

Isle of Man Public Service Pension Schemes

Actuarial Valuation as at 31 March 2018 for accounting
purposes

May 2018



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Accounting

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1 Introduction

Scope

- 1 I have been instructed by the Isle of Man Treasury (“the Treasury”) to undertake pension expense calculations for the Isle of Man public service pension schemes (“the Schemes”), for the purpose of complying with FRS102 for the period ending 31 March 2018.
- 2 These figures are prepared in accordance with my understanding of the latest version of FRS102. My calculations and advice in this report have been carried out in accordance with the Technical Actuarial Standard 100: Principles for Technical Actuarial Work, which came into force on 1 July 2017.
- 3 I understand that the results of my calculations will be included in the statutory accounts for the Isle of Man Government. This report does not constitute an audit opinion in relation to the Schemes.

Reliances and limitations

- 4 This report is provided to the Treasury solely for the purpose of complying with FRS102 for the period ending 31 March 2018. It should not be used for any other purpose.
- 5 This report has been prepared for the sole use and benefit of the Treasury and not for any other party. Hymans Robertson LLP makes no representation or warranties to any third party as to the accuracy or completeness of the report.
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- 9 The report must not be used for any commercial purposes unless Hymans Robertson LLP agrees in advance.
- 10 Note that the methodology of FRS102 means that the value of the liabilities identified in this report can vary significantly over short periods of time. This means that the results set out should not be taken as being applicable at any date other than 31 March 2018.
- 11 I have not been notified by the Treasury of the materiality limits which apply and I have therefore prepared these figures using methods which are as accurate as is feasible using the data made available to me and the timescale within which the report is required.

Next steps

- 12 I would be pleased to discuss this report with the Treasury and its auditors.

2 Approach

Background

- 1 The Isle of Man Government prepare accounts each year as at 31 March and these include pension disclosures in relation to the Schemes. As for the accounting disclosures as at 31 March 2017, the Treasury has confirmed that accounting disclosures for the Schemes as at 31 March 2018 will be prepared under accounting standard FRS102.

Valuation method

- 2 As required under FRS102, I have used the projected unit credit method of valuation.
- 3 I have projected forward the valuation results of the 31 March 2016 formal valuation to 31 March 2018 using approximate methods. The roll-forward allows for the changes in financial assumptions, additional benefit accrual, actual benefit outflows over the period and the effect of actual pension increase orders.
- 4 The current service cost is determined based on the assessed service cost as at 31 March 2017 (shown in the 2016/17 report) and pensionable payroll over the period (from the data provided).
- 5 In preparing the 2017/18 accounting figures, no allowance is made for the effect of changes in the membership profile since the latest formal valuation¹.
- 6 It is not possible to assess the accuracy of the estimated rolled-forward liability shown in Section 5 without conducting a full accounting valuation using updated individual membership data. Such a valuation is generally not practical in the time available to meet the reporting requirements. The estimated rolled-forward liability as at 31 March 2018 will therefore not reflect differences in demographic experience from that assumed (e.g. pensioner longevity) or the impact of differences between aggregate changes in salary/pension and changes for specific individuals.
- 7 Whilst I have no reason to believe that the approximations used in rolling forward the valuation to 31 March 2018 will introduce any undue distortion in the results, the Treasury and its auditors may wish to consider the size of the liabilities in relation to their materiality limits.
- 8 Whilst the liabilities calculated under FRS102 include an allowance for some premature retirements on grounds of ill-health, there is no allowance for any unreduced early retirements that may have been permitted or the award of any benefit augmentation on early retirement.
- 9 No allowance has been made for administration expenses in the figures provided. This is consistent with the approach taken in previous years.

Assets

- 10 FRS102 requires the value of the scheme's assets to be disclosed at fair value. We were informed by the Treasury when preparing the 2015/16 report that the value of the Public Service Employees Pension Reserve should not be disclosed as a scheme asset. We have continued with this approach for the 2017/18 year.

¹ Full details of the data used for the latest formal valuation as at 31 March 2016 are set out in my report dated 18 September 2017

3 Data and information used

Data sources

1 My calculations are based on the results of the 31 March 2016 formal valuation and the following information provided by the Isle of Man Public Sector Pensions Authority (“the PSPA”):

- Membership numbers as at 31 March 2018; and
- Employer and employee contributions, pensionable payroll and benefit outgo for the accounting period.

As for the 2016/17 report, all figures for GUS in this report include members who previously participated in the Tynwald Pension Scheme.

Membership numbers

2 The latest numbers of employees, deferred pensioners and pensioners have been provided by the PSPA for the purpose of checking the reasonableness of the contribution data provided. Please note that this information has no impact on the 2017/18 FRS102 disclosures. The PSPA have indicated that the number of active members may be overstated due to membership movement data not yet being provided and/or processed.

Scheme	Actives	Deferreds	Pensioners
GUS	9,517	2,837	5,615
Teachers' Pension Schemes	1,305	359	1,075
Police Pension Schemes	212	56	279
Judicial Pension Schemes	8	0	9
Manual Workers No1 Scheme	0	4	67
All Schemes	11,042	3,256	7,045

Data summary

3 The tables below summarise the cashflow data provided by the PSPA for the purposes of the 2017/18 FRS102 disclosures.

Contributions and benefit payments

Scheme	Employer contributions in year to 31 March 2018 (£000)	Employee contributions in year to 31 March 2018 (£000)	Total benefit payments in year to 31 March 2018 (£000)
GUS	33,042	14,825	72,049
Teachers' Pension Schemes	5,804	3,874	13,052
Police Pension Schemes	1,093	994	7,768
Judicial Pension Schemes	186	37	548
Manual Workers No1 Scheme	2	<1	387
All Schemes	40,127	19,730	93,804

Pensionable payroll

Scheme	Actual pensionable pay in year to 31 March 2018 (£000)
GUS	216,781
Teachers' Pension Schemes	38,692
Police Pension Schemes	7,285
Judicial Pension Schemes	1,224
Manual Workers No1 Scheme	11
All Schemes	263,993

4 Actuarial assumptions

Responsibility

- 1 The assumptions are ultimately the responsibility of the Treasury based on actuarial advice. Treasury have confirmed their agreement to the assumptions I have recommended for the purpose of this exercise, which are set out below.

Financial assumptions

- 2 The value of the liabilities for accounting purposes is heavily dependent on the assumptions used. The financial assumptions are largely prescribed by the accounting standard FRS102. Outlined below is the approach I have adopted to set my recommended financial assumptions as at 31 March 2018.

Discount rate

- 3 FRS102 states that the discount rate used to place a value on the liabilities should be determined by reference to market yields on high quality corporate bonds at the reporting date. In addition, the currency and term of the high quality corporate bonds used to set the discount rate should be consistent with the currency and term of the liabilities. I recommend the discount rate be derived from a corporate bond yield curve constructed from yields on high quality corporate bonds as at 31 March 2018. The recommended discount rate recognises the weighted average duration (or term) of the benefit obligation for the Schemes. This was calculated to be approximately 17.5 years at the 2016 valuation.
- 4 The corporate bond yield curve is based on the constituents of the iBoxx £ Corporate AA index, smoothed to capture yields at all terms.

Retail Price Inflation (RPI)

- 5 The retail price inflation (RPI) assumption is set by taking the difference between the yields available on nominal and index linked gilts, at a duration consistent with that of the Schemes' benefit obligations (i.e. 17.5 years).

Pension Increases (CPI)

- 6 The pension increase assumption is in line with the Consumer Prices Index (CPI) as this is the measure by which pension increases and deferred revaluations are set. Based on the accumulation of evidence over a number of years from the UK Office of National Statistics (ONS), in determining the rate of CPI to apply I have assumed a long term gap between RPI and CPI of 1.0% p.a.

Salary Growth

- 7 My recommended long term salary inflation assumption at 31 March 2018 is consistent with the assumptions adopted as at 31 March 2017. This was 2.0% p.a. in excess of CPI.

Demographic assumptions

- 8 The demographic assumptions (including longevity) adopted for this year's exercise are consistent with those used for the 2016 formal valuation of the PSPA arrangements. Please refer to the 2016 valuation report (dated 18 September 2017) for further information.
- 9 The recommended longevity assumption used to set the value of the defined benefit liability as at 31 March 2018 is consistent with that adopted for the latest formal valuation. The table below shows the life expectancies (at age 60) based on that assumption.

	Male	Female
Future pensioner	28.5 years	31.2 years
Current pensioner	26.6 years	29.3 years

Future pensioners are assumed to be aged 45 at the calculation dates.

- 10 Please note that the longevity assumption has been changed since the previous accounting period. For details of life expectancies based on the previous period's assumption, please refer to the 2017 accounting report.

Recommended assumptions

- 11 The financial assumptions as at 31 March 2017 were set by Treasury based on financial conditions as at 31 March 2017. I have set out below the financial assumptions at 31 March 2017 together with my recommended assumptions as at 31 March 2018 determined using the methodology outlined above (and based on market conditions at 31 March 2018).

	31 March 2018		31 March 2017	
	Nominal % p.a.	Real % p.a. (over CPI inflation)	Nominal % p.a.	Real % p.a. (over CPI inflation)
Discount Rate	2.7%	0.3%	2.6%	0.2%
Salary Growth	4.4%	2.0%	4.4%	2.0%
Pension Increases (CPI)	2.4%	-	2.4%	-

- 12 The real discount rate has seen a small increase over the period since 31 March 2017 due to a small movement in corporate bond yields together with no change in expected future CPI inflation.

Reasonableness of assumptions

- 13 There is a range of actuarial assumptions which are acceptable under the requirements of FRS102. I consider that the assumptions above are within the acceptable range and are thus consistent with the requirements of the Accounting Standard.

Sensitivity to assumptions

- 14 FRS102 does not require disclosure of the sensitivity of the results to the methods and assumptions used. However, it is recommended best practice that this information is included.
- 15 The costs of a pension arrangement require estimates regarding future experience. The financial assumptions used for reporting under the Accounting Standard are the responsibility of the Treasury. These assumptions are largely prescribed at any point and reflect market conditions at the reporting date. Changes in market conditions that result in changes in the net discount rate (essentially the difference between the discount rate and the assumed rates of increase of salaries, deferred pension revaluation or pensions in payment), can have a significant effect on the value of the liabilities reported.
- 16 A reduction in the net discount rate will increase the assessed value of liabilities as a higher value is placed on benefits paid in the future. A rise in the net discount rate will have an opposite effect of similar magnitude.
- 17 There is also uncertainty around life expectancy of the Isle of Man population. The value of current and future pension benefits will depend on how long they are assumed to be in payment. The disclosures have been prepared using longevity assumptions as per paragraph 9.
- 18 Details of the effect on the liabilities of the changes in the above assumptions are displayed in section 5.

Risks and uncertainties

- 19 There are risks and uncertainties associated with whatever assumptions are adopted. FRS102 requires the assumptions to be determined on a 'best estimate' basis. However, the assumptions are in effect projections of future investment returns and demographic experience many years into the future and there is inevitably a great deal of uncertainty inherent in what constitutes 'best estimate' with such projections. For the purpose of this report, I have interpreted best estimate to mean that the proposed assumptions are 'neutral': there is in my opinion an equal chance of actual experience being better or worse than the assumptions proposed.
- 20 It is also important to note that FRS102 requires the discount rate to be set with reference to the yields on high quality corporate bonds irrespective of how future benefit payments are met in practice. As such, the figures illustrated in this report are unlikely to reflect either the eventual cost of providing the benefits.

5 FRS102 disclosures

All figures in £m	Year ending 31 March 2018	Year ending 31 March 2017
Net defined benefit liability (opening position)	(3,823)	(2,991)
<i>Service cost</i>		
- Current service cost (excluding employees' contributions)	(95)	(73)
- Past service cost (including curtailments)		
Total service cost	(95)	(73)
<i>Net interest</i>		
- Interest income on assets		
- Interest cost on defined benefit liability	(102)	(105)
Total net interest	(102)	(105)
Total defined benefit cost recognised in Profit or (Loss)	(197)	(178)
<i>Non P&L disclosures</i>		
- Employee cost of benefit accrual	(20)	(19)
- Benefits paid	94	88
Expected closing position	(3,946)	(3,100)
<i>Remeasurements</i>		
- Change in longevity assumption	148	-
- Change in demographic assumptions (other than longevity)	32	-
- Change in financial assumptions	75	(749)
- Other experience	(32)	26
- Return on assets excluding amounts included in net interest		
Total remeasurements recognised in Other Comprehensive Income (OCI)	223	(723)
Defined benefit liability (closing position)	(3,723)	(3,823)

The 'other experience' item shown above is in respect of an adjustment to allow for the known pension increase order as at 31 March 2018 differing from the long term assumption and the impact of actual membership movements up to 31 March 2016 differing from expectations.

Scheme	Defined benefit liability as at 31 March 2018 (£m)	Projected service cost for 2018/19 (%)
GUS ¹	2,832	36.2%
Teachers' Pension Schemes ²	605	34.6%
Police Pension Schemes ³	264	73.5%
Judicial Pension Schemes	15	62.7%
Manual Workers No1 Scheme ⁴	7	-
All Schemes	3,723	37.1%⁵

¹ GUS includes all liabilities in respect of the Tynwald Pension Scheme which was brought into GUS in the 2016/17 year. The projected service cost makes allowance for the amendments to GUS that came into force on 1 April 2017. Namely a 6% reduction in future benefits and a phased increase of employee contribution rates. The reforms have no impact on benefits accrued before 1 April 2017.

² Allowance has been made for agreed reform amendments. Namely the change in accrual rates from 1/80 to 1/83 and 1/60 to 1/62.5 for service from 1 April 2018 for those members who joined before and after 1 January 2007 respectively.

³ No allowance has been made for the agreed reform amendments as these only apply to new joiners from 1 April 2018.

⁴ As at 31 March 2018 there are no active members remaining in the scheme.

⁵ Weighted by payroll

Sensitivity Analysis

FRS102 does not require disclosure of the sensitivity of the results to the methods and assumptions used. However, it is recommended best practice that this information is included. The sensitivities regarding the principal assumptions used to measure the liabilities are set out below:

Change in assumptions at 31 March 2018	Approximate % increase to Liability	Approximate monetary amount (£000)
0.5% decrease in Real Discount Rate	10%	390
1 year increase in member life expectancy	3%	111
0.5% increase in Salary Increase Rate	3%	104
0.5% increase in the Pension Increase Rate	7%	273

In order to quantify the impact of a change in the financial assumptions used, I have calculated and compared the value of the Schemes liabilities as at 31 March 2018 on varying bases. The approach taken is consistent with that adopted to derive the FRS102 figures provided in this report.

To quantify the uncertainty around life expectancy, I have calculated the difference in cost of the Schemes of a one year increase in life expectancy. For sensitivity purposes, this is assumed to be an increase in the cost of benefits of broadly 3%. In practice the actual cost of a one year increase in life expectancy will depend on the structure of the revised assumption (i.e. if improvements to survival rates predominately apply at younger or older ages).

Please note the above sensitivity figures have been derived based on the membership profile of the Schemes as at 31 March 2016, the date the last formal valuation was undertaken.

Appendix

Appendix 1 – Glossary of technical terms

Actuarial gains and losses

Over a reporting period, these consist of:

- experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred), including reflection of any funding valuation which has taken place since the last report; and
- the effects of changes in actuarial assumptions (split between financial and demographic)

Current service cost

The increase in the present value of the defined benefit obligation resulting from employee service in the current period. This is based on the Treasury's "service cost" rate which accounts for the cost to the Treasury of benefits accruing over the period allowing for market conditions at the outset of the period. This may differ from what the Treasury is currently paying in cash contributions.

Net defined benefit liability

The present value of the defined benefit obligation less the fair value of the scheme assets.

Net interest income

The change during the period in the net defined benefit liability that arises from the passage of time. This includes allowance for interest on the current service cost.

Past service cost

The change in the present value of the defined benefit obligation for employee service in prior periods, resulting from a scheme amendment (the introduction or withdrawal of, or changes to, a defined benefit plan) or a curtailment (a significant reduction by the Treasury in the number of employees covered by the Schemes).

Present value of defined benefit obligation

The present value of expected future payments required to settle the obligation resulting from employee service in the current and prior periods.

Weighted average duration

The weighted average time until payment of all expected future discounted cashflows, determined based on membership and the financial and demographic assumptions as at the most recent actuarial valuation. The shorter the duration, the more 'mature' the Schemes.