HYMANS ROBERTSON

Isle of Man Public Service Pension Schemes

Actuarial Valuation as at 31 March 2017 for accounting purposes

May 2017

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Fellow of the Institute and Faculty of Actuaries
For and on behalf of Hymans Robertson LLP

Contents

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 2017.

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 Pensions Technical Actuarial Standard, TAS D – Data, TAS M – Modelling and TAS R – Reporting[1]. This constitutes a "valuation exercise" as defined in TAS R.

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 2017. It should not be used for any other purpose.

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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 2017.

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.

[1] Technical Actuarial Standards (TASs) are issued by the Financial Reporting Council (FRC) and set standards for certain items of actuarial work, including the information and advice contained in this report.

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 2016, the Treasury has confirmed that accounting disclosures for the Schemes as at 31 March 2017 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 the accounting liability as at 31 March 2016 forward to 31 March 2017 using approximate methods. The roll-forward allows for the unwinding of the discount rate, 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 2016 (shown in the 2015/16 report) and pensionable payroll over the period (from the data provided).

5 In preparing the 2016/17 accounting figures, no allowance is made for the effect of changes in the membership profile since 31 March 2014, the date of the latest full valuation for accounting purposes[2].

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 2017 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 2017 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 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 2016/17 year.

[2] Full details of the data used for the full valuation calculations as at 31 March 2014 are set out in the Government Actuary's Department 2014/15 report dated 20 July 2015

3 Data and information used

Data sources

1 My calculations are based on the following information and documents, all provided by the Isle of Man Public Sector Pensions Authority “the PSPA”:

- GAD’s 2014/15 report – “Accounting figures as at 31 March 2015 – Statement by the Actuary” dated 20 July 2015;
- Membership numbers as at 28 February 2017; and
- Employer and employee contributions, pensionable payroll and benefit outgo for the accounting period.

Please note that members of the Tynwald Pension Scheme joined the Government Unified Scheme in the 2016/17 year. Therefore all figures for GUS in this report now 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 2016/17 FRS102 disclosures.

Scheme	Actives	Deferreds	Pensioners
GUS	9,137	2,855	5,279
Teachers’ Pension Schemes	1,240	378	1,037
Police Pension Schemes	203	55	263
Judicial Pension Schemes	8	0	9
Manual Workers No1 Scheme	1	6	66
All Schemes	**10,589**	**3,294**	**6,654**

Data summary

3 The tables below summarise the cashflow data provided by the PSPA for the purposes of the 2016/17 FRS102 disclosures.

Contributions and benefit payments

Scheme	Employer contributions in year to 31 March 2017 (£000)	Employee contributions in year to 31 March 2017 (£000)	Total benefit payments in year to 31 March 2017 (£000)
GUS	31,999	13,936	66,606
Teachers’ Pension Schemes	5,653	3,738	14,303
Police Pension Schemes	1,077	989	6,049
Judicial Pension Schemes	171	34	664
Manual Workers No1 Scheme	3	0	411
All Schemes	**38,903**	**18,697**	**88,033**

Pensionable payroll

Scheme	Actual pensionable pay in year to 31 March 2017 (£000)
GUS	210,015
Teachers' Pension Schemes	37,687
Police Pension Schemes	7,182
Judicial Pension Schemes	1,141
Manual Workers No1 Scheme	20
All Schemes	**256,045**

Additional information

4 The starting point for the calculation of the 2016/17 accounting figures were those prepared by Hymans Robertson for the 2016 year-end. The 2016 year-end figures were in turn derived from the accounting figures prepared by GAD for the 2015 year-end. The GAD report did not provide a scheme level split of the liabilities in respect of active, deferred and pensioner members, which was required for the calculation of the liabilities as at 31 March 2016 and is required for the 2017 year-end figures. I have used the same estimated the split of the liabilities as at 31 March 2015 for each scheme as used to determine the 2016 year-end figures. The estimated split of the liabilities as at 31 March 2015 was based on the 2013 actuarial valuation liability split. I do not believe this will have a material impact on the accounting figures.

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 2017.

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 2017. The recommended discount rate recognises the weighted average duration (or term) of the benefit obligation for the Schemes. This was calculated to be approximately 18 years at the 2013 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. 18 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 2017 is consistent with the assumptions adopted as at 31 March 2016. 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 2013 formal valuation of the PSPA arrangements. Please refer to the 2013 valuation report (dated 3 September 2014) for further information.

9 The recommended longevity assumption used to set the value of the defined benefit liability as at 31 March 2017 and the 2017/18 service cost is the same as adopted last year. The table below shows the life expectancies (at age 60) based on that assumption.

Scheme	31 March 2017
Future pensioner - Male	30.6 years
Future pensioner - Female	33.2 years
Current pensioner - Male	28.9 years
Current pensioner - Female	30.9 years

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

Recommended assumptions

10 The financial assumptions as at 31 March 2016 were set by Treasury based on financial conditions as at 31 March 2016. I have set out below the financial assumptions at 31 March 2016 together with my recommended assumptions as at 31 March 2017 determined using the methodology outlined above (and based on market conditions at 31 March 2017).

	31 March 2017		31 March 2016	
	Nominal % p.a.	Real % p.a. (over CPI inflation)	Nominal % p.a.	Real % p.a. (over CPI inflation)
Discount Rate	2.6%	0.2%	3.5%	1.3%
Salary Growth	4.4%	2.0%	4.2%	2.0%
Pension Increases (CPI)	2.4%	-	2.2%	-

11 The real discount rate has decreased over the period since 31 March 2016 due to a significant reduction in corporate bond yields and an increase in expected future CPI inflation.

Reasonableness of assumptions

12 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

13 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.

14 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.

15 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.

16 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

17 Details of the effect on the liabilities of the changes in the above assumptions are displayed in section 5.

Risks and uncertainties

18 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.

19 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 2017	Year ending 31 March 2016
Net defined benefit liability (opening position)	**(2,991)**	**(3,009)**
Service cost		
- Current service cost (excluding employees' contributions)	(73)	(75)
- Past service cost (including curtailments)		
Total service cost	(73)	(75)
Net interest		
- Interest income on assets		
- Interest cost on defined benefit liability	(105)	(86)
Total net interest	(105)	(86)
Total defined benefit cost recognised in Profit or (Loss)	**(178)**	**(161)**
Non P&L disclosures		
- Employee cost of benefit accrual	*(19)*	*(18)*
- Benefits paid	*88*	*85*
Expected closing position	(3,100)	(3,103)
Remeasurements		
- Change in longevity assumption	*-*	*32*
- Change in demographic assumptions (other than longevity)	*-*	*-*
- Change in financial assumptions	*(749)*	*57*
- Other experience	*26*	*23*
- Return on assets excluding amounts included in net interest		
Total remeasurements recognised in Other Comprehensive Income (OCI)	(723)	112
Defined benefit liability (closing position)	**(3,823)**	**(2,991)**

The 'other experience' item shown above is in respect of an adjustment to allow for the known pension increase order as at 31 March 2017 differing from the long term assumption.

Scheme	Defined benefit liability as at 31 March 2017 (£m)	Projected service cost for 2017/18 (%)
GUS*	2,899	33.8%
Teachers' Pension Schemes	660	44.1%
Police Pension Schemes	240	61.4%
Judicial Pension Schemes	16	85.4%
Manual Workers No1 Scheme	8	34.4%
All Schemes	**3,823**	**36.3%****

* 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 accrued benefits.

** 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 2017	Approximate % increase to Liability	Approximate monetary amount (£000)
0.5% decrease in Real Discount Rate	11%	406
1 year increase in member life expectancy	3%	116
0.5% increase in Salary Increase Rate	3%	110
0.5% increase in the Pension Increase Rate	7%	280

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 2017 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 to the Employer 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 2014, the date the last full valuation (for accounting purposes) 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 employer's "service cost" rate which accounts for the cost to the employer of benefits accruing over the period allowing for market conditions at the outset of the period. This may differ from what the employer is currently paying in cash contributions based on the certified rates at the last formal valuation.
Net defined benefit liability	The present value of the defined benefit obligation less the fair value of the plan 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 plan amendment (the introduction or withdrawal of, or changes to, a defined benefit plan) or a curtailment (a significant reduction by the entity in the number of employees covered by the plan).
Present value of defined benefit obligation	The present value, without deducting any plan assets, 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 employer.