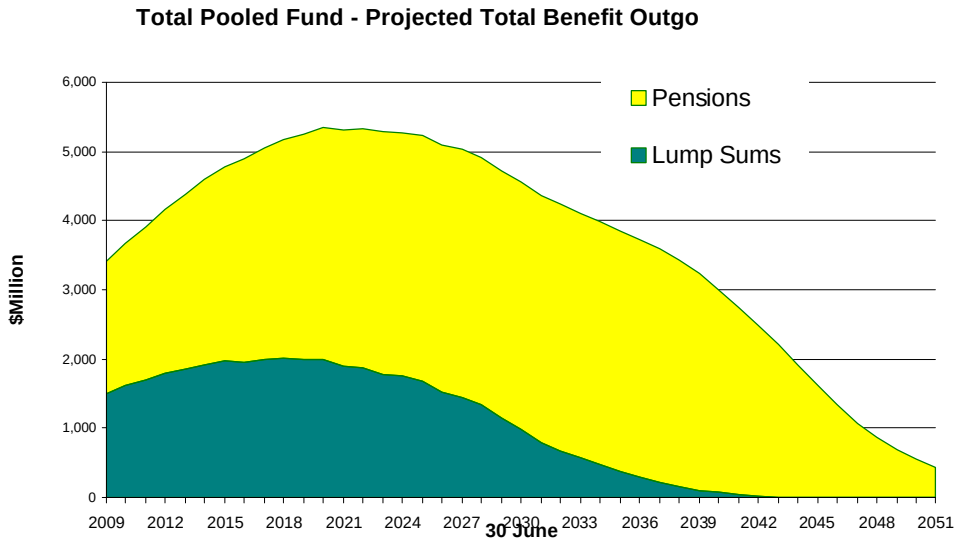
6.9.1 Consolidated Pooled Fund Projected Membership

The graph below shows projected numbers of contributors for the total Pooled Fund (excluding SANCS contributors as each SANCS contributor has an associated SASS, SSS or PSS membership), pensioners and deferred members.

Total Pooled Fund - Projected Numbers of Contributors, Pensioners and Deferred Members



6.9.2 Consolidated Pooled Fund Projected Total Benefits



7

7. Results of funding valuation by employer grouping

This section includes details of the funding plans of the General Government Sector and the Universities.

7.1 Employer groupings

The NSW Government has established a classification system to help apply appropriate financial and management controls across the range of State Sector organisations.

In broad terms, organisations are categorised according to their dependence on the public purse and on the level of competition with the private sector.

Consistent with the Government Finance Statistics framework, all entities controlled by the NSW Government (i.e. State Sector entities) are classified as General Government Sector or Non-General Government Sector.

General Government Sector agencies typically deliver public services or are regulatory in nature. There are both budget dependent and non-budget dependent general Government agencies.

Budget Dependent General Government Agencies (also called as Crown agencies)

Broadly, these are agencies that have more than half of their operating income funded from the Consolidated Fund. They are predominantly engaged in social (rather than commercial) activities and include all government departments.

Non-Budget Dependent General Government Agencies (also called Non Crown General Government Agencies)

These agencies have less than half of their operating income funded from the Consolidated Fund. They source funds from regulatory and user charges and in some cases a grant from a Budget dependent agency.

Non-General Government agencies (PTEs and PFEs)

These agencies are generally commercially focussed and include Public Trading Enterprises (PTEs) and Public Finance Enterprises (PFEs). They operate under the Commercial Policy Framework which aims to replicate disciplines and incentives that lead private sector businesses towards efficient commercial practices. They generally pay dividends and tax equivalent payments in accordance with normal commercial principles. The predominant PFE is NSW Treasury Corporation.

Another distinct grouping is the Universities sector.

The remaining employers are classified as "other".

7.2 Crown and Non-Crown General Government Sector

The financial position of the General Government Sector is:

General Government Sector	
	$billion
Present value of past service benefits	32.460
Value of assets	14.688
Deficiency	17.772

The 2009-10 Budget Statement outlined the NSW Government's funding plan for the General Government Sector. The plan is re-evaluated each year and adjusted for the actual experience in the preceding year.

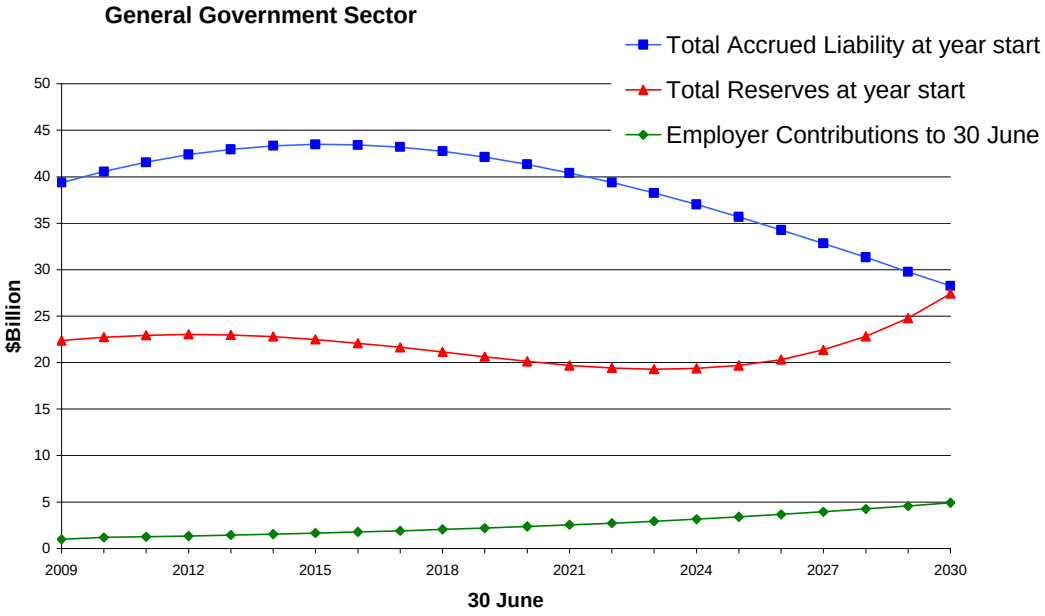
The Non-Crown General Government Sector employers are assumed to continue to contribute at recent levels of contributions as a percentage of salaries of members.

The contributions for the Crown are determined to fully fund the General Government Sector by 30 June 2030.

The approach to the methods and assumptions used by Treasury is identical to the approach to the methods and assumptions used in this report except that the rate of general salary increase used by Treasury is 3.5% per annum whereas the assumption adopted for this report is 4.0% per annum. This difference is non material and well within the range of acceptable assumptions.

Hence this investigation confirms that NSW Treasury's funding plan is expected to result in the General Government Sector being fully funded by 30 June 2030. That is, the assets at that date are expected to exceed the value of past service liabilities.

The following graph sets out the expected progress of assets and liabilities assuming that the rate of general salary increase is 3.5% per annum:



The employer contributions underlying the above graph are $1.12 billion increasing at 7.7% per annum.

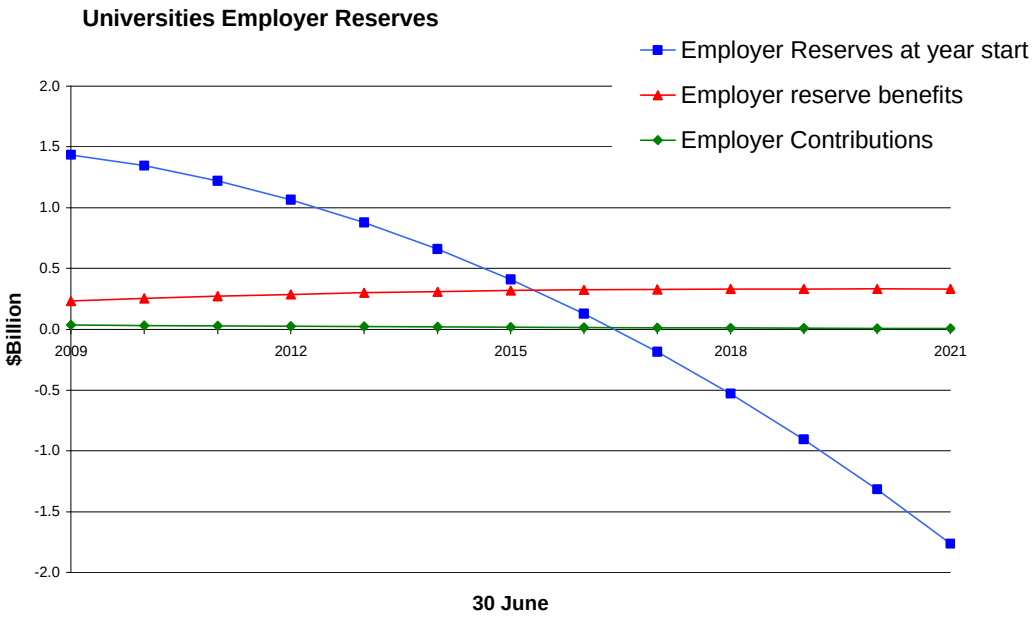
7.3 Universities

As an employer group, the financial position of the Universities is:

Universities	
	$billion
Present value of past service benefits	3.285
Value of assets	1.434
Deficiency	1.851

The current level of employer contributions to the Pooled Fund by the Universities is 17% of salaries.

This level is not sufficient, as the following graph of the employer reserves of the Universities shows:



That is, on average, the University sector is expected to have depleted its reserves in the 2016 / 2017 year.

On the current level of contributions individual University sub-funds are expected to exhaust their employer reserves over the period 2014/15 to 2021/22.

Legal advice obtained by the Trustee states that the Trustee cannot pay benefits once a sub-fund is exhausted. That is, other Pooled Fund assets are not available for a sub-fund in deficit.

Recently the NSW Government approached the Commonwealth Government highlighting concern about the funding shortfall of the Universities sector. However, negotiations between the Commonwealth Government and the New South Wales Government in respect of the responsibility for the Universities' superannuation deficit have been continuing for a very long time without resolution. If these negotiations are not resolved by 2014/15 then it is expected that the Trustee will not be able to meet the benefit payment obligation in respect of members of the affected University sub-funds.

I recommend that the Trustee urge the Commonwealth and New South Wales governments to reach agreement in respect of the funding of the Universities within a reasonable timeframe and to formally advise the Trustee of the decision reached.

7.4 PTEs and other employers

As a group, the financial position of the Public Trading Enterprises (PTEs) and other employers is:

PTEs and other employers	
	$billion
Present value of past service benefits	3.839
Value of assets	3.591
Deficiency	0.248

Possible individual funding plans for each employer are set out in a separate report.

8

8. Financial position valuation

This section sets out the results of the financial position valuation for the Pooled Fund as a whole.

8.1 Purpose of the financial position valuation

The financial position valuation is an assessment of the Pooled Fund on a stand alone scenario: a hypothetical situation where the Trustee does not rely on future contributions by the employer and where the Trustee thereby needs to be as certain as practicable that there are sufficient assets in the fund to meet the liabilities to members that have accrued to the date of the investigation. It is the financial position if the Trustee completely derisked the investments, and invested in Commonwealth bonds.

8.2 Process and assumptions

The process and assumptions for the financial position valuation are the same as for the funding valuation except for the rate of investment return and rate of discount.

The rate of investment return / rate of discount is assumed to be the ten year government bond rate, as a proxy for the rate of return of the riskless asset.

There are two caveats to deeming this rate to be riskless:

a. The actual dates of the cash flows of the liabilities are not knowable in advance as they depend upon future rates of inflation, salary increase and decrements. Hence complete matching is not possible.

b. A gross rate of investment return / discount has been used. This is not theoretically appropriate since the investment return is taxed in the accumulation phase. However it is a reasonable approximation since pension liabilities increasingly dominate the Pooled Fund.

8.3 Results

The results of the financial position for the employer financed section of the Pooled Fund are:

		$ million
	Value of employer accrued benefits	53,255.4
less	Employer reserve account	19,712.8
	Employer unfunded liability	33,542.6

8.4 Comparison with funding valuation

The employer unfunded liability on the funding valuation basis was $19.9 billion, compared with $33.5 billion unfunded liability on the financial position basis. The difference is the expected gain from the Trustee investing in more risky assets; it is also a measure of the value of the employer's covenant to meet the future liability obligations.

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