Interim Actuarial Investigation of the State Public Sector Superannuation Scheme (QSuper)

As at 30 June 2015

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1 Summary

As part of the 2015-16 State Budget, the Treasurer announced that an interim report on the funding position of the QSuper defined benefits scheme would be released annually, based on preliminary membership and other information. This is the first such Interim Report as at 30 June 2015 and **must be read in conjunction with the full triennial Valuation Report**[1], signed on 20 June 2014. In line with the legislative and prudential requirements to conduct comprehensive actuarial reviews triennially, these Interim Reports will provide updates of the funding position but are not intended to include recommendations for changes in practice.

With a portion of the assets backing the defined benefit superannuation liabilities held within the QSuper fund, the State contributes its share of benefit payments on a “last minute” basis. The State makes advance provision for this liability by accumulating investment assets in a reserve (the *Employer Fund*). Consistent with previous valuations and the stated and practised position of successive Governments over many years, the assets of the Employer Fund have been assumed to be available exclusively for that purpose.

The summary balance sheet for QSuper’s defined benefit liabilities as at 30 June 2015, based on the assumptions used for funding purposes, is shown in Table 1 below.

Table 1 Defined Benefit Balance Sheet at 30 June 2015 – Funding Basis

	$ millions		
	Past Service	Future Service	Total Service
Total Value of Benefits, Expenses & Tax	**22,920**	**6,311**	**29,231**
less **Value of QSuper Assets and Future Member Contributions**			
Market Value of QSuper Fund Notional DB Assets	5,072	0	5,072
Member Contributions	0	1,519	1,519
gives **Employer Liability**	**17,849**	**4,792**	**22,641**
less **Value of Employer Fund and Future Employer Contributions**			
Market Value of Employer Fund Assets	29,014	0	29,014
Employer Contributions after 2019-20	0	1,924	1,924
gives **Surplus / (Deficit) (Funding Basis)**	**11,165**	**(2,868)**	**8,297**

The accrued surplus of $11.16 billion compares with the $5.95 billion disclosed at the 2013 valuation, with the improvement primarily due to the strong investment returns since that review. The accrued surplus position is also higher than projected at the time of the State Budget due to favourable experience during 2014-15, including lower salary growth than assumed.

[1] See https://qsuper.qld.gov.au/~/media/PDFs/QSuper-public/Publications/Annual-report/actuarialreport2013.ashx?la=en

Whilst it is common actuarial practice to concentrate on the funding basis when determining contribution rates, the accounting basis[2] applicable to the Government's financial statements also provides a valuable illustration of the scheme's funding position, as shown in Table 2:

Table 2 Defined Benefit Balance Sheet at 30 June 2015 – Accounting Basis

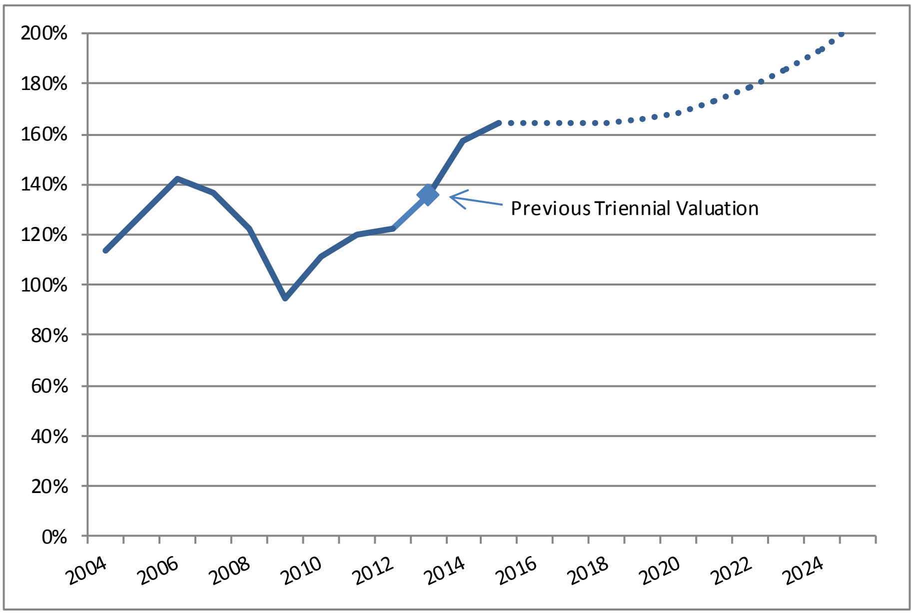
	$ millions		
	Past Service	Future Service	Total Service
Total Value of Benefits, Expenses & Tax	**30,277**	**9,785**	**40,061**
less **Value of QSuper Assets and Future Member Contributions**			
Market Value of QSuper Fund Notional DB Assets	5,072	0	5,072
Member Contributions	0	1,879	1,879
gives **Employer Liability**	**25,205**	**7,905**	**33,110**
less **Value of Employer Fund and Future Employer Contributions**			
Market Value of Employer Fund Assets	29,014	0	29,014
Employer Contributions after 2019-20	0	2,718	2,718
gives **Surplus / (Deficit) (Accounting Basis)**	**3,809**	**(5,187)**	**(1,378)**

The key difference between the funding and accounting bases is the assumption of expected earning rates for funding purposes, whilst the accounting basis uses risk-free discount rates. The difference in the surplus positions is effectively the present value of the risk premia expected to be earned from the asset allocation over the remaining time until the defined benefit liabilities are eventually extinguished. Whilst these returns are based on reasonable expectations, they are of course not available until earned.

The Treasurer also announced in the 2015-16 State Budget that the Government would be implementing a suspension of contribution investment for the five years to 2019-20. Whilst this has no effect on the accrued funding position as at 30 June 2015, the projected surplus level is expected to stay relatively flat during the suspension period before returning to a rising trajectory, and this is reflected in Figure 1 below.

[2] See Sections 4.1 and 5 for discussion of the differences between the funding and accounting bases.

Figure 1 Historical and Projected Accrued Liability Index – Active Members



In summary, the funding position of the scheme remains very strong. The next Interim Report will be undertaken using preliminary information as at 30 June 2016, with the comprehensive triennial Review also undertaken as at that date, using the final membership and other data.

W. H. Cannon
Fellow of the Institute of Actuaries of Australia
30 October 2015

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2 Introduction

2.1 Background

The provisions of the Superannuation (State Public Sector) Act 1990 (the *Act*) and the Superannuation (State Public Sector) Deed 1990 (the *Deed*) govern the operation of the State Public Sector Superannuation Scheme (*QSuper*). The Act established the scheme on 13 June 1990 and provided that QSuper conditions are governed by the Deed, which was gazetted on 23 June 1990. Throughout this Interim Report, the assets held within QSuper are referred to as the *QSuper fund*.

QSuper is a defined benefit scheme under the prudential supervision of Australian Prudential Regulation Authority (APRA) and in accordance with the Superannuation Industry (Supervision) Act and Regulations (SIS) and APRA Superannuation Prudential Standard SPS 160 a regular actuarial review is necessary. Furthermore, Section 19 of the Deed requires an investigation and report as to the state and sufficiency of the fund to be made by the Actuary periodically so that there shall not be a period longer than 3 years between successive such investigations. Such comprehensive actuarial investigations will continue to be conducted triennially with the next to be undertaken as at 30 June 2016.

As part of the 2015-16 State Budget, the Treasurer announced that an interim report on the funding position of the scheme would be released annually, based on preliminary membership data and other information. This is the first such Interim Report as at 30 June 2015. I also conducted the last triennial actuarial review of QSuper as at 30 June 2013, which was signed on 20 June 2014 (the *Valuation Report*). This Interim Report **must be read in conjunction with the Valuation Report**.

The character of QSuper changed considerably with the introduction of *Q2000*[3], on 1 May 2000. From that date, new permanent and temporary Queensland public sector employees joined the Comprehensive Accumulation Category by default and were able to transfer to the Standard Defined Benefit Category at any time in the future but on a once only basis. However, the Standard Defined Benefit Category was closed to new members from 12 November 2008. Standard Defined Benefit Category members are still allowed to transfer to the Comprehensive Accumulation Category on an open-ended basis. Casual employees join the Basic Accumulation Category and can opt to join the Comprehensive Accumulation Category, which requires member contributions.

2.2 Structure of the Scheme

QSuper has been designed as a “master plan” so that it is able to provide tailored superannuation coverage for all Queensland public sector employees, depending on the requirements of the relevant employing authority. As a result of various scheme mergers in the past, QSuper has retained membership categories for the members of the predecessor

[3] Q2000 was the name given to the project implementing the changes described herein. It is used for convenience in this report to refer to these changes.

schemes who have not elected to transfer to the main categories. In addition, QSuper introduced a new category (Non-Public Sector Accumulation) to allow non-government employers to make contributions on behalf of existing members. The membership categories are shown in the following table.

Category	Previous Scheme	Current Status
Standard Defined Benefit	QSuper	Closed to new entrants
Comprehensive Accumulation	–	Open to new permanent and temporary employees and transfers from the other categories, including casuals
Basic Accumulation	Government Officers' Superannuation Scheme (Gosuper)	Open to new casual employees, police cadets and others where nominated by non-core public sector employers
QAS Accumulation	Queensland Ambulance Service Superannuation Scheme (QAS Super)	Closed to new entrants
State 58	State Service Superannuation Fund (State Super)	Closed to new entrants
State 72	State Service Superannuation Fund (State Super)	Closed to new entrants
Police 68	Police Superannuation Fund (Police Super)	Closed to new entrants
Police 74	Police Superannuation Fund (Police Super)	Closed to new entrants
Fire	Queensland Fire Service Superannuation Plan (Fire Super)	Closed to new entrants and no active members remain
Parliament 70	Parliamentary Contributory Superannuation Fund (Parliamentary Super)	Closed to new entrants
Non-Public Sector Accumulation	–	Open to existing members where employer is not a unit of the State public sector

This Interim Report concentrates on the funding position of the **defined benefit categories**, which are all closed to new entrants.

Whilst the employees of most participating agencies are subject to the same basic benefit structure in the Standard Defined Benefit Category, the Police members have slightly different benefit conditions. In addition, the police have traditionally had higher rates of death and disablement than the remainder of the public sector. For these reasons, the police are considered as a separate sub-category within the Standard Defined Benefit Category and are valued separately with their own investigation assumptions. Consequently, throughout this report, the "non-police" members of the Standard Defined Benefit Category are referred to as *Standard* members.

The standard benefit payable from the Standard Defined Benefit Category is a defined benefit lump sum, although a pension benefit is available on exit due to total and permanent disablement (TPD). The standard benefit payable from the accumulation categories is a defined contribution lump sum, whilst the State, Police, and Parliamentary categories pay a variety of pension and lump sum benefits. A description of the standard benefits payable under each of the categories is contained in Appendix A of the Valuation Report.

2.3 Funding Arrangements

2.3.1 Defined Benefit Categories

The defined benefit categories are set up differently to a typical regulated scheme in that only employee contributions (including net salary sacrifice contributions) are deposited into the QSuper fund. Benefit payments from the scheme are determined according to the benefit rules as described in Appendix A of the Valuation Report. However, the State pays a share of these benefits as a last minute contribution to the QSuper fund. The State makes advance provision for its share of benefits in that, at the same time as member contributions are remitted, employing authorities are required to remit employer contributions to Queensland Treasury, which then deposits them in the Employer Fund[4]. The rate of employer contribution is reviewed at each triennial actuarial investigation. It will be noted that the Treasurer announced in the 2015-16 State Budget that investment of employer contributions into the Employer Fund would be suspended for five years until 2019-20. After that time, the previous arrangements described above will recommence.

QSuper's liabilities are effectively limited to the assets in the QSuper fund with the State providing a statutory guarantee in respect of the balance of the defined benefit obligations. However, the total liabilities of the defined benefit categories are the total benefits as described in the Deed and summarised in Appendix A of the Valuation Report. Consideration of the QSuper fund only would not give a comprehensive understanding of the funding of the scheme and hence, consistent with past practice, this report considers the overall funding of the scheme taking into account both the QSuper fund and the Employer Fund.

2.3.2 Accumulation Categories

The QSuper accumulation categories provide defined contribution benefits and both member contributions and employer contributions are deposited into the QSuper fund. Each member of the category has an account in their name into which the contributions are recorded. Net investment earnings are applied to the account and administration, insurance and taxation costs are deducted from the account. Benefit payments are made from the member's account. The benefits available to members are summarised in Appendix A of the Valuation Report.

2.4 Financial Information

The financial information used in this investigation comes from the draft Financial Statements for QSuper. Preliminary information relating to the Employer Fund has been obtained from Queensland Treasury and QIC.

[4] Throughout this report, the term *Employer Fund* refers to the investment assets accumulated in a reserve by the Government to meet its future superannuation obligations.

3 Membership

3.1 Data

The membership data upon which this Interim Report is based was provided by QSuper Ltd (QSL) *on a preliminary basis*. The data has not been through the data integrity processes that both QSL and we would apply in undertaking the comprehensive triennial actuarial investigation. A number of consistency checks have been applied to the data, both internally and compared to previous data. We have made adjustments where inconsistencies or absence rendered components of the data unusable, and believe that its overall quality is acceptable for the purposes of an Interim Report.

In addition, notwithstanding the fact that the investigation is undertaken as at *30 June* 2015, the *1 July* 2015 salaries were substantially available and they or an estimate of them have been used when calculating the scheme's liabilities. This provides a more realistic assessment of the scheme's financial position.

3.2 Membership Statistics

As the defined benefit categories of QSuper have been closed to new entrants since at least November 2008, the numbers within most member types has been declining over time, as shown in Table 3.

Table 3 Defined Benefit Membership by Type

	2013	2014 (prelim)	2015 (prelim)
Contributors			
Defined Benefit - Standard	52,137	48,092	44,976
Defined Benefit - Police	4,481	4,324	4,137
State	521	466	431
Police	135	128	121
Parliamentary	19	19	10
Former Contributors - Pensioners			
Defined Benefit	801	753	783
State	1,244	1,226	1,197
Police	216	211	205
Parliamentary	132	129	137
Fire	2	2	2
Former Contributors - Deferred			
Defined Benefit	38,475	36,998	35,180
State	353	317	275
Police	22	19	17
Total	**98,538**	**92,684**	**87,471**

4 Investigation of Assets and Liabilities

4.1 Funding and Actuarial Assumptions

Funding is the making of advance provision to meet the cost of accruing benefits. This provides a degree of security for members' benefits and also spreads the cost of providing these benefits over their membership. This setting aside of contributions as benefits accrue is what differentiates between funded and unfunded superannuation schemes. Whilst QSuper is technically an *unfunded* superannuation scheme, the funding arrangements and the assets maintained in the Employer Fund mean that, for the purposes of actuarial review, it can be regarded as a *funded* scheme.

In order to place a value on a defined benefit superannuation scheme's liabilities and to determine the contribution rates likely to meet the cost of benefits, it is necessary to make certain actuarial assumptions regarding the future experience of the scheme. These assumptions are based not only on the past experience of the scheme but also, *inter alia*, on views regarding the likely future values of economic factors such as the rate of investment return and salary inflation. Whilst each assumption should be reasonable in its own right, it is important to consider the actuarial basis as a whole as variations in one or more assumptions are often counterbalanced by consequent changes in other aspects of the basis. This Interim Review has been undertaken using the assumptions regarding member demographics and behaviour of the most recent triennial review, shown in Appendix C of the Valuation Report.

In this Interim Report, I have also considered liabilities derived in accordance with the relevant accounting standard within the Government's financial statements; viz. AASB 119. It requires that liabilities and expenses for employee entitlements be measured using actuarial techniques which incorporate specific assumptions regarding the discount rate applicable to the liability, financial variables such as salary and benefit inflation, and demographic variables such as turnover and mortality which affect the timing and amount of benefit payments. Whilst all of these assumptions are important, the discount rate and financial assumptions have the most effect on the results, with these listed in Appendix A of this Interim Report.

The AASB 119 net discount rate of 3.0% (risk-free) is well below the 7.0% assumed long-term investment return that has been used to calculate the superannuation liability under the funding basis. For the purpose of determining a funding strategy for superannuation as part of the triennial review, it is common actuarial practice that the present value of the liability should be based on the long-term earnings rate likely to be achieved through the actual investment strategy. Given a strategic asset allocation for defined benefit assets that includes a material allocation to growth assets, it is expected that the long-term earnings rate will exceed the long-term risk-free rate.

Whilst the funding basis is commonly used as part of the budgeting process underlying contribution rate recommendations, the accounting liabilities can provide useful information in assessing the funding position of the scheme, as discussed in Section 5.

4.2 Value of Assets

Consistent with previous valuations and the stated and practised position of successive Governments over many years, the assets of the Employer Fund have been assumed to be available exclusively to meet the defined benefit liabilities of QSuper.

The preliminary market values of the assets within both the QSuper fund in respect of the defined benefit members and the Employer Fund at the valuation date are shown in Table 4.

Table 4 Preliminary Asset Values at Interim Report Date

As at 30 June 2015	$ million
QSuper Fund Notional DB Assets	5,072
Employer Fund	29,014

The preliminary values of the QSuper fund and Employer Fund assets were derived from the **draft** QSuper financial statements and Queensland Treasury/QIC respectively.

5 Investigation Results

The results of this interim review in respect of defined benefit members (including former members with preserved or pension entitlements) at the investigation date can be summarised in the balance sheet shown in Table 5.

Table 5 Defined Benefit Balance Sheet at Current Contribution Rates – Funding Basis

	$ millions		
	Past Service	Future Service	Total Service
Value of Assets and Future Member Contributions			
Market Value of QSuper Fund Notional DB Assets	5,072	0	5,072
Market Value of Employer Fund Assets	29,014	0	29,014
Member Contributions	0	1,519	1,519
Employer Contributions at Current Rates after 2019-20	0	1,924	1,924
Total Value of Assets (A)	**34,085**	**3,443**	**37,528**
Value of Benefits, Tax & Expenses			
Active Defined Benefit Members	16,638	5,358	21,996
Current and Contingent Pensioners	1,101	0	1,101
Former Defined Benefit Members	2,355	0	2,355
Disability Income Benefit	16	174	190
Surcharge Provision	(29)	0	(29)
Expenses	342	109	450
Value of Net Contributions Tax	2,499	671	3,170
Total Value of Benefits, Expenses & Tax (B)	**22,920**	**6,311**	**29,231**
Surplus / (Deficit) (A) - (B)	**11,165**	**(2,868)**	**8,297**

The balance sheet has been constructed on the basis that, subsequent to the cessation of the suspension period, employer contributions will be received at the employer contribution rates recommended at the previous triennial investigation. This is not well defined for the Standard Defined Benefit Category because the amount is dependent upon each member's contribution rate and part-time status. It has been assumed for this purpose that the average member contribution rate and part-time ratio will remain constant for each of the main membership groups, viz. Standard Males, Standard Females and Police.

Table 5 shows that, on the assumptions underlying the funding basis, the defined benefit scheme remains in a very healthy financial position. The employer contribution suspension will only take effect from 1 July 2015 and therefore has not affected the accrued component of the balance sheet. In order to gain a more comprehensive understanding of the financial position of the scheme, it is also important to consider the corresponding balance sheet derived in accordance with the accounting basis used in the Government's financial statements, as shown in Table 6.

Table 6 Defined Benefit Balance Sheet at Current Contribution Rates – Accounting Basis

	$ millions		
	Past Service	Future Service	Total Service
Value of Assets and Future Member Contributions			
Market Value of QSuper Fund Notional DB Assets	5,072	0	5,072
Market Value of Employer Fund Assets	29,014	0	29,014
Member Contributions	0	1,879	1,879
Employer Contributions at Current Rates after 2019-20	0	2,718	2,718
Total Value of Assets (A)	**34,085**	**4,598**	**38,683**
Value of Benefits, Tax & Expenses			
Active Defined Benefit Members	21,805	8,294	30,099
Current and Contingent Pensioners	1,662	0	1,662
Former Defined Benefit Members	2,844	0	2,844
Disability Income Benefit	16	216	232
Surcharge Provision	(29)	0	(29)
Expenses	450	168	617
Value of Net Contributions Tax	3,529	1,107	4,635
Total Value of Benefits, Expenses & Tax (B)	**30,277**	**9,785**	**40,061**
Surplus / (Deficit) (A) - (B)	**3,809**	**(5,187)**	**(1,378)**

The difference in the surplus positions between the funding and accounting bases is effectively the present value of the risk premia expected to be earned from the asset allocation over the remaining time until the defined benefit liabilities are eventually extinguished. Whilst these returns are based on reasonable expectations, they are of course not available until earned. In the usual context where contribution rates are the key mechanism for defined benefit funding management, they can be considered as a budgeting estimate, which are adjusted as investment returns and other aspects of scheme experience emerge over time.

The accounting basis can be considered to provide a view of the solvency position of the scheme in that it does not require the sponsor and therefore future generations of taxpayers to guarantee risky investment returns. The extent of intergenerational risk transfer is linked to the strategic investment strategy for the assets, which is selected by the QSuper Board and Government, taking into account their collective risk preferences. Putting aside the conceptual differences between the two bases, it is important to recognise the practical reality that the Government is required to include the accounting liabilities within its overall balance sheet. Consequently, whilst the accounting view does not drive recommendations of contribution rates, it can provide useful context when considering the overall funding position of the scheme.

The deficit in respect of future service when contributions are made at the current rates under either basis is indicative that the value of future accruals is greater than the existing employer contribution rates. This shortfall is not problematic in itself and is taken into account with the accrued surplus position when considering the recommended level of contributions. It will also be noted that the effect of the suspension of employer contribution investment is demonstrated in the larger future service deficits than observed in the Valuation Report.

6 Funding Status

This section of the Interim Report looks at the extent to which QSuper would be able to meet benefits accrued to date, without taking into account future contributions, by deriving indices comparing assets with different benefit amounts. In order to allow a meaningful comparison to be made, the QSuper fund and the Employer Fund have been combined when determining the market value of assets for the purposes of calculating the various indices.

In addition, the indices have been projected for ten years following the investigation date, assuming that the previously recommended employer contribution rates are reinstated subsequent to the employer contribution suspension and that the valuation assumptions are exactly realised.

6.1 Vested Benefits

"Vested Benefits" are the benefits that would be payable had all members voluntarily resigned on the investigation date. Total vested benefits would usually be regarded as the bare minimum that should be covered by a scheme. This relationship is usually expressed as an index defined as the ratio of assets to vested benefits, or VBI.

The vested benefits have been calculated as the total of all resignation benefits or, for eligible members, early retirement benefits that would have been payable to members *at the investigation date* plus the value of former members' preserved benefits and pensions in payment. The value of the vested benefits has been adjusted to reflect the contribution tax liability that would become payable if all members were to resign.

As at 30 June 2015, the VBI in respect of active defined benefit members only was 140.5%.

It is usual to look at the progress of the various indices from investigation to investigation. An increase in an index would generally indicate a strengthening of a scheme's financial position while a decrease would indicate a weakening. The VBI for active defined benefits members at the last triennial investigation was 117.1%. The improvement is due mainly to the strong investment returns achieved since the last investigation, combined with lower than assumed salary growth.

Figure 2 shows the vested benefits index for the last several years as well as its projection for the ten years following the investigation date. In must be noted that the vested benefits depend on the actuarial valuation assumptions, substantially because the withdrawal benefit for defined benefit members is the deferred AWOTE linked retirement benefit. Consequently, the values over time aren't strictly comparable but the broad trends are still meaningful.

Figure 2 Historical and Projected Vested Benefits Index – Active Members

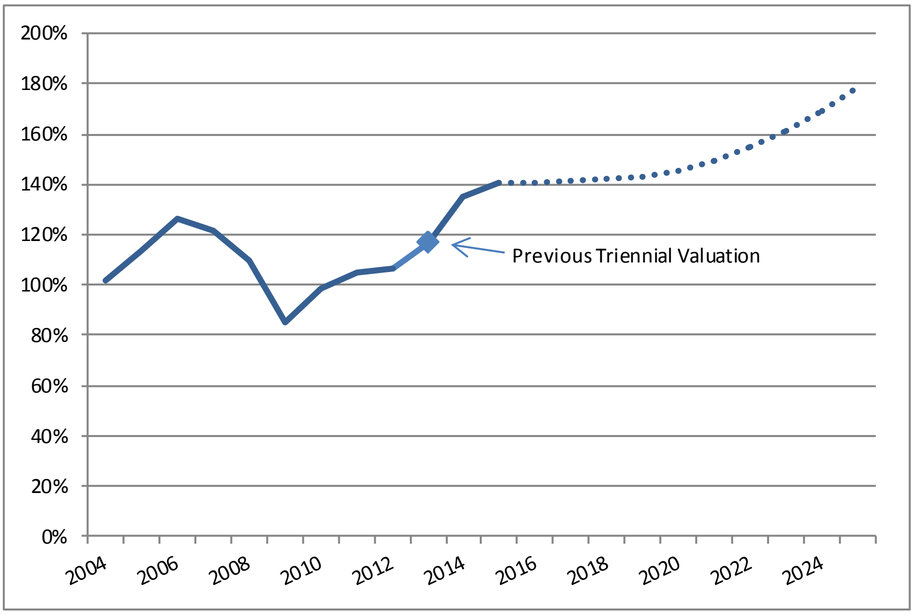


Figure 2 demonstrates that the vested benefits of active members are expected to remain adequately covered by the corresponding overall scheme assets. Growth in the VBI is subdued during the suspension of contribution investment but returns to a growth trajectory, substantially due to the investment return earned on the existing surplus.

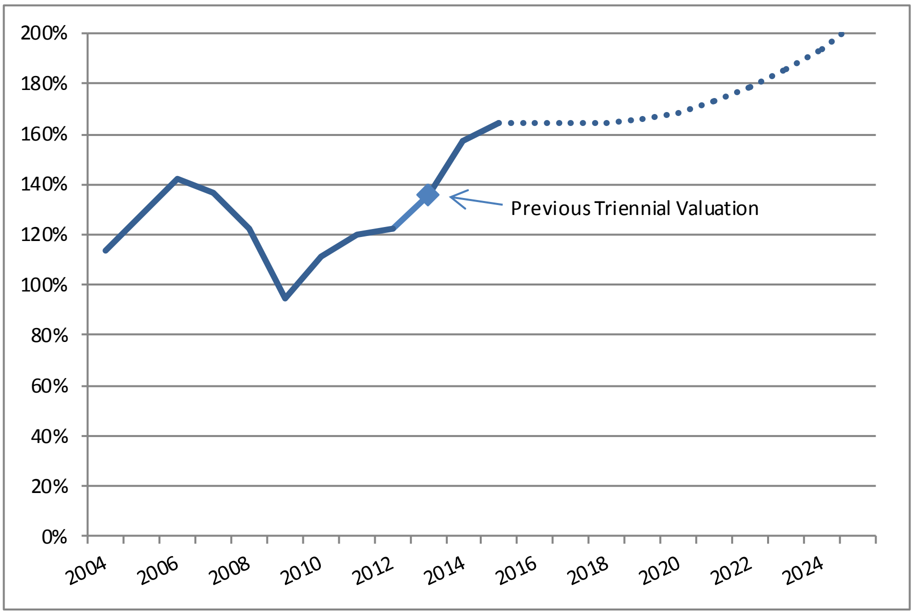
6.2 Actuarial Value of Accrued Benefits

An additional funding indicator which takes into account the liability accrued from service prior to the investigation date for all types of benefit is the present value of accrued liabilities. This can be presented in the form of an index defined similarly to those described above. As at the investigation date, the actuarial value of accrued benefits index (AVABI) in respect of active defined benefit members only was 164.1%.

The equivalent index in respect of active defined benefit members at the last triennial investigation was 135.8%. The increase in the AVABI is again indicative of the strengthening of the scheme's financial position and is largely due to the high investment returns since the last investigation, combined with lower salary growth than assumed.

The historical and projected AVABI for the ten years following the investigation date is shown in Figure 3. Similarly to the VBI, the index is dependent on the valuation assumptions and so the values over time are not strictly comparable, although the broad trends are meaningful. Figure 3 demonstrates that the funding position in respect of active members is expected to remain strong for the next several years, even allowing for the suspension of employer contributions until 2019-20. Subsequent to the reinstatement of employer contributions, the AVABI is expected to return to a growth trajectory, substantially due to the investment return earned on the existing surplus.

Figure 3 Projected Actuarial Value of Accrued Benefits Index – Active Members



6.3 Summary

The funding indices have increased since the last triennial review, primarily as a result of the higher than assumed investment returns since that time, combined with lower salary growth than assumed. Their absolute levels are high and indicative of the very strong funding position, measured on the funding basis, with the projected position expected to rise even further.

Appendix A
INVESTIGATION ASSUMPTIONS

A.1 Financial Assumptions Underlying Funding Basis

Table 7 Funding Basis Financial Assumptions

Discount Rate (Net Investment Return)	7.00%
Salary Inflation	3.75%
Price (CPI) Inflation	2.75%

A.2 Financial Assumptions Underlying Accounting Basis

The responsibility for selection of the key assumptions underlying employee entitlement liabilities under the relevant accounting standard (AASB 119) rests with the reporting entity; i.e. the Government. The assumptions chosen by the Government, based on my advice, necessary to derive figures in accordance with AASB 119 as at 30 June 2015 were as follows:

Table 8 Accounting (AASB 119) Basis Financial Assumptions

Gross Discount Rate	3.1%
Net Discount Rate (allowing for investment taxation)	3.0%
Salary Inflation	3.2%
Price (CPI) Inflation	2.2%

It will be noted that these assumptions are lower than the corresponding figures in the Valuation Report, in line with the reductions in nominal bond yields and implied inflation expectations since that time.

A.3 Demographic Assumptions

In the interests of brevity, readers are referred to the Valuation Report for a detailed description of the remaining valuation assumptions and their rationale.