HM TREASURY

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Executive summary

Actuarial valuations of pension schemes put a value on the cost of paying future benefits to the members of that scheme, and also place a value on the assets that may be held by the scheme to help meet these liabilities. Valuations inform the contribution rates that are made to schemes, and as such, they play a key part in ensuring that future liabilities will be met. Scheme valuations, carried out on a consistent and transparent basis, will also be vital in ensuring that the cost control mechanism recommended by the Independent Public Service Pensions Commission (IPSPC) works effectively. Putting this mechanism in place will ensure that the costs of providing pensions remain sustainable in future.

Clause 10 of the Public Service Pensions Bill provides for a common framework for valuations of the public service pension schemes. As valuations are complex and highly technical procedures, and it would not be practicable to include the detailed specifications on the face of the Bill. This detail will be contained in published directions.

These directions will apply to all of the unfunded public service pension schemes created by the Bill. The local government pension schemes in England and Wales, Scotland and Northern Ireland are made up of a number of separate funds. For the local government schemes, directions will provide the detail on how the 'model funds', used to assess the affordability of the schemes as a whole, will be valued. Individual local government pension funds will continue to carry out their own scheme valuations, as they do now. These local fund valuations are provided for elsewhere in the Bill.

Directions will specify how the data, methodology and assumptions used in a valuation will be set. Where appropriate, these will be consistent between schemes. Where there are reasons for different data, methodologies and assumptions to be used to take account of the particular characteristics of different schemes, directions will take account of these.

1 Actuarial valuations of public service pension schemes

Introduction

1.1 The Public Service Pensions Bill provides for actuarial valuations of the public service pension schemes to be carried out. In the unfunded schemes, these valuations are necessary to ensure that the contribution rates paid to the schemes fully reflect the costs of providing pensions. For all of the new schemes made under the Public Service Pensions Bill these valuations also allow for the operation of the employer cost cap.

1.2 Valuations are highly technical procedures, and it would not be appropriate for this technical detail to be specified on the face of the Bill. Clause 10 of the Bill provides for this technical detail to be set out in directions, which will allow for greater consistency between the unfunded schemes and transparency around the process. This formalises the informal arrangements already in place, whereby the Treasury sets many of the assumptions used in scheme valuations, such as the discount rate.

1.3 This remainder of this note sets out more detail on the Government's intentions regarding the content of these directions.

Purpose of scheme valuations

1.4 Actuarial valuations are used to measure the costs of the pension promises that are being made to the workforce.[1] The costs of pension benefits accrued now will be paid out over many decades into the future, and will depend on several different factors – such as members' future salaries, when they retire and their life expectancy. In the unfunded schemes, valuations will be used to set the level of contributions that should be paid now to pay for these benefits when they fall due.

1.5 The outputs of actuarial valuations (or of in the case of local government schemes, of the model fund valuation[2]) will also inform the operation of the employer cost cap. The Government believes that the new pension scheme designs are fair and sustainable, and that no changes to the schemes' designs, benefits or member contribution rates should be needed for 25 years. However, to protect against unexpected changes in costs, and as recommended by the Independent Public Service Pensions Commission (IPSPC), clause 11 of the Bill also provides for an employer cost cap. This will provide backstop protection for the taxpayer and will ensure that the cost of providing pensions remains sustainable in future.

1.6 For the unfunded schemes, the initial level of the employer cost cap will be set with reference to the 2012 scheme valuations, with subsequent valuations being used to measure future costs against this cap. If valuations show that there have been unexpected changes in costs, action will be taken to mitigate these. This may be via an adjustment to the benefits

[1] Valuations will also measure the costs of any ancillary benefits provided by a pension schemes, such as death in service benefits.

[2] There is currently no model fund in Scotland. Detail on how the employer cost cap will be applied to the LGPS in Scotland will be set out in due course.

accruing in respect of future service, an adjustment to member contributions, or via some other means.

1.7 Given the potential impact on members, it is crucial that the approach taken to scheme valuations is transparent and consistent between schemes. Directions will provide details that will allow for this – such as establishing the outputs of the valuation process and when the valuations are to be carried out. Further details are set out in Annex A.

1.8 Actuarial valuations have been carried out for many of the public service pension schemes in the past, but these have sometimes been carried out using different data, methodology and assumptions, leading to a lack of comparability in the results. The final report of the IPSPC recommended that, where possible, data on pension schemes should be produced to common standards and using common methodologies, to allow comparisons to be made between them. Setting out the details of the how valuations are to be carried out in published directions will provide a consistent model for the assessment of pension scheme costs and enable these comparisons to be made, in addition to providing a framework in which the employer cost cap will operate.

1.9 The Bill specifies that the Treasury will consult the Government Actuary before making these directions to ensure that they meet actuarial standards. The Treasury will also involve other stakeholders, such as public service employers, scheme actuaries and trades unions, when considering the approach to valuations. This will ensure that directions reflect individual scheme circumstances and economic and demographic changes.

Schemes to which directions should apply

1.10 Directions will apply to valuations of all the unfunded pension schemes made under the Bill,[3] and the model fund valuations for the local government schemes. The unfunded schemes are those schemes which are not backed by a fund – current contributions are used to pay current pensions, along with other funds provided by the Exchequer if necessary. Even though there is no "pot" of money to fund the liabilities of the unfunded schemes, it is important that the pension contributions paid by employers and employees reflect the value of the benefits being built up. This ensures that the full costs of employing and remunerating staff are accounted for by employers.

1.11 The Government therefore carries out valuations of the unfunded pension schemes, using a notional "pot" of assets. This "pot" helps ensure that the appropriate level of contributions is paid into the scheme. It also ensures that these contributions take account of any changes in costs arising from emerging experience that differs from the assumptions made in the past. As the levels of employee contributions to the new schemes have been set out in proposed final scheme designs for each of the public service schemes, valuations will determine the level of employer contributions to be made to the scheme to ensure that the total costs are met.

1.12 The pension schemes for local government employees differ from the other large public service schemes as they are funded schemes, comprised of a number of individual local funds. These individual funds will continue to carry out their own valuations to determine the contributions to be paid by employers using the fund. However, to allow an employer cost cap to operate, a model fund will be used to measure assets and liabilities across the local government scheme as a whole. The outcome of the model fund valuation will be used to assess whether costs remain at sustainable levels. For the remainder of this paper, references in this document to

[3] The unfunded schemes will make provision for civil servants, the judiciary, teachers, health service workers, fire and rescue workers, members of police forces and the armed forces.

valuations of the local government schemes will relate to these model funds, unless otherwise stated.

1.13 The Public Service Pensions Bill provides for valuations to be carried out which cover both the reformed pension schemes and any connected schemes. This will allow for existing and new schemes for similar categories of employees to be valued together, to allow employers to pay a single contribution rate covering costs arising from the existing and new schemes, where this is required. This in turn will allow for the operation of the cost cap, which will control the costs associated with the new schemes and some of the costs of the old schemes.[4]

Costs and benefits to be measured by these valuations

1.14 Directions will set out how all of the costs arising from the relevant schemes are to be valued.[5] This will include the costs of the pre- and post-reform schemes arising from pensioner, deferred and active members. Directions will also specify how the costs of providing transitional protection are to be measured.[6]

1.15 In practice, valuing these costs involves highly complex calculations. Valuations require hundreds of assumptions to be made, and decisions on the data and methodology to be used to carry out these calculations. More information on the technical detail that will need to be specified is set out in Annex A.

1.16 Many of the assumptions that must be made to carry out a valuation relate to the profile of scheme members – for example the expectations about their life expectancy, growth in salaries, or career paths. These will be defined as "member costs". Other decisions and assumptions that must be made to carry out a valuation are financial or technical in nature – for example the discount rate that is used to assess the present costs of future benefits, or the actuarial methodology to be used. These will be defined as "employer costs".

1.17 The Government has stated that adjustments will only be made via the cost cap mechanism if there have been changes in the "member costs". Changes in costs that arise solely from changes in "employer costs" will not be controlled by the employer cost cap and will not trigger changes in member contributions or benefits. Public service employers, and ultimately the Exchequer, will bear the risk of changes in these costs.

Outputs to be produced by a valuation

1.18 In general the key output of a pension scheme valuation is the standard contribution rate, expressed as a percentage of pensionable pay. This, when adjusted to allow for any past service effects, determines the actual contribution rate to be paid by participating employers.

1.19 The employer cost cap will control the past and future cost risks associated with:

- active members of the new schemes, including any service they have in the existing schemes;
- deferred and pensioner members of the new schemes; and
- transitionally protected members of the old schemes.

[4] Available at http://www.hm-treasury.gov.uk/tax_pensions_resources.htm.

[5] Excluding any contributions made by employers to the costs of administering the scheme.

[6] Those public service workers who, as of 1 April 2012, had 10 years or less until they reach their Normal Pension Age (NPA) will see no change in when they can retire, or any decrease in the amount of pension they receive at their current NPA. In addition to this transitional provision, scheme designs also include mechanisms to provide some protection to those who were between 10-14 years from their current NPA on 1 April 2012.

Directions will provide the details on how these different elements of scheme costs are to be identified in the outputs of scheme valuations.

1.20 Directions will also specify how "employer costs" and "member costs" should be calculated – the different values of these costs will then be set out in valuation results. The separate identification of these costs will allow for the exclusion of "employer costs" from the operation of the employer cost cap.

Valuation timing and implementation

1.21 The timing of scheme valuations, and the time period to which these should apply, will be set out in directions, and reflected in scheme regulations. It is the Government's intention that the valuations for the unfunded schemes will be carried out every four years (and every three years for local government schemes to match the cycle of local funding valuations).

1.22 Directions will also specify the time period in which valuations should be implemented – ie the date at which any necessary changes to employer contribution rates should be made.

A Valuations of public service pension schemes – technical specifications

A.1 Valuing all of the costs and benefits associated with a pension scheme is a highly complex process. Scheme actuaries will carry out these valuations, with certain key parameters specified in directions to ensure consistency between schemes. However, there are differences between public service workforces – for example in the demographic profiles of their members, salary levels and typical career paths. Where it is appropriate for different schemes to use different data, methodology and/or assumptions when carrying out valuations, directions will set out the process by which these will be agreed between scheme actuaries, the Treasury and other stakeholders, such as trades unions. These stakeholders will be involved via normal scheme governance arrangements.

Data

A.2 Pension scheme valuations require data on the membership of those schemes. For example, information on the number of scheme members, their age, gender, salary, length of service and accrued pension benefits will be required to make a robust estimate of likely future pension liabilities. Directions will specify the process to be followed to determine the data-sets needed to allow valuations to be carried out.

A.3 Valuations are typically based on a "snapshot" of data on scheme membership at one particular point in time. It is sometimes necessary to make adjustments to this data – for example to project it to a later date to adjust for likely changes in the composition of the workforce. Directions will specify this "as at" date that will be used for valuations, and the situations where schemes should make adjustments to the data.

A.4 For the unfunded schemes, an "as at" date of 31 March 2012 will be used for the first valuation to be carried under these directions. This date provides a suitable balance between ensuring the data is as recent as possible and leaving enough time to perform and implement the valuation when the new unfunded schemes come into force in 2015.

Methodology

A.5 There are two methodological considerations to be taken into account when conducting a valuation:

- how to track costs when schemes are unfunded; and
- the actuarial methodology to use.

Valuing a notional pot – the SCAPE approach

A.6 In the unfunded schemes, there is no pot of assets which can be valued to determine if sufficient contributions have been paid to meet the cost of rights already accrued. Instead the valuation is done by creating, and tracking the value of, a notional fund. The approach taken is called Superannuation Contributions Adjusted for Past Experience (SCAPE).

A.7 The SCAPE approach sets out that in the notional fund the scheme "assets" provide a guaranteed rate of return which is in line with the SCAPE discount rate. This means that, between valuations, the SCAPE fund:

- increases in line with amounts of contributions made;
- increases with notional returns, in line with the discount rate, currently set at 3 per cent per annum plus CPI; and
- decreases when pension benefits are paid.

A.8 At each valuation, to evaluate whether a shortfall or overpayment has been made in respect of past pension promises, the liabilities are compared with the new SCAPE fund. If any shortfall emerges between the value of assets in the SCAPE fund and the calculated liabilities, the contribution rate will be increased such that the shortfall is removed over a number of years. Similarly, if the calculations show that overpayments have been made in the past, the contribution rate will be reduced.

A.9 Adding actual inflation to the notional returns has the effect of ensuring the size of the fund, and the results of the valuation, are not affected by inflation being higher or lower than expected. As there are no real assets, the valuation is also unaffected by the investment return on any asset portfolio.

A.10 It may also be appropriate to adjust the level of the notional fund, to take account of changes in policy which would otherwise impact on the level of the fund in relation to the value of accrued pension rights, such as the change in the discount rate. Any adjustments of this nature will be specified in directions.

A.11 To date, no valuation under the SCAPE approach has been implemented for some of the unfunded pension schemes – notably the schemes for firefighters and for the police. Directions will specify how a notional fund will be created for these schemes.

Actuarial methodology

A.12 A valuation also needs to determine the contribution rate needed to meet the costs of pension promises that will be made in the future. There are a number of different actuarial methodologies that may be used to calculate these costs – the for example "entry age" or "projected unit" methodologies. While the choice of actuarial methodology does not affect the cost of providing the benefits, it may affect the timing and amounts of contributions. This could have implications for members via the operation of the employer cost cap. It is therefore important that schemes take a consistent approach and so directions will specify the actuarial methodology to be used.

Assumptions

A.13 The nature of an actuarial valuation – which is measuring the cost of benefits to be paid out many years into the future – requires a number of assumptions to be made. Directions will determine the process for setting the assumptions to be used in scheme valuations. To enable comparisons between schemes, consistent assumptions will be used across all valuations except where there are scheme specific reasons to deviate from these (such as differences in the age profile of a particular workforce). Where this is the case, directions will set out a process to determine which assumptions are to be used.

Discount rate

A.14 As people generally prefer to receive goods and services now, rather than in the future, some adjustment must be made to costs and benefits that occur at different time periods in the future. Making these adjustments is known as discounting. For public service pension funds, the discount rate is used to place a single value on all of the pension benefits that will be paid out under the scheme.

A.15 Following a review of the SCAPE discount rate, the Government announced at Budget 2011 that the appropriate discount rate for calculating unfunded public service pension contribution rates should be based on the long term expectation of Gross Domestic Product (GDP) growth. A rate of 3 per cent above CPI inflation was therefore determined to be an appropriate rate to use at future valuations.[1]

A.16 The same discount rate will be used to calculate the estimated return on the notional assets in the SCAPE fund for all the unfunded schemes, and for the model funds that will be used for the local government schemes.

Post-retirement life expectancy

A.17 In setting assumptions about mortality, separate assumptions are generally made for:

- the current ("base") level of experienced mortality (ie current life expectancy); and
- the rate of improvements in life expectancy that may be experienced in the future.

A.18 Directions will specify how these assumptions will be set for individual scheme valuations. Given sufficient membership data it will be possible to make a reasonable "best estimate" assumption for the "base" level of mortality that reflects the scheme experience at the valuation date. For the large public service schemes this would normally be done using scheme-specific experience, and therefore the assumptions about the "base" level of mortality may vary between schemes.

A.19 However, it is impossible to accurately predict future improvements in life expectancy. While recent data has shown faster rates of improvement than in the past, there is no consensus among academics or actuaries on whether rates of improvement will stay the same, increase further or tail off. Given these uncertainties, scheme specific data will not be used to make assumptions about future changes in life expectancy. Directions will specify consistent assumptions about future life expectancy improvements that will be adopted across all scheme valuations.

A.20 The Government intends to use the most recent principal population projections, as calculated by the Office for National Statistics, in valuations of the public service schemes. These projections are produced independently and impartially, after consultation with an expert academic group, and are based on data on the whole population. They are also used across a range of Government departments to estimate future demands for public services. Taking this approach will provide consistency between pension data and other figures produced by Government.

[1] The interim report of the Independent Public Service Pensions Commission recommended the Government review the discount rate used to set contributions to the unfunded pension schemes. Following consultation, the Government announced that this discount rate should be based on projections for long term GDP growth produce by the Office for Budgetary Responsibility. More information is available at http://www.hm-treasury.gov.uk/consult_unfunded_pensions.htm.

Salary growth

A.21 Factors affecting long-term salary growth are complex, including, for example, the UK's GDP growth and the share of this received by public sector workers. However, there does not appear to be any strong justification for making different assumptions across the public service schemes. Directions will specify the assumption around long term salary growth that schemes should use.

A.22 It may be appropriate for schemes to use separate assumptions to estimate the effects of short term salary growth if this is expected to be significantly different to the long term average. Expectations around short term salary growth may depend on the nature of the workforce, and therefore may differ between schemes. If this is the case, directions will set out a process for determining the scheme specific assumptions to be used.

A.23 These assumptions about general salary growth would be in addition to allowances for salary increases through experience or promotion. These would reflect the specific circumstances and experience of the particular scheme, and will be taken into account in assumed salary scales for that scheme.

Other assumptions

A.24 In addition to these, many other assumptions must be made when a valuation is carried out – for example about the likely career paths of the members of each scheme, the number of people that will leave and rejoin the scheme, and the proportion of pension benefits that will be commuted to lump sums.

A.25 Not all of these assumptions will be the same, as there are real differences between the membership profiles of the different schemes. Where it is appropriate for these assumptions to differ, directions will set the process for determining which are to be used and the rationale for any differences.

Spreading periods or deficits or surpluses

A.26 Deficits may arise in the unfunded pension schemes if the notional pot of assets, as measured at the valuation, is insufficient to pay for the benefits that have been accrued. Conversely, a surplus may arise if the notional assets exceed the liabilities. Deficits or surpluses may arise in a similar way for the model funds used in the value the local government schemes.

A.27 When deficits or surpluses arise, a decision has to be made about how these are addressed – this is usually via adjustments to future contribution rates. Common practice has been to consolidate all outstanding surpluses or deficits from previous valuations into a single adjustment at each new valuation (rather than maintaining several separate adjustments with different time horizons).

A.28 To date, most of the unfunded public service schemes have recognised surpluses and deficits by adjusting future contribution rates for a 15-year period. Directions will confirm that a 15-year spreading period will continue to be used in future valuations, unless there are strong reasons why this should differ for a particular scheme, or in specific circumstances, in which case they will set out that a different period is appropriate.

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