



Reference:

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By email only to James.Richardson@hmtreasury.gsi.gov.uk

31 August 2011

Dear James

**Cost ceilings for scheme level discussions:
Advice on data, methodology and assumptions**

Thank you for your letter dated 31 August 2011. Following consultation with schemes and scheme actuaries, you have requested an update to our initial advice of 22 July 2011 so that HM Treasury can determine data, methodology and assumptions for the purpose of setting cost ceilings.

As requested, I am pleased to attach a final draft report providing updated advice by Michael Scanlon on appropriate data, methodology and assumptions.

In my opinion the report produced by Michael and the HM Treasury WPP advisory team in GAD provides an approach which meets the HM Treasury objectives in a way which seeks to deliver balance and fairness against those objectives, and reflects the further areas I have been asked to consider.

We understand that HM Treasury is continuing to discuss cost ceilings with trades unions and other interested groups. Please let me know as and when you require anything further.

Yours sincerely

Trevor Llanwarne
Government Actuary

cc: Stephen Humphrey, GAD
Michael Scanlon, GAD



HM Treasury
Cost ceilings for scheme level discussions
Final draft advice on data, methodology and assumptions

Date: 31 August 2011

Author: Michael Scanlon
Government Actuary's Department

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1 Executive Summary

Background

- 1.1 The Government has decided to set scheme-specific cost ceilings for scheme-specific discussions of pension scheme designs with trades unions and other interested groups.
- 1.2 Cost ceilings will be set with reference to the scheme specific contribution rates required to provide the benefits for a 'Reference Scheme' design.
- 1.3 HM Treasury has outlined the purpose and objectives for cost ceilings, which should provide a fair comparison between:
 - > the costs of the Reference Scheme, and
 - > the costs of the proposed scheme design, including the costs of any past service effects and transitional arrangements.
- 1.4 Having consulted schemes and scheme actuaries, HM Treasury has commissioned GAD to provide advice on appropriate data, methodology and assumptions to be used for the purpose of setting cost ceilings.

GAD advice

- 1.5 We suggest that membership data used for the purpose of setting cost ceilings is the most recent full extract of member data used for actuarial valuations of the pension scheme, unless more recent data is available and in HM Treasury's opinion is sufficiently robust for the purpose.
- 1.6 We suggest that the methodology used for the purpose of setting cost ceilings is the standard actuarial methodology known as the Projected Unit Method with a one year control period, because this approach measures the cost of accrual each year and avoids placing undue weight on any particular membership category.
- 1.7 We suggest that the assumptions used for the purpose of setting cost ceilings are:
 - > a real discount rate of 3% per annum in excess of CPI in line with the revised SCAPE discount rate
 - > for all other parameters set as best estimates
 - > consistent across the schemes, but reflecting real differences between the schemes
 - > in particular, that the following assumptions are adopted across all the schemes:
 - > Nominal discount rate: 5% pa
 - > Earnings increases: 4¼% pa
 - > CPI increases: 2% pa
 - > Assumed improvements in post-retirement life expectancy in line with the ONS 2008-based principal population projections
 - > other demographic assumptions set as best estimates, subject to HM Treasury's review and being suitably robust.

2 Introduction

- 2.1 The Government has decided to set scheme-specific cost ceilings for scheme-specific discussions of pension scheme designs with trades unions and other interested groups.
- 2.2 Cost ceilings will be set with reference to the scheme specific contribution rates required to provide the benefits for a 'Reference Scheme' design.
- 2.3 Having consulted schemes and scheme actuaries, HM Treasury has commissioned GAD to provide advice on appropriate data, methodology and assumptions to be used for the purpose of setting cost ceilings based on the objectives and approach outlined in Appendix A and the Reference Scheme specified in Appendix B. A list of the public service pension schemes included in this review is attached at Appendix C.

HM Treasury process for determining data and methodology assumptions

- 2.4 GAD provided initial advice on appropriate data, methodology and assumptions to be used for the purpose of setting cost ceilings in our note of 22 July 2011 *Cost ceilings for scheme level discussions: Initial advice on data, methodology and assumptions*.
- 2.5 Having consulted schemes and scheme actuaries, HM Treasury has commissioned GAD to provide an update to that advice on appropriate data, methodology and assumptions to be used for the purpose of setting cost ceilings. In particular, HM Treasury has requested that GAD provide further advice in the following specific areas:
- > the circumstances under which it is reasonable to use data projected to 2015 and, in this regard, the considerations which need to be taken into account, and the approach to assumption setting;
 - > the circumstances in which it would be appropriate to use scheme experience in determining the assumption for the proportion of pension commuted for lump sum, and the methodology to do this when appropriate;
 - > the approach to assumptions in relation to extrapolations beyond current normal pension ages; and
 - > the approach to assumptions in relation to members who leave the scheme and either rejoin or transfer to another public service pension scheme within 5 years.
- 2.6 This note sets out GAD's advice on the appropriate data, methodology and assumptions for the purpose of cost ceiling calculations, including advice on the areas listed above.
- 2.7 We understand that HM Treasury is continuing to discuss cost ceilings with unions and other interested groups. We will be happy to provide further advice following these discussions if required.

Structure of this note

- 2.8 GAD's advice is set out in the remainder of this note, as follows:
- > Section 3: Comparing different scheme designs
 - > Section 4: Setting cost ceilings – data
 - > Section 5: Setting cost ceilings – methodology
 - > Section 6: Setting cost ceilings – assumptions
 - > Section 7: Verifying that proposed pension scheme designs are within the cost ceiling
 - > Section 8: Transition and Past Service

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> Section 9: Purpose and limitations

3 Comparing different scheme designs

- 3.1 The purpose of the cost ceiling framework is to provide a fair comparison between:
- > the costs of the Reference Scheme, and
 - > the costs of any proposed scheme design, including the costs of transitional arrangements and past service effects.
- 3.2 To provide a fair comparison, it is important that calculations of the cost of the two scheme designs for any particular scheme use consistent data, methodology and assumptions. This ensures that the comparison reflects only the difference between the two scheme designs, rather than differences between the data, methodology and assumptions used to measure the costs of the scheme designs.
- 3.3 It is important that the data, methodology and assumptions are realistic, in order to provide a fair comparison. In particular, it is important that all phenomena relevant to the differences between the two scheme designs are allowed for. For example, an assumption that members did not commute any pension in exchange for a lump sum would not be appropriate when comparing two schemes with different commutation factors.
- 3.4 However in general a comparison between scheme designs will not be particularly sensitive to the assumptions chosen, because the same assumptions are used to measure the costs of both scheme designs. For example, using a slightly different earnings assumption would change the measured cost of both scheme designs, but, for most scheme designs, it would not affect which scheme had the higher cost. (The exception to this would be when the difference between the two designs was particularly related to the earnings assumption – for example comparing one scheme with revaluation in deferment in line with earnings and another with revaluation in deferment in line with prices.)
- 3.5 We suggest that HM Treasury should consider varying from the data, methodology or assumptions recommended in this advice if:
- > There is credible evidence that the data, methodology or assumptions suggested in this advice are not realistic – for example if the last completed actuarial valuation was many years ago.
 - > The use of different data, methodology and assumptions would have a material impact on the comparison of a scheme design with the reference scheme.

4 Setting cost ceilings – data

Recommendations

- 4.1 We suggest that membership data used for the purpose of setting cost ceilings is that used for the last completed actuarial valuation of the pension scheme, subject to the comments below.
- 4.2 If schemes hold membership data that is more recent than the last completed actuarial valuation of the pension scheme, for example a valuation progressed but not fully completed, then we suggest that HM Treasury determine that the more recent data is used.
- 4.3 Using as recent data as possible is, in principle, to be preferred. However it is important that the membership data is sufficiently robust to be used for the purpose of setting cost ceilings, and that sufficient checks have been carried out to test its robustness. HM Treasury should decide whether a particular set of membership data is sufficiently robust for the purpose having sought appropriate assurances from the scheme.
- 4.4 Calculations will have an effective date of 1 April 2015. Whilst it may be possible to project scheme membership data to 1 April 2015 we suggest that extract data should be used without projection. If membership data projected to 1 April 2015 were proposed, we suggested that HM Treasury considers using this projected data rather than historic data only if:
 - > The projections are suitably robust for this purpose, and
 - > The use of projected membership data would have a material impact on the comparison of a scheme design with the reference scheme
- 4.5 There are some purposes for which it would not be appropriate to use historic data. In such cases, we suggest that HM Treasury considers alternative approaches. We suggest that assumptions for any projections should be best estimates.

Rationales for recommendations

- 4.6 The membership data underlying the last completed actuarial valuation of the pension scheme is a transparent source of appropriately checked data.
- 4.7 However for some schemes this data may be many years old, and the above suggestions provide for the possibility of using more recent data if it is sufficiently robust for the purpose.
- 4.8 If projected membership data as at 1 April 2015 were available, this may provide a theoretically better basis for the comparison of the costs of different scheme designs. However producing the projected data is likely to involve a significant number of assumptions. If the projected data were to be used it would have to be suitably robust for this purpose. If the projected data was not likely to have a material impact on the comparison of any scheme design with the Reference Scheme we would suggest that historic data, rather than the projected data, is used, due to the greater transparency.
- 4.9 There are some purposes for which it would not be appropriate to use historic data. For example, some schemes have a section which is closed to new entrants, and in which members pay a different contribution rate from that paid by the members in the section open to new entrants (eg PCSPS Classic section, Firefighters' Pension Scheme). In such circumstances it would not be appropriate to calculate the projected average member contribution rate in 2015 on the basis of historic data. It is therefore

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necessary to consider alternative approaches. We have suggested that assumptions for any projections should be best estimates for the reasons set out in paragraph 6.15.

5 Setting cost ceilings – methodology

Recommendations

- 5.1 We suggest that the methodology used for the purpose of setting cost ceilings is a standard actuarial methodology known as the Projected Unit Method, with a one year control period.

Rationales for recommendation

- 5.2 The Projected Unit Method with a one year control period relates to the costs of benefits accruing over the year following a valuation. The benefits would be paid to members after their retirement, potentially many years in the future. Some benefits may be payable to the member's dependants, after the member's death.
- 5.3 The Projected Unit Method is a standard actuarial methodology, and is used in preparing the resource accounts of public service pension schemes.
- 5.4 Other actuarial methodologies, such as the New Entrant Method and the Attained Age Method, are sometimes used in the actuarial valuations of public service pension schemes. We do not think that these methodologies are suitable for the purposes of cost ceilings, given the objectives set out in Appendix A. Our reasons are as follows.
- 5.5 The New Entrant Method considers the cost over the entire career of a New Entrant to the schemes. However the existing schemes will be closed to future accrual and so not all the members of the reformed schemes will be at the start of their careers.
- 5.6 The Attained Age Method considers the cost of the pension scheme over the remaining career of all existing members in the scheme, until retirement or earlier leaving. Under some assumptions, older members have relatively less impact than younger members under the Attained Age Method, because older members have a relatively short time until retirement, but younger members may remain in the scheme for many years. If the Attained Age Method was used to compare scheme costs, a slight change to the benefits affecting younger members could outweigh a significant change to the benefits affecting older members. We therefore do not think that the Attained Age Method fits with the objective that the cost ceiling should reflect the costs of scheme designs for members of different ages, genders, or occupations in a fair way.
- 5.7 We have suggested using a one year control period because the use of a longer control period could suffer from the same defects as the Attained Age Method as discussed above.

6 Setting cost ceilings – assumptions

Recommendations

- 6.1 We suggest that the discount rate be set as 3% in excess of CPI indexation in accordance with the revised SCAPE discount rate to be used for calculating employer contributions.
- 6.2 We suggest that for the purpose of assessing cost ceilings all other assumptions are set as best estimates.
- 6.3 We suggest that consistent assumptions are used across the schemes. This does not mean that all assumptions should be the same for all schemes, because there are real differences between the membership profiles of the schemes. However it does mean that certain assumptions would be the same across all schemes where there is no reason for a difference.
- 6.4 In particular, we suggest that HM Treasury adopts the following assumptions across all the schemes:

<i>Assumption</i>	<i>Suggestion</i>
Nominal discount rate	5.00% pa
Earnings increases	4.25% pa
CPI increases	2.00% pa
Assumed improvements in post-retirement life expectancy	ONS 2008-based principal population projections

- 6.5 We suggest that HM Treasury adopts other demographic assumptions for the purpose of setting cost ceilings which are best estimates. These should be informed by each scheme's own actuary's view of the current best estimate of the demographics of the scheme membership. HM Treasury should determine that these assumptions should be in line with those underlying the most recent actuarial valuation of the pension scheme, updated for any more recent information. These assumptions should be subject to HM Treasury review in order that HM Treasury can consider whether the assumptions are sufficiently robust to support the analysis required for cost ceilings.
- 6.6 Where schemes do not have relevant demographic experience data, we suggest that they consider using relevant data from other sources, including relevant data from other public service pension schemes. By liaising with other schemes in cases where relevant demographic experience data is scarce, schemes will be able to propose assumptions that are consistent with the proposals of other schemes. It will follow that any differences between the assumptions proposed by different schemes reflect real differences in scheme experience data.

Commutation

- 6.7 The reference scheme allows pension to be commuted for lump sum at the rate of £12 of lump sum for each £1 a year of pension, but no fixed lump sums are payable. Although commutation experience does exist there is generally little information in respect of schemes which do not include fixed lump sums. As with the other demographic assumptions we suggest that the commutation assumption should be a best estimate and consistent across schemes.

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- 6.8 The scheme specific assumption for the proportion of pension commuted should be relevant to members accruing benefits in the reference scheme from 1 April 2015. As such, it should reflect the expected behaviour of both:
- > Members who are expected to receive a significant fixed lump sum from service up to 31 March 2015 (see paragraph 6.9); and
 - > Members who are expected to receive little or no fixed lump sum from service up to 31 March 2015 (see paragraph 6.10).
- 6.9 We suggest that the assumption for the proportion of pension commuted in the reference scheme for members with a significant fixed lump sum is by reference to:
- > the amount of commutation required to provide a lump sum of three times annual pension (after commutation); plus
 - > the proportion of pension commuted in exchange for an additional lump sum in schemes that provide an automatic lump sum of three times annual pension
- This approach is based on the assumption that members will elect to receive a similar split of pension to lump sum following the scheme reforms as they do at present.
- 6.10 We suggest that it is assumed that members with little or no automatic lump sum commute three quarters of the HMRC limit (ie commuting 26.8% of their pension).
- 6.11 We suggest that each scheme's own actuary should be asked to propose commutation assumptions that reflect their own scheme's demographic experience as discussed above and are consistent with the proposals from other schemes. HM Treasury should then review the proposed assumptions.
- 6.12 The above discussion is relevant to schemes that currently provide for pension to be commuted for lump sum at the rate of £12 of lump sum for each £1 a year of pension. The Firefighters' Pension Scheme uses different commutation rates, and different considerations apply. The assumption for the proportion of pension commuted in the Firefighters' Pension Scheme will be considered separately.

Career paths above current NPA

- 6.13 The reference scheme has a Normal Pension Age linked to the State Pension Age. There is generally little information available about the career paths for individuals at ages above the Normal Pension Age in the existing pension schemes. However assumptions about career paths up to (and possibly beyond) State Pension Age will be needed to set the cost ceilings. We recommend that each scheme's own actuary should be asked to propose assumptions for ages above the Normal Pension Age in the existing schemes. We suggest that HM Treasury should review the proposed assumptions to check consistency. GAD would be happy to provide advice if required.

Rejoiners

- 6.14 The reference scheme allows members rejoining after a period of deferment of less than 5 years (or transferring to another public service pension scheme within 5 years) to link new service with previous service, as if they had always been an active member (so previous accruals are indexed by earnings for that period of deferment). There is generally little information available about rejoiners (or transferees) rates in many of the existing pension schemes. However rejoiner (or transferee) assumptions will be needed to set the cost ceilings. We recommend that each scheme's own actuary should be asked to propose assumptions for rejoiners. We suggest that HM Treasury should review the proposed assumptions to check consistency. GAD would be happy to provide advice if required.

Rationales for recommendations

- 6.15 We suggest best estimate assumptions. It is not the intention that the cost ceiling will favour one scheme design over another (see Appendix A). Using assumptions that include a margin for prudence or optimism compared to best estimate could favour one scheme design over another. For example, if the assumed rates of ill health retirement were higher than best estimate, then it would favour scheme designs with ill health benefits less generous than the Reference Scheme.
- 6.16 We suggest that consistent assumptions are used across the schemes since it is HM Treasury's intention that the cost ceilings should be set on a consistent and fair basis across the schemes (see Appendix A).
- 6.17 We have suggested using the same assumptions across all schemes for pension increases, earnings revaluation within the CARE schemes, and the same nominal discount rate because the schemes will be subject to the same economic circumstances and will, for example, have the same pension increase each year.
- 6.18 The detailed rationale for suggesting these percentages are set out in Appendix D.
- 6.19 We have suggested the same assumed future improvements in post-retirement life expectancy because we are not aware of any significant body of robust evidence on which to differentiate between the future experience of small subgroups of the population. We suggest that future improvements are based on the ONS 2008-based principal population projections because these projections are used widely across Government and in the actuarial valuations and resource accounts of public service pension schemes.
- 6.20 The last completed actuarial valuation of the pension scheme is a transparent source of demographic assumptions.
- 6.21 However for some schemes these assumptions may be many years old, and the above suggestion provides for assumptions based on more recent information if in HM Treasury's opinion it is sufficiently robust for the purpose.
- 6.22 We have suggested that the commutation assumption should reflect scheme experience where relevant. However we understand that there is little experience data available on the proportion of pension commuted in exchange for a lump sum for members with little or no automatic lump sum, so we have suggested that the same assumption is used for such members across all the schemes. This assumption is broadly in line with data of which we are aware.
- 6.23 There is little information available to set assumptions for career paths above the current Normal Pension Ages in the existing schemes, or to set re-joiner rates. It seems reasonable for HM Treasury to ask schemes and their actuaries to propose assumptions for review.

7 Verifying that proposed pension scheme designs are within the cost ceiling

- 7.1 In due course, HM Treasury will need to set final methodologies and assumptions for the purpose of verifying that proposed pension scheme designs are within the cost ceiling. This report focuses on the data, methodology and assumptions for the purpose of our advice on setting the cost ceilings, but we make some remarks about the subsequent verification process below.
- 7.2 As noted in paragraph 3.2, it is important that the verification process uses consistent data, methodology and assumptions in order to provide a fair comparison.
- 7.3 However it may be necessary for this verification process to have some additional methodologies or assumptions to value some potential pension scheme designs.
- 7.4 Where additional assumptions are necessary, we suggest the process HM Treasury follows in determining those assumptions is consistent with the process adopted for determining the assumptions needed to inform setting the cost ceilings. We suggest that HM Treasury sets out a transparent process for setting additional assumptions.
- 7.5 In some cases the nature of proposals for reformed schemes may lead to behaviour differences (eg age at retirement, proportion of pension commuted in exchange for a lump sum) between the expected decisions of members in:
- > the proposed reformed schemes; and
 - > the reference scheme

In such cases we suggest that HM Treasury sets assumptions for the purpose of verifying that proposed pension scheme designs are within the cost ceiling that are consistent with those used in the calculation of cost ceilings, but with allowance for those behavioural differences.

Sensitivity analysis

- 7.6 It is certain that emerging experience going forward will differ from the assumptions adopted. Differences will arise due to both short-term fluctuations and where long-term trends may differ from the assumptions adopted.
- 7.7 In general, where there is uncertainty and this uncertainty is particularly relevant to a comparison between a proposed scheme design and the reference scheme, then sensitivity analyses could be considered.
- 7.8 Clearly all the assumptions that underpin a comparison between a proposed scheme design and the reference scheme are uncertain but multiple sensitivity analyses are unlikely to assist in making the cost ceiling process clear and transparent. A sensitivity analysis is therefore most likely to be appropriate where there is no, or very limited, demographic experience available underpinning a particular assumption.
- 7.9 Using sensitivity analyses for these types of assumptions will allow HM Treasury to discuss with schemes and scheme actuaries how a proposal for reformed schemes compares with the reference scheme in a variety of different plausible scenarios of the future.
- 7.10 Assumptions where sensitivity analyses may be particularly relevant for some schemes may include:
- > projections of data
 - > commutation assumptions
 - > assumed career paths above current Normal Pension Ages

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- > rejoiner and transfer assumptions
- > assumptions about behavioural differences

7.11 If these assumptions, or any other assumption about which there is significant uncertainty, are particularly relevant to a comparison between a proposed scheme design and the reference scheme, then we suggest that HM Treasury considers sensitivity analyses.

8 Transition and Past Service

- 8.1 We note that any variations to the 'reference scheme' which would lead to further costs relating to past service effects and transitional arrangements will need to be proposed with other variations to the 'reference scheme' which generate equivalent cost reductions. We suggest that HM Treasury considers this issue in parallel with the process of setting the cost ceilings, so that this issue is resolved by the time the cost ceilings are set. This would then enable schemes to consider which transition options would be possible within the cost ceiling. We note that HM Treasury intend to obtain advice from the Government Actuary and then specify the data, assumptions and methodology to assess costs arising from past service effects and transitional arrangements in due course.

9 Purpose and limitations

Purpose, users and commissioning

- 9.1 This report has been prepared by GAD at the request of HM Treasury. The purpose of the report is to provide advice on the appropriate data, methodology and assumptions for the purpose of cost ceiling calculations.

Third party reliance and liability

- 9.2 This report has been prepared for HM Treasury. I am content for HM Treasury to release this report to third parties (including public service schemes, trades unions and respective scheme actuaries), provided that:
- > it is released in full
 - > the advice is not quoted selectively or partially, and
 - > GAD is identified as the source of the report
- 9.3 Third parties whose interests may differ from those of HM Treasury should be encouraged to seek their own actuarial advice where appropriate.
- 9.4 Other than HM Treasury, no person or third party is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein, and GAD has no liability to any person or third party for any act or omission taken, either in whole or in part, on the basis of this report. If any contents of this report are to be used to inform any Government policy decisions GAD should be consulted before those decisions are made.

Appendix A: HM Treasury's purpose and objectives of the cost ceiling

- A.1 The objective of the cost ceilings is to allow scheme specific discussions to deliver pension scheme designs that reflect the differing characteristics of different workforces, within specified cost limits.
- A.2 The cost of providing equivalent pension benefits will differ for each scheme. Scheme specific cost ceilings for the purposes of discussing scheme design will therefore be set with regard to the 'reference scheme', outlined in Appendix B for each scheme in scope.
- A.3 In order to set the cost ceilings, and to measure proposed pension scheme designs against them, it is necessary to specify data, methodology and assumptions. HM Treasury will specify the data, methodology and assumptions, having obtained advice from the Government Actuary.
- A.4 When comparisons are made between the 'reference scheme' and proposed scheme designs the data, assumptions and methodology should ensure these comparisons;
- represent a fair reflection of the differing costs of the designs being compared and,
 - reflect differing future risks to Government income in the designs being compared
- A.5 For example, the discount rate should ensure that the future costs of today's pension promises are fairly reflected in the cost ceilings (i.e. there is inter-generational fairness looking at pension contributions relative to future benefits in payment on a stand-alone basis). The discount rate should also 'reflect future risks to Government income', in the broad sense that, within this fairness principle, Government should have as much confidence as possible that promises made today are made on a sustainable basis, reflecting Government's ability to meet future payments in order to ensure fairness to future taxpayers.
- A.6 The cost ceilings should be set on a consistent and fair basis across the schemes.
- A.7 The cost ceilings will reflect the cost of benefits accruing in the proposed new schemes in the future. Any variations to the 'reference scheme' which would lead to further costs relating to past service effects and transitional arrangements will need to be proposed with other variations to the 'reference scheme' which generate equivalent cost reductions. HM Treasury will obtain advice from the Government Actuary and then specify the data, assumptions and methodology to assess costs arising from past service effects and transitional arrangements in due course.
- A.8 For the avoidance of doubt deferring the commencement date of the new schemes beyond 1 April 2015 will count as a transitional cost for these purposes.
- A.9 In the future, the taxpayers' contributions to the schemes will be capped by an 'employer contribution cap', which will be applied to the employer's portion of SCAPE contribution rates emerging from the scheme valuations. For the avoidance of doubt, the setting of cost ceilings described here is a separate process from determining the future 'employer contribution caps'. In particular, for scheme specific discussions on scheme design variations relative to the 'reference scheme', the assessment of proposed pension scheme designs against the cost ceilings will be based on the data, methodology and assumptions specified by HM Treasury for this purpose; they will not be based on the actuarial valuations of the schemes (except where use of the same data, methodology and assumptions is co-incident).
- A.10 The process of determining employer contribution caps will be set out in due course.

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A.11 The Government's position on the 'reference scheme' design is clear. However, it is not the intention that the setting of cost ceilings will favour one scheme design over another.

Appendix B: HM Treasury's reference scheme design

- B.1 Cost ceilings will be set as the scheme-specific contribution rates required for a 'reference scheme' design that is consistent with the recommendations of Lord Hutton's Independent Public Service Pensions Commission.
- B.2 The Reference Scheme design is as follows:
- a) a Career Average Revalued Earnings (CARE) pension scheme;
 - b) an accrual rate to be determined centrally in due course. This will be set consistent with the Chief Secretary's statement that, following a full career, the pension individuals receive at normal pension age would be broadly as generous for low and middle income earners as it is now;
 - c) a normal pension age linked to State Pension Age (or 65, whichever is higher), or to age 60 for active members of the firefighters' scheme (or the same age as other schemes for deferred members);
 - d) earnings revaluation of past CARE service for active members;
 - e) pensions in payment and in deferment indexed by CPI;
 - f) average member contributions should be assumed to be 3.2pp above their current weighted average level;
 - g) no fixed lump sums, optional commutation, with a 12:1 factor for converting pension to lump sum;
 - h) ancillary benefits (ill-health, death and survivors benefits) that match provision in schemes that are currently open to new members (e.g. a lower tier ill health pensioner receives an unreduced CARE pension; a partner receives same proportion of member's pension as now);
 - i) members rejoining after a period of deferment of less than 5 years can link new service with previous service, as if they had always been an active member (so previous accruals are indexed by earnings for that period of deferment); and
 - j) members transferring between public service schemes would be treated as having continuous active service (which would include those transferring between schemes who had rejoined public service after a gap of less than 5 years)..

Appendix C: Schemes covered by cost ceiling process

- C.1 Cost ceilings are to be set using the data, assumptions and methodology proposed for the following public service schemes:
- > For civil servants:
 - > Principal Civil Service Pension Scheme
 - > Principal Civil Service Pension Scheme (Northern Ireland)
 - > For NHS employees:
 - > NHS Pension Scheme
 - > NHS Superannuation Scheme (Scotland)
 - > Health and Personal Social Services Northern Ireland Superannuation Scheme
 - > For teachers:
 - > Teachers' Pension Scheme (England and Wales)
 - > Scottish Teachers' Superannuation Scheme
 - > Northern Ireland Teachers' Superannuation Scheme
 - > For Local Government:
 - > Local Government Pension Scheme (England and Wales)
 - > Local Government Pension Scheme (Scotland)
 - > Northern Ireland Local Government Pension Scheme
 - > For firefighters:
 - > Firefighters' Pension Scheme (England)
 - > Firefighters' Pension Scheme (Wales)
 - > Firefighters' Pension Scheme (Scotland)
 - > Firefighters' Pension Scheme (Northern Ireland)
- C.2 Further work will be needed to set reference scheme designs for the Armed Forces, Police and Judicial schemes.

Appendix D: Financial assumptions

Net discount rate

- D.1 We suggest that HM Treasury adopts a net discount rate of 3% per annum in excess of assumed increases in CPI, in line with the SCAPE discount rate. As set out in paragraph A.4 the cost ceiling should be a fair reflection of costs and reflect the risks to Government income. These were primary objectives in determining the SCAPE discount rate¹.

Assumption for increases in CPI

- D.2 We suggest that HM Treasury adopts an assumption for increases in CPI of 2.00% pa across all the schemes.
- D.3 This assumption is consistent with the assumption used in the derivation of the SCAPE discount rate. It is also consistent with the Bank of England's CPI target.
- D.4 We also observe that in pension schemes that provide earnings or CPI revaluation, the measured costs are sensitive to the discount rate net of earnings revaluation and the discount rate net of CPI increases. The measured costs are much less sensitive to changes in the assumption for CPI increases, if the net discount rates are held constant.
- D.5 Using the rounding approach normally adopted this amounts to a nominal discount rate of 5.00% pa across all the schemes.

Earnings revaluation assumption

- D.6 We suggest that HM Treasury adopts an earnings revaluation assumption of 4.25% pa across all the schemes.
- D.7 We understand that the revaluation of CARE benefits in line with earnings during service will be the same across all the schemes, just as pension increases are. It is therefore reasonable to use the same earnings assumption across all the schemes.
- D.8 The earnings revaluation assumption of 4.25% per annum is 2.25 % per annum above the assumption for CPI increases. This is consistent with long-term past experience of national average earnings growth.
- D.9 This assumption is consistent with the assumptions adopted by most of the larger public service schemes for recent actuarial valuations and resource accounts.
- D.10 It is also consistent with the 'best estimate' assumption adopted by the Secretary of State for Work and Pensions on advice from GAD for the 2011 review of contracted-out rebates.

¹ Consultation on discount rate used to set unfunded public service pension contributions: Summary of responses HM Treasury April 2011
http://www.hm-treasury.gov.uk/consult_unfunded_pensions.htm