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by email only

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Dear Conrad

Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018

Thank you for your letter of 9 November 2018[1], asking for my professional opinion on the draft Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018 (the "Amending Directions") which were attached to your letter, in line with the requirements of Section 11(4) of the Public Service Pensions Act 2013 ("the Act"). In particular, you have asked me to set out my views on the extent to which the Amending Directions meet the government's objectives set out in your letter and the extent to which they are technically complete and coherent.

In your letter you have also noted the government's intention to ask me to undertake a review of the cost cap mechanism for the public service pension schemes after the current valuations have been completed. Although this letter focuses on the extent to which the draft Amending Directions meet the stated objectives within the existing framework for the current valuations, as the cost cap mechanism is one of the key components of the existing framework I do comment in this letter on some aspects of how the mechanism is operating.

It is clear to me that the framework introduced by the Act is delivering assessments of the costs of providing public service pension schemes as was intended, and that these costs are being recognised and reviewed on a transparent and consistent basis. As part of GAD's mission is to support effective decision-making and robust reporting within government this is an outcome I welcome.

Professional opinion

My overall opinion on the draft Amending Directions is that they will deliver results which largely meet the stated objectives, with some better met than others, and that they are, in the round, technically complete and coherent.

In the section below headed "Detailed professional opinion" I comment on the extent to which the Amending Directions meet the intentions you set out in paragraph 4 of your letter, noting a few areas where I believe it would be helpful to consider further. I also outline how I believe the consolidated directions (after the draft Amending Directions have been implemented) continue to meet each of the objectives you set out in paragraph 7 of your letter. Finally, in Appendix A to this letter I add further comments on the impact on

[1] Your letter is set out in Appendix B to this letter.

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valuation outcomes of actuarial assumptions and the material risks arising from unreliable valuation data.

The analysis in this letter draws upon the initial results from the 2016 actuarial valuations which were provided to HMT by the respective schemes in September 2018. I have relied upon the accuracy and completeness of these initial results for the purposes of this letter (subject to the comments on valuation data as noted above).

Background and context

The Act provided the legislative framework for the introduction of new public service pension schemes, mainly introduced in April 2015, for regular actuarial valuations of these schemes to be carried out, and for the establishment of an employer cost cap mechanism, in order to ensure that the full costs of providing the schemes are recognised and remain sustainable in the future.

Directions were subsequently made (the "2014 Directions")[2] using the powers in the Act. Preliminary valuations of the schemes, mainly with an effective date of 31 March 2012, were carried out under the 2014 Directions to calculate the schemes' employer contribution rates to be paid from 1 April 2015 to 31 March 2019 and to set the initial employer cost caps (as a percentage of pensionable pay).

The 2014 Directions are now being reviewed, with proposed changes set out in the draft Amending Directions, to provide the framework for the next set of actuarial valuations to be carried out, mainly with an effective date of 31 March 2016. As part of this valuation process:

- scheme costs as measured by the cost cap mechanism will be compared to the employer cost caps initially established;

- for each scheme, if costs are outside a 2% margin above or below the employer cost cap, the scheme's provisions will be amended to bring the costs back to the level of the employer cost cap;

- the resulting employer contribution rates to be paid from 1 April 2019 to 31 March 2023, after allowing for the impact of any scheme amendments made as a result of any cost cap breaches, will be determined for each scheme.

Initial valuation results

The initial results from the 2016 actuarial valuations, based on the draft Amending Directions, indicate that for the majority of schemes the cost as measured by the cost cap mechanism has reduced compared to the position at the 2012 valuations by more than the 2% margin. As a result, changes to the schemes' provisions will be required in order to bring the scheme costs back to the original level.

There are a number of reasons for these reductions, but the following two areas in particular have resulted in lower expected costs for future pension payments under the cost cap mechanism:

- the short-term earnings growth assumptions have reduced and are now applied over a different period to the previous valuations (based on OBR forecasts);

[2] The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014

- the long-term mortality assumptions have changed to reflect reduced forecasts of future life expectancy (based on ONS projections).

The size of the cost cap breach varies by scheme, but typically the scheme costs as measured by the cost cap mechanism have reduced by between around 3% and 5½% of pensionable pay (with an average reduction of around 4%).

Conversely, the employer contribution rates (the amount that employers are required to pay to schemes on an ongoing basis) for all of these schemes have increased from their current levels, even before allowing for the cost of any changes which need to be made to the schemes as a result of the cost cap breaches.

This divergence reflects the different features which are used to measure the cost of the schemes for the purposes of the cost cap mechanism and for setting employer contribution rates. Whilst the changes to the short-term earnings growth and mortality assumptions that reduce the cost cap cost also reduce the employer contribution rates, this effect has been more than offset by increases resulting from the reduction to the SCAPE discount rate assumption[3]. The SCAPE discount rate effects sit largely outside of the cost cap mechanism.

After allowing for the impact of changes which will be required to rectify the cost cap breaches and the proposed changes to the actuarial assumptions for the 2016 valuations as set out in the draft Amending Directions, the initial valuation results indicate that total employer contribution rates will be required to increase from current levels by between around 5% and 13% of pensionable pay (the amounts varying by scheme across this range).

The table below shows an analysis of the main differences between the original employer cost caps (which were set at the 2012 valuations) and the updated costs of the schemes (from the initial 2016 valuation results), averaged across six of the largest schemes[4].

	Past service	**Accrual cost**
Change in short-term financial assumptions	-1.1%	n/a
Change in mortality assumptions	-0.9%	-0.9%
Changes in other demographic assumptions	-0.1%	-0.3%
Change in average age	n/a	-0.2%
Change in average SPa	n/a	-0.3%
Identified experience gain	-0.2%	n/a
Mortality improvements: due to elapsed time	n/a	0.2%
Total change in cost cap cost of the schemes (past service/accrual cost)	-2.3%	-1.5%
Change in cost cap of the schemes	**-3.8%**	

It is worth noting that the changes in the cost cap cost of the schemes between the 2012 and 2016 valuations are almost entirely due to changes in actuarial assumptions, and in particular the short-term financial and the mortality assumptions.

[3] SCAPE stands for Superannuation Contributions Adjusted for Past Experience, and is the methodology used to determine the discount rate used to set contributions rates for the unfunded public service pension schemes through valuations. The SCAPE discount rate was reduced from 3.0% per annum above CPI to (i) 2.8% per annum above CPI at the March 2016 Budget, and (ii) 2.4% per annum above CPI at the October 2018 Budget.

[4] The figures in this table are a weighted average (by 2019/20 projected payroll) across the schemes for the civil service, NHS, Teachers, Police, Fire and Armed Forces (only for those schemes which include members in England)

This highlights how the tensions between some of the government's objectives – in particular those on no bias (providing for assumptions to be best estimates), consistency (allowing for similar treatment across all the schemes) and sustainability (changes in the cost caps including the effect of both experience and changes to assumptions) – impact upon the valuation results in practice.

Whilst it is important to reflect emerging experience when setting best estimate assumptions, the structure of the cost cap mechanism requires changes in costs resulting from amendments to certain assumptions to be recognised immediately, leading to potential volatility of outcomes. In due course (over many decades) any deviation between assumptions and experience will flow through the cost cap mechanism anyway – but if certain key assumptions were changed less frequently then this would come through at a slower rate and thereby lead to less volatility.

Government objectives

The government's initial objectives and principles for the valuation directions are described in the HMT 2014 policy paper "Public service pensions: actuarial valuations and the employer cost cap mechanism" published in March 2014[5]. This policy paper notes that the directions will ensure regular actuarial valuations of the reformed public service pension schemes are carried out on a transparent and consistent basis. The policy paper also notes a key objective – to ensure a fair balance of risks between scheme members and the taxpayer – with the cost cap mechanism providing backstop protection to taxpayers, to ensure that the risks of pension provision are shared with scheme members.

The paper also outlines nine principles which HMT had regard to in preparing the directions – completeness, no bias, discount rate, consistency, clarity, cost control, sustainability, technical immunity and stability.

You have confirmed in paragraph 7 of your letter that these objectives and principles continue to apply for the current round of actuarial valuations and the Amending Directions. Paragraph 4 of your letter also outlines six purposes which the Amending Directions are intended to achieve.

Detailed professional opinion

Overall opinion

Overall, I consider that the Amending Directions will deliver results which are, in the round, technically complete and coherent. I would note however that because this is the first valuation at which the cost cap mechanism has been tested and in view of the complex nature of actuarial valuations, it is impossible to be completely certain at a detailed level that the Amending Directions are fully technically complete and coherent until the valuations they apply to have been completed. Accordingly, it will be appropriate to keep the directions under review.

There are areas of conflict between some of the government's stated objectives (in particular, no bias and consistency) which mean that they cannot all be met in full and there are some trade-offs between them – although this is not due to a particular change in approach in the Amending Directions compared to the 2014 Directions.

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/289366/public_service_pensions_actuarial_valuations_130314.pdf

Many of the objectives (such as clarity, cost control, sustainability and stability) relate to information disclosed in valuation reports and the approach to measuring changes in the cost of the schemes against the employer cost cap. There have been limited amendments to the directions in these areas, and the proposals in the Amending Directions largely continue to meet the requirements of these objectives (and to the same extent that they did in the 2014 Directions).

However, the technical immunity objective (which requires the cost cap to be unaffected by changes to the discount rate, long-term earnings growth and price inflation assumptions) is not being precisely complied with, as these assumptions do have an impact, albeit a marginal one, on the size of the cost cap breaches in the 2016 valuations. It would be possible to adjust the Amending Directions to remove some of these effects if that is desired, to improve consistency with the original policy intent. To do this would require "hard-coding" the SCAPE discount rate assumption of 3% per annum used to set the initial employer cost caps into the cost cap mechanism and could give rise to tensions relative to some of the other objectives. This may be something the government would prefer to consider in more detail as part of the review of the cost cap mechanism in due course.

The draft Amending Directions introduce additional requirements for actuarial certification of the rectification of any cost cap breaches, which are relevant to some of the objectives (in particular no bias and consistency). It should be noted that the structure of the directions means that cost cap costs can only be changed by amending the value of benefits for current active members (not deferred members or pensioners) and only in respect of accrual in certain periods[6]. The draft Amending Directions will accommodate certain simple rectifications, for example an increase to accrual rates. But, to the extent that different scheme benefit improvements are proposed, there could be a need to make further changes to the Amending Directions. This is because improvements to certain benefits may influence changes in member behaviours, the prospect of which may result in the need to revisit demographic assumptions. For example, changes to schemes' retirement lump sum provisions might lead to a need to consider changing the assumption about take-up of commutation in order to maintain assumptions that are consistent.

As this actuarial certification is a new feature of the valuation process which has yet to be worked through in practice, careful consideration will be needed of how this will operate under the Amending Directions. Accordingly, whilst you may be content to finalise the draft Amending Directions so that final valuation reports can be issued, as noted in your letter you may need to consider whether any further amendments should be made to the Amending Directions before the cost cap breach certification process is complete, should any issues arise as part of this process.

More detailed commentary

In this section I comment in more detail on the extent to which each of the objectives set out in your letter is being met by the draft Amending Directions. Note that the paragraph numbers quoted are those that would appear in the consolidated directions (after the draft Amending Directions have been implemented), rather than the paragraph numbers from the Amending Directions themselves.

In my opinion, each of the six purposes listed in paragraph 4 of your letter is fulfilled in the draft Amending Directions, as set out in the table on the next page, subject to the further comments I make below regarding the specific objectives.

[6] For example, the cost cap cost of the schemes will not be affected by changes which affect the value of benefits built up in the 3-year period between the valuation date and the implementation date for new employer contribution rates, or changes to the value of future service benefits for any protected active members who remain in the final salary schemes.

Purpose	Direction numbers
(a) to update the assumptions that the directions require schemes to use in completing their valuations to current central best estimates (without any adjustment for prudence or optimism);	14 - 18
(b) to deliver the previous commitment to broadly exclude the impact of SCAPE discount rate changes from the cost cap mechanism;	30 - 42A
(c) to implement the government's decision to change the SCAPE discount rate from 2.8% plus CPI to 2.4% plus CPI, which was confirmed at Budget 2018;	18(a), 25(4)
(d) to extend the directions to clarify the process for actuarial costings and reporting in relation to rectifying any cost cap breaches;	49A - 49D
(e) to improve the transparency of the valuation reports by enhancing the disclosure requirements; and	21, 23
(f) to make miscellaneous changes to ensure that the valuations operate as intended, one of these is a technical change that is relevant for all schemes - all the others relate to scheme specific issues that have emerged since the previous valuations (generally relating to valuation timing cycles, litigation outcomes or data quality).	2, 6, 8, 25, 35, 47, 50, 55 and Schedules 1, 2, 3

I comment below on the nine objectives set out in paragraph 7 of your letter.

- *Completeness – "employer and employee contributions, taken together, reflect the full costs of the benefits provided by public service pension schemes, including any past service effects that arise between valuations"*

The specified actuarial methodology of the projected unit method (*see Direction 11*) provides for contributions to reflect the expected cost of benefits provided over the period following the valuation, based on the assumptions adopted (although it should be recognised that the cost as a percentage of pensionable pay would increase if the workforce ages).

The specification of notional assets for the first valuations (*see Direction 25*) for each scheme fits with this objective, by including any past service effects that have arisen since previous valuations. This does lead to a tension with the consistency objective, although it is consistent with the approach adopted for the 2014 Directions.

The Amending Directions include amendments to ensure that the relevant costs of the additional lump sums paid out as a result of the Milne v GAD litigation, and the additional costs arising from the retrospective introduction of the Fee-Paid Judges pension scheme in 2017, are reflected in employer contribution rates *(see Direction 25)*, which is consistent with this objective.

Lastly, the Amending Directions update the notional assets for the civil service scheme, resulting from a discrepancy in the 2012 valuation data *(see Schedule 2)*. This is consistent

with the treatment of similar data issues for other schemes which arose during the 2012 valuations and is in line with the completeness objective.

- *No bias – "assumptions used to assess costs should be best estimates, with no margin for prudence or optimism"*

The Amending Directions specify a number of assumptions that must be used by all schemes in their valuations *(see Directions 14 to 18)*. These include:

  - Economic and financial assumptions – these are based on economic forecasts produced by the OBR, as set out in the Economic and Fiscal Outlook (EFO) published in March 2018, which are intended to be best estimates without any margins for prudence or optimism.

  - Assumptions for future changes in life expectancy – these are based on the principal population projections for the UK produced by the ONS, which are produced on a best estimate basis. I note that, in the technical annex to the draft Amending Directions which you published in September 2018 ("the technical annex"), you express the view that whilst there is some emerging evidence that public service pension scheme life expectancy changes may not fully align to the general population experience, there is no clear trend at the moment to justify changing from the current approach of using the latest principal population projections. I would concur with this view.

  - The pattern of future State Pension ages to be assumed in the valuations – this is in line with currently published legislation governing such changes.

  - Commutation assumption – this has been updated from 15% to 17.5% to reflect recent experience and has been set on a best estimate basis, as explained in the technical annex.

Whilst these assumptions are set to be in line with the no bias objective, the technical annex noted that the assumptions for pension increases and earnings would not be updated to reflect any further EFO in the next 12 months. In particular, this means that no account has been taken of the updated forecasts set out in the EFO published in October 2018. This approach is reasonable from a practical perspective since a line has to be drawn somewhere to enable calculations to be carried out, noting that schemes will be signing their valuation reports at different dates (some of which may be after future EFOs have been issued). Drawing this line supports the consistency objective but does lead to the potential for the no bias objective to become compromised.

For assumptions which are determined on a scheme-specific basis, the directions state that these "must be the responsible authority's best estimates and not include margins for prudence or optimism" *(see Direction 19)*, which is in line with the no bias objective.

- *Discount rate – "the discount rate will be 2.4% per annum plus CPI, in line with the Office for Budget Responsibility's long-term growth forecasts, as set out in their July 2018 Fiscal Sustainability Report"*

The SCAPE discount rate is subject to a separate review process, and was reduced to CPI+2.4% pa at the 2018 Budget. My letter of 25 October 2018 (in response to your letter of 23 October) sets out my professional opinion on this change[7]. The Amending Directions reflect this confirmed change to the SCAPE discount rate *(see Direction 18)*.

[7] These letters are set out in Appendix C to this letter

- *Consistency – "valuations of all public schemes should be consistent, allowing for comparisons to be made across schemes, including over time. Where different scheme workforces have different characteristics, then there should be consistency in the way that assumptions are set"*

As noted above under the no bias objective, the Amending Directions specify a number of assumptions that must be used by all schemes in their valuations and also state that other scheme-specific assumptions should be set on a best estimate basis. Whilst this is broadly in line with the consistency objective, there could still be inconsistencies between schemes for the simple reason that best estimates may be set in different ways for different schemes, based on experience levels that will differ by scheme. Thus, certain assumptions may vary for different schemes for reasons which may not be entirely attributable to genuine differences in workforce characteristics. In this regard, the directions effectively give the no bias objective precedence over the consistency objective, which is the same as the approach adopted in the 2014 Directions. You may wish to consider whether the balance is right between which assumptions are specified in the directions and which are set at a scheme-specific level – greater consistency between schemes could be achieved by specifying more assumptions in the directions, but this could create more tension with the no bias objective.

The proposed changes to the timings for the LGPS valuations *(see Direction 6)* are intended to assist with comparisons between schemes and hence would appear to be more in line with the consistency objective than the 2014 Directions. These proposals may also help with data problems associated with the LGPS valuations, noting the difficulty of obtaining reliable data for the cost cap valuations for LGPS when these are carried out at a different date to the scheme funding valuations. (I comment further on valuation data quality more generally in Appendix A to this letter.)

Similarly, the new requirement that any preliminary valuation which takes place after the 2014 Directions are amended will be carried out using the same assumptions as other schemes used to conduct preliminary valuations *(see Direction 50)* is also in line with this objective.

The proposed changes to reflect the position of the reformed pension scheme for the Security Services (*see Directions 6 and 50*) allow for different valuation dates and implementation periods for contribution rates as compared with those which apply for other schemes. This is not entirely in line with the consistency objective but is not unreasonable as the proposals do enable future scheme valuations to be aligned with the cycle of the other schemes.

The proposed changes in respect of the pension scheme for members of the National Assembly for Wales *(see Directions 47 and 55)* enable the cost cap mechanism to work in a different way to all other schemes covered by the directions, being based on future service accrual only, alongside some technical amendments regarding the membership profile. I note from your letter that these changes were not included in the draft Amending Directions published by HMT on 6 September 2018, but have been subsequently added to the draft Amending Directions for the purposes of your letter. The proposed approach does not appear to be in line with the consistency principle when considering the directions as a whole, in that it provides for a different cost cap mechanism to that which applies to all other schemes covered by the directions. You have noted in your letter that these amendments are, as requested by the Welsh Government, intended to align with the approach adopted in implementing reforms to the scheme for UK Government MPs, and so in this narrower context they are consistent. However, as currently drafted, these proposed amendments mean that there is a requirement to calculate and disclose a number of items for this

scheme which would not appear to be necessary[8]. It should be noted that this is a funded scheme which carries out a separate funding valuation under the scheme rules to set the employer contribution rate and hence the valuation under the directions for this scheme is only required to determine whether there has been a breach in the cost cap. Accordingly, you may wish to consider whether these requirements could be removed, to avoid the additional costs associated with having to calculate these items which could be disproportionate given the small size of the scheme.

- *Clarity – "the Directions should lead to valuation reports that include sufficient information to allow those who are technically competent to understand how the valuation has been carried out. Valuations reports should provide clear and transparent assessments of schemes' costs, and reports should include information that may be helpful to scheme members and stakeholders in understanding the costs of providing benefits"*

The requirements for certain information to be published in scheme valuation reports are consistent with this objective *(see Direction 21)*. The Amending Directions provide for some additional information to be disclosed on the sensitivities to certain assumptions and information about projected levels of future service and payroll levels (beyond the requirements of the 2014 Directions), and these additions further complement the requirements of the clarity objective.

Additionally, the process introduced by the Amending Directions for scheme actuaries to follow for schemes which breach the cost cap *(see Direction 49)* should further add to compliance with the clarity objective.

- *Cost control – "the directions ensure that the 2016 valuation report includes valuation results that measure changes in the costs of the schemes against the employer costs cap (as envisaged in Section 12(4)(b) of the Act and as required by Section 12(5) of the Act)"*

The directions require disclosure of this information in the valuation reports *(see Direction 23)*, thus meeting the requirements of this objective. This is also consistent with the 2014 Directions.

- *Sustainability – "for each scheme, the measurement of changes in the cost of the scheme against the employer cost cap (as envisaged in Section 12(4)(b) of the Act and as required by Section 12(5) of the Act) includes effects of scheme experience and future valuation assumptions differing from the assumptions used to determine the employer cost cap"*

The methodology set out in the directions *(see Directions 30 to 43 and 48 to 53)* is in line with the requirements of this objective and is consistent with the 2014 Directions. However, as I have commented in this letter, the initial 2016 valuation results have highlighted how the majority of the changes in the scheme costs calculated using the cost cap mechanism have resulted from changes to the actuarial assumptions being adopted, with very little of the changes resulting directly from the effect of actual observed experience over the inter-valuation period.

[8] specifically, the value of the liabilities using direction assumptions, an analysis of changes in those liabilities, and an employer contribution rate for the scheme as if it was an unfunded scheme

- *Technical immunity – "the measurement of changes in the costs of the scheme against the employer cost cap excludes effects caused by changes to the discount rate, the long-term earnings assumptions or changes in the actuarial methodology used in the valuations"*

The methodology set out in the directions is largely in line with the requirements of this objective. In practice, however, the current structure does mean that changes to the discount rate and long-term earnings assumptions will affect the calculations to a certain minor extent.

This is because the choice of discount rate affects the calculation of the cost cap liabilities, and hence the size of any surplus or deficit which is then spread over a 15-year period. The long-term earnings growth assumption has a much bigger impact on the size of the initial fund than on the value of the cost cap liabilities, and because of this asymmetry a change to this assumption can also have an impact on the cost cap cost of the schemes.

These features have affected the scale of the cost cap breaches in the 2016 valuations. As I have noted, it would be possible to adjust the Amending Directions to remove some of these effects if that is desired to retain consistency with the original policy intent This would require "hard-coding" into the cost cap mechanism the SCAPE discount rate assumption of 3% per annum used to set the initial employer cost caps.

- *Stability – "for each scheme, the measurement of changes in the cost of the scheme against the employer cost cap excludes:*
  - *costs of the scheme which relate to the payment of benefits to deferred members and pensioner members in existing/connected schemes*
  - *changes in the cost of the new schemes which arise due to the effects of members having service in the existing schemes."*

The methodology set out in the directions *(see Directions 30 to 43 and 48 to 53)* is broadly in line with the requirements of this objective and is also consistent with the 2014 Directions.

Further commentary

Whilst I am content that the draft Amending Directions will deliver results which largely meet the stated objectives, it is important to recognise that there is much professional judgement involved in the scheme valuation process, particularly around the derivation of best estimate actuarial assumptions and the way in which certain objectives have been interpreted and prioritised by HMT. Additionally, it would be possible for a different balance of assumptions to be specified in the directions and set on a scheme-specific basis, which could materially affect the results. This means that it would be entirely possible for a different set of Amending Directions and/or valuation results to be produced which would meet the majority of the stated objectives equally well.

The cost cap breaches that have occurred are a result of the operation of the structure of the cost cap mechanism and the draft Amending Directions. The extent to which this is operating in line with the original policy intentions is a matter which could be looked at as part of the review of the cost cap mechanism.

In Appendix A to this letter I set out some general commentary in other areas, including a more detailed analysis of the impact of actuarial assumptions upon the initial valuation results.

Compliance with technical standards

This letter has been prepared in accordance with the applicable Technical Actuarial Standards: TAS 100 and TAS300 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.

Third party disclaimer

This letter is addressed to HMT. The purpose of this letter is to give my professional opinion on the draft Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018. I understand that HMT intend to publish this letter. Other than HMT, no person or third party is entitled to rely on the contents of this letter, and GAD has no liability to any person or third party for any act or failure to act based on this letter.

Yours sincerely

Martin Clarke
Government Actuary

Appendix A – additional comments on the impact of actuarial assumptions and data quality

In this Appendix I set out some additional comments on various aspects of the directions, including a more detailed analysis of the impact of actuarial assumptions upon the initial valuation results and how these features may affect future valuations. Please note that this Appendix does not alter in any way my professional opinion on the Amending Directions, as stated in the main body of this letter, but is intended to provide some further context and relevant observations which may be worthy of further consideration.

Background

The directions specify a number of assumptions that must be used by all schemes in their valuations. These include the economic and financial assumptions (based on economic forecasts produced by the OBR), assumptions for future changes in life expectancy (based on population projections produced by the ONS), and certain commutation assumptions.

Most other assumptions are set on a scheme-specific basis, with a requirement that the Minister responsible for each scheme sets them as best estimates, without margins for prudence or optimism.

It should be noted that the assumptions that have been used in the valuations are based on current legislative requirements and do not allow for the potential impact of any changes that may be required to public service pension schemes as a result of age discrimination litigation that is currently in progress[9].

Setting actuarial assumptions

Whether assumptions are directed or set at scheme-specific level, it can be particularly challenging to set appropriate "best estimate" actuarial assumptions to project the future experience of pension schemes. Such assumption setting is an imprecise science – actual experience will almost inevitably deviate from previously set assumptions.

Even when there is a substantial body of past experience data, it can be challenging to analyse different aspects of scheme experience from the membership movement data. Trends can take decades to emerge and can change over time, making it difficult to determine suitable valuation assumptions. Where there are major changes to pension scheme design, as has been the case following the introduction of the new public service schemes, the process can be a lot more challenging given the lack of available relevant experience data. Therefore, one can only have relatively limited confidence in any central "best estimate" basis.

Hence, whilst it is important to regularly review the appropriateness of the assumptions that have been adopted, assumption-setting is a process of continual updating over successive valuations. Actuarial valuation results can be very sensitive to some of the assumptions adopted, and the impact of changing certain assumptions can lead to material changes in the resulting costs, which can be seen from the table on page 3 of this letter.

Changes to short-term assumptions

The tables below set out a summary of the short-term economic assumptions which are specified in the directions and how they have changed between those used in the preliminary valuations, mainly at 31 March 2012 (as set out in the 2014 Directions) and

[9] See https://www.gov.uk/employment-appeal-tribunal-decisions?tribunal_decision_categories%5B%5D=age-discrimination

those proposed for the first valuations, mainly at 31 March 2016 (as set out in the Amending Directions).

Preliminary valuations, mainly at 31 March 2012 (as set out in 2014 Directions)

Assumption	CPI (April following year-end)	Earnings (April following year-end)	Public service earnings growth
Direction no.	14	16	17
Year			
2016/17	Long-term (2.0%)	3.6%	2.5%
2017/18	Long-term (2.0%)	3.7%	3.0%
2018/19	Long-term (2.0%)	3.7%	3.0%
2019/20	Long-term (2.0%)	Long-term (4.75%)	Long-term (4.75%)
2020/21	Long-term (2.0%)	Long-term (4.75%)	Long-term (4.75%)
2021/22	Long-term (2.0%)	Long-term (4.75%)	Long-term (4.75%)
2022/23	Long-term (2.0%)	Long-term (4.75%)	Long-term (4.75%)
2023/24	Long-term (2.0%)	Long-term (4.75%)	Long-term (4.75%)

First valuations, mainly at 31 March 2016 (as set out in Amending Directions)

Assumption	CPI (April following year-end)	Earnings (April following year-end)	Public service earnings growth
Direction no.	14	16	17
Year			
2016/17	n/a (order made)	n/a (order made)	1.2%
2017/18	n/a (order made)	n/a (order made)	2.2%
2018/19	2.2%[10]	2.7%	2.1%
2019/20	1.8%	2.4%	2.3%
2020/21	Long-term (2.0%)	2.5%	2.6%
2021/22	Long-term (2.0%)	2.8%	2.8%
2022/23	Long-term (2.0%)	3.0%	3.0%
2023/24	Long-term (2.0%)	Long-term (4.2%)	Long-term (4.2%)

Earnings growth

The directions specify the assumptions to be used for general earnings growth. In the short-term period of 7 years from the valuation date, these assumptions are derived from a combination of observed experience (over the initial period from the valuation date) and OBR projections for payroll per head for government employment, taking account of future agreed pay awards and applying a central pay drift assumption based on observed trends. The long-term assumption after this initial 7-year period is based on the OBR's long-term earnings forecast; this has changed from 4.75% a year at the 2012 valuations to 4.2% a year at the 2016 valuations.

The cut-off point of 7 years for the switch from short-term to long-term earnings assumptions is somewhat arbitrary, in line with the period of short-term projections published by the OBR. An alternative approach to smooth the transition from short-term to long-term assumptions could be to allow for the OBR's projected earnings assumptions beyond the initial 7-year period, noting that these do not reach the long-term rate of 4.2% per annum until 14 years after the valuation date in 2030/31 in the March 2018 EFO[11].

[10] Note that the directions require that if the relevant pensions increase order for April 2019 (which is expected to be 2.4%, in line with September 2018 CPI) has been made when the valuation results are finalised, that this rate should be used instead of the 2.2% specified in the Amending Directions – if so, this will have a small impact on the valuation and cost cap results.

[11] See "Long-term economic determinants" spreadsheet at https://obr.uk/efo/economic-fiscal-outlook-march-2018/

Public sector earnings growth experience in recent years has been somewhat lower than was anticipated at the 2012 valuations, and short-term projections have changed substantially over the inter-valuation period. As a result, the short-term earnings growth assumptions for the period from 2016-2019 in the 2014 Directions for the 2012 valuations are markedly different to those in the draft Amending Directions for the 2016 valuations, as shown in the table above.
The structure of the directions means that the impact of this feeds through to the cost cap mechanism, and hence the change in the 2019-2023 earnings assumption – from a long-term rate in the initial cost cap fund set during the 2012 valuations to a short-term rate in the 2016 valuations – has resulted in a source of downwards cost cap pressure.

This highlights how each of the observed experience, the changes to future assumptions, the point of moving from short-term to long-term assumptions and the prescribed starting point for measuring the cost cap costs can have a material impact on the cost cap mechanism. These features result in an overall downwards cost pressure in the 2016 valuations of around 1.1% of pensionable pay (as shown in the table on page 3 of this letter).

Mortality assumptions

The impact of changing the post-retirement mortality assumptions is mainly the result of moving from using the ONS 2012-based population projections to the 2016-based projections, as specified in the Amending Directions. Schemes have also changed their baseline mortality assumptions in line with recent scheme experience, which has had a much smaller impact on the results. (There is also a minor impact shown in the table from improvements due to elapsed time[12].)

The ONS 2016-based projections are based on actual population experience up to 2016 then converge to a long-term rate of mortality improvement of 1.2% a year for most ages in 2041 (the 25th year of the projections) and thereafter. This is the same general long-term rate of improvement as the 2012-based projections.

However, life expectancies using the ONS 2016-based projections are on average lower than the comparable life expectancies using the 2012-based projections, reflecting a statistically significant slowdown in the long-term improvement in age-standardised mortality rates which has taken place during the early 2010s. This has resulted in a reduction to both the past service and accrual costs, as shown in the table on page 3 of this letter, illustrating how sensitive the cost cap mechanism is to changes in the mortality assumptions.

The ONS publishes new sets of population projections every two years and, despite the smoothing methodologies adopted, successive sets of ONS projections can produce significant variations in future improvement rates over the short to medium term (resulting in the effect noted in the previous paragraph). It is worth noting that initial population mortality experience since mid-2016 has been heavy and this may lead to further future downwards pressure on the cost cap cost of the schemes and employer contribution rates at the next valuations, depending upon how this trend progresses over the period until the ONS 2020-based projections are published.

Further, whilst the long-term improvement rate has remained consistent at 1.2% a year between the 2012-based and 2016-based projections, any change to this long-term rate in

[12] This is because a member aged 45 (for example) at the 2016 valuations will have a higher future life expectancy than a member aged 45 at the 2012 valuations

the future could have a much larger impact on the results of any future valuations which use such a new rate.

Commutation assumptions

The directions specify the assumption to be used by all schemes for the proportion of pension that members will exchange for a tax-free lump sum at retirement (for schemes where there is no automatic lump sum and where commutation is at the rate of £12 of lump sum for every £1 of pension surrendered). This assumption was specified as 15% for the 2012 valuations. Following analysis of recent experience data, HMT has determined that this is to be increased under the Amending Directions to 17.5% for the 2016 valuations. This change has the effect of reducing the accrual cost of the schemes, both for setting ongoing employer contribution rates and for assessing the impact under the cost cap mechanism, by around ¼% of pensionable pay.

The revised assumption is based on experience that has emerged following the introduction of the new schemes and that was not available at the time the previous assumption was set. The effect of changing the assumption is to reduce the cost cap cost of the schemes, but it is arguable whether the actual costs have reduced or whether the original assumption overstated them.

It could be argued that the commutation assumption does not necessarily need to be amended at this valuation to fully reflect the emerging experience. Whilst the assumption should be set on a best estimate basis, it could be appropriate to change it less frequently as more relevant experience emerges gradually over time. As noted in the main body of this letter, if certain assumptions were adjusted less frequently, this should lead to less volatility.

Other demographic assumptions

There are a number of other demographic assumptions which can have an impact on both employer contribution rates and the cost cap mechanism. These include assumptions for rates of withdrawals from active service, age retirement patterns, promotional pay scales, pre-retirement mortality rates, ill-health retirements and the proportion of members with dependants.

The initial 2016 valuation results indicate that for the majority of schemes, the effect of changing these assumptions is small on both employer contribution rates and the cost cap mechanism, with the recommended assumption changes mainly changing costs by less than ½% of pensionable pay. However, this is not exclusively the case – for example, for one of the larger schemes, the proposed changes to the demographic assumptions reduces the employer contribution rate by around 1½% of pensionable pay, much of which is as a result of proposed changes to the ill-health retirement assumptions.

For this scheme it is unlikely that there has been a fundamental shift in costs in recent years to this extent due to changes in ill-health retirement patterns, and more probable that recent experience data has suggested that a refinement to the previous assumption would be appropriate. However, along with introducing a sizeable reduction in employer contribution rates, the way that the cost cap mechanism operates means that the effect of refining the demographic assumptions at this valuation has been to contribute towards a required improvement in benefits.

State Pension age

The new public service schemes link normal pension age for future service accrual to a member's State Pension age (SPa). This design feature links the value of benefits accruing over time automatically to changes in SPa, noting the government's framework for changing SPa over time to reflect improvements in longevity[13].

However, there is a disconnect between the timing of changes to the mortality assumptions used in the scheme valuations (which under the directions policy will be updated every four years based on the latest ONS projections) and changes to legislated SPa timetables (which are less frequent, do not coincide precisely with valuation dates, and have a timing lag[14]). Further, this disconnect is effectively "hard-coded" into the starting point for the cost cap mechanism (at which point calculations were based on the ONS 2012-based principal projections and the SPa timetables in place at that time).

Although the link of normal pension age to SPa allows for some of the impact of changes in longevity over the long-term, these measures are not moving in tandem. The initial 2016 valuation results highlight how this can increase volatility in the short-term and lead to potential inconsistencies at valuations.

The table on page 3 of this letter also shows that SPa can have an impact on the changing cost of the schemes even when there are no changes to SPa timetables between valuations. This is because, for a pension scheme active membership at the 2016 valuations with the same average age as at the 2012 valuations, the SPa will on average be later as a result of legislated SPa timetables changing over time. This higher retirement age results in cost savings to the schemes, which has contributed a small downwards pressure on the cost cap costs of the schemes.

Scheme membership profile

A feature of defined benefit pension schemes is that employer costs are set on an aggregate basis across a scheme. When the membership profile of a scheme changes – for example, if the average age of the active scheme members increases or reduces – this can have a knock-on effect to the overall costs. As the directions require the estimation of the cost of benefit accrual for future periods, any change to assumptions about ageing in the future can also contribute to changes in expected costs.

The initial results of the 2016 valuations illustrate this point. Changes in the average age of the membership have impacted upon the employer contribution rates and cost cap costs of the schemes. For most schemes this is a fairly minor effect, but for one large scheme the effect has been much bigger. For this scheme, an unanticipated reduction in the average age of the active membership between the 2012 and 2016 valuations reduced the employer contribution rate and the cost cap costs by a little over ½% of pensionable pay.

The fact that this has affected one scheme much more than the others illustrates that this feature, similar to the effect of changing demographic assumptions, can also result in uncertainty and volatility – workforce profiles can change over time but the extent of such changes can be often difficult to anticipate in advance when setting valuation assumptions.

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[13] This framework, which was reviewed in 2017, seeks to maintain a proportion of up to 32% adult life in receipt of State Pension – although the methodology effectively shares the impact of increasing longevity between individuals and the government, as for each year of increased longevity, SPa (and hence normal pension age in the public service schemes) is increased by up to 0.68 years. See https://www.gov.uk/government/publications/state-pension-age-review-final-report

[14] Current legislation requires the SPa timetable to be reviewed at least every six years, but the legislated SPa timetable was not changed following the 2017 review.

Valuation data quality

The initial 2016 valuation results have highlighted a number of issues with the quality of the membership data provided for the purpose of the valuations. Valuation results are critically dependent on the quality and accuracy of the data used, and the various scheme actuaries for the relevant schemes have noted a number of issues:

- the data provided for the valuations was not fully correct and complete for all members and so approximations have necessarily been made to enable valuation calculations to be undertaken;
- data limitations have resulted in some difficulty in determining liability figures to a reasonable degree of accuracy;
- a lack of confidence in the data at any particular effective date and concerns about inconsistency with data at other relevant dates.

For some schemes, it was also noted that there are issues with the membership movement data, which could potentially feed through into the analysis of experience. This could therefore result in scheme experience appearing to deviate from the underlying reality over the inter-valuation period. This could then lead to unexplained changes from one valuation to the next which might need to be rectified by further changes to assumptions at future valuations, potentially introducing additional volatility.

There were previously a number of problems with data quality at the 2012 valuations. This led to a number of amendments to the 2014 Directions being required after they had originally been signed, to correct notional asset figures at the first valuations due to previous data errors for various schemes.

The initial 2016 valuation results highlight that data quality continues to be a major issue. This potentially means that benefit improvements made as part of the forthcoming cost cap rectification process may need to be revisited in future, if the extent of data deficiencies only becomes apparent at a subsequent valuation.

Accordingly, I would maintain that it is very important to consider initiatives to address valuation data deficiencies, in good time before the next round of valuations take place, to reduce the risk of these issues continuing to arise in the future. My colleagues in GAD are able to, and do, support these initiatives where appropriate.

Appendix B – HMT letter

The following pages contain a copy of the letter from Conrad Smewing (HM Treasury) to Martin Clarke (Government Actuary) of 9 November 2018 regarding the draft Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018.

HM TREASURY

Conrad Smewing
Director, Public Spending

www.hm-treasury.gov.uk

1 Horse Guards Road
London
SW1A 2HQ

9 November 2018

Martin Clarke
Government Actuary
Via email

Dear Martin

Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018

1. As you know, Section 11(2) of the Public Service Pensions Act 2013 (the Act) enables HM Treasury to make Directions regarding valuations of the public service pension schemes made under the Act, and relevant connected schemes. Section 12(3) of the Act also enables HM Treasury to make Directions setting out how the employer cost caps will be set for schemes made under the Act.

2. HM Treasury made directions, the Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 (the directions), under sections 11(2) and 12(3) of the Act on 11 March 2014. These directions set out when and how the first valuations of the schemes were to be undertaken, generally with an effective date of 31 March 2012, and the framework for subsequent valuations of the schemes. Minor amendments have been made since (four of which related to data issues emerging as the 2012 valuations were completed under these directions).

3. HM Treasury has considered the changes needed to the directions for the current valuations of the public service schemes, with an effective date of 31 March 2016. We have shared drafts and taken advice from your department in considering the necessary amendments to the directions and I am grateful to your officials for all their work. I am now writing to formally ask for your professional opinion on the proposed final directions, which I plan to make shortly to enable the valuations of the schemes to be concluded and for scheme managers to take necessary steps to implement changes from April 2019.

4. We are updating the directions to achieve 6 things:

   a. to update the assumptions that the directions require schemes to use in completing their valuations to current central best estimates (without any adjustment for prudence or optimism);

   b. to deliver the previous commitment to broadly exclude the impact of SCAPE discount rate changes from the cost cap mechanism;

   c. to implement the government's decision to change the SCAPE discount rate from 2.8% plus CPI to 2.4% plus CPI, which was confirmed at Budget 2018;

   d. to extend the directions to clarify the process for actuarial costings and reporting in relation to rectifying any cost cap breaches;

   e. to improve the transparency of the valuation reports by enhancing the disclosure requirements; and

   f. to make miscellaneous changes to ensure that the valuations operate as intended, one of these is a technical change that is relevant for all schemes - all the others relate to scheme specific issues that have emerged since the previous valuations (generally relating to valuation timing cycles, litigation outcomes or data quality).

5. The Treasury published a draft of the directions on 6 September 2018. Further detail on each of the amendments we are proposing was set out in the technical annex that was published alongside the draft directions. Since that publication we have drafted one further set of amendments to implement the cost cap mechanism for the pension scheme for Members of the National Assembly for Wales. These amendments deliver the approach requested by the Welsh Government which aligns the cost cap mechanism in the Welsh Assembly pension scheme with that adopted by the Independent Parliamentary Standards Authority in implementing reforms to the scheme for UK Government MPs.

6. The Chief Secretary to the Treasury set out, in her written ministerial statement on 6 September 2018 (HCWS945) that she would be asking you to conduct a review of the cost cap mechanism for the public service pension schemes. The Chief Secretary will write separately about the review, after the current valuations are completed.

7. Our objectives for the valuations continue to be:

a. Completeness – employer and employee contributions, taken together, reflect the full costs of the benefits provided by public service pension schemes, including any past service effects that arise between valuations;

b. No bias – assumptions used to assess costs should be best estimates, with no margin for prudence or optimism;

c. Discount rate – the discount rate will be 2.4% per annum plus CPI, in line with the Office for Budget Responsibility's long-term growth forecasts, as set out in their July 2018 Fiscal Sustainability Report;

d. Consistency - valuations of all public schemes should be consistent, allowing for comparisons to be made across schemes, including over time. Where different scheme workforces have different characteristics, then there should be consistency in the way that assumptions are set;

e. Clarity – the Directions should lead to valuation reports that include sufficient information to allow those who are technically competent to understand how the valuation has been carried out. Valuations reports should provide clear and transparent assessments of schemes' costs, and reports should include information that may be helpful to scheme members and stakeholders in understanding the costs of providing benefits;

f. Cost control – the directions ensure that the 2016 valuation report includes valuation results that measure changes in the costs of the schemes against the employer costs cap (as envisaged in Section 12(4)(b) of the Act and as required by Section 12(5) of the Act);

g. Sustainability – for each scheme, the measurement of changes in the cost of the scheme against the employer cost cap (as envisaged in Section 12(4)(b) of the Act and as required by Section 12(5) of the Act) includes effects of scheme experience and future valuation assumptions differing from the assumptions used to determine the employer cost cap;

h. Technical immunity – the measurement of changes in the costs of the scheme against the employer cost cap excludes effects caused by changes to the discount rate, the long-term earnings assumptions or changes in the actuarial methodology used in the valuations; and

i. Stability – for each scheme, the measurement of changes in the cost of the scheme against the employer cost cap excludes:

    - costs of the scheme which relate to the payment of benefits to deferred members and pensioner members in existing/connected schemes

- changes in the cost of the new schemes which arise due to the effects of members having service in the existing schemes.

8. As has been noted in previous correspondence, the Treasury recognises that it is important that the Directions are kept under review in order to ensure that they deliver the Government's objectives. In particular, it was stated that the Treasury would review these Directions before each valuation round to ensure they remain fit for purpose.

9. I would be grateful if you could offer your professional opinion on these Directions (set out in the Appendix to this letter). In particular, I would welcome your views on the extent to which they meet the government's objectives and are technically complete and coherent.

10. We will consider whether further amendments to the directions are needed once scheme managers have identified the steps they wish to take in remedying any cost cap breaches.

11. I look forward to receiving your views.

Yours sincerely

Conrad Smewing

HM Treasury

The Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018

The Treasury, in exercise of the powers conferred on them by sections 11(2) and 12(3) of the Public Service Pensions Act 2013(**a**), make the following Directions.

Citation and entry into force

1. These Directions may be cited as the Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) Directions 2018, and come into force the day after they are signed.

Amendment of the 2014 Directions

2. The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 are amended as follows.

Interpretation

3. In direction 2 (interpretation), at the appropriate place insert—

> "“commuted portion” has the meaning given by rule B7(2) of the Firefighters' Pension Scheme Order 1992 or is within the meaning of rule B7(2) of the Police Pensions Regulations 1987, as appropriate;".

Effective date, from 2018

4. In direction 6(1) (effective date), after sub-paragraph (a) insert—

"(aa) in relation to a scheme providing benefits to employees of the Secret Intelligence Service or the Security Service, 31st March 2020;".

5. For direction 6(2), substitute—

> "(2) In relation to a scheme providing benefits to local government workers in Scotland—
>
> (a) the second valuation of a scheme must have an effective date of 31st March 2020; and
>
> (b) each subsequent valuation must have an effective date four years later than the effective date of the second (or last preceding) valuation.
>
> (3) The second, and each subsequent, valuation of a new public body pension scheme must have an effective date which is fixed by the public authority responsible for the scheme.
>
> (4) The second, and each subsequent, valuation of any other scheme must have an effective date which is four years later than the effective date of the first (or last preceding) valuations.".

DRAFT

(**a**) 2013 c. 25.

Implementation period

6.−(1) In direction 8(a) (implementation period)—

(a) after "workers" insert "in Scotland";

(b) after "date" insert "for the valuation with an effective date of 31 March 2017";

(c) omit "and".

(2) After paragraph (a), insert—

"(ab) in the case of a new public body pension scheme, a period fixed by the public authority responsible for the scheme; and".

Pension increase assumptions

7. In direction 14(2) (assumed rate of pension increases where rate not set by order), for sub-paragraphs (a) to (d) substitute—

"(a) 2.2% on 8th April 2019;

(b) 1.8% on 6th April 2020; and

(c) 2% on the first Monday in each tax year subsequently".

Earnings assumptions

8. In direction 16 (earnings measure), for sub-paragraphs (a) to (e) substitute—

"(a) 2.7% on the 1st April 2019;

(b) 2.4% on the 1st April 2020;

(c) 2.5% on the 1st April 2021;

(d) 2.8% on the 1st April 2022;

(e) 3% on the 1st April 2023; and

(f) 4.2% on 1st April in each year from 1st April 2024.".

9. In direction 17 (public earnings growth), for sub-paragraphs (a) to (h) substitute—

"(a) 1.2% during the calendar year ending on 31st March 2017;

(b) 2.2% during the calendar year ending on 31st March 2018;

(c) 2.1% during the calendar year ending on 31st March 2019;

(d) 2.3% during the calendar year ending on 31st March 2020;

(e) 2.6% during the calendar year ending on 31st March 2021;

(f) 2.8% during the calendar year ending on 31st March 2022;

(g) 3% during the calendar year ending on 31st March 2023; and

(h) 4.2% during each calendar year from 1st April 2023.".

SCAPE discount rate

10. In direction 18(a), for "3%" substitute "2.8% from 1st April 2016 to 31st March 2019 and compounded with 2.4% from 1st April 2019".

Assumed mortality rate

11. In direction 18(b), for "2012" substitute "2016".

Commutation assumption

12. In direction 18(e), for "15%" substitute "17.5%".

DRAFT

Contents of valuation report

13. For direction 21 (contents of the valuation report: information about the scheme and data), substitute—

"**21.**–(1) The valuation report prepared by the scheme actuary must include—

(a) information regarding the scheme membership used to carry out the valuation, including a summary of—

(i) scheme membership and other data used;

(ii) the checks carried out on the data by the scheme actuary, and the limitations of those checks; and

(iii) any adjustments or projections made to the data by the scheme actuary, the approach used in making them, and the rationale for them;

(b) a statement of the average age of the scheme members in pensionable service at the effective date;

(c) a statement of the average expected future pensionable service of the scheme members in pensionable service at the effective date, calculated in accordance with the requirements as to data, assumptions and methodology specified by these Directions;

(d) a statement of the total projected pensionable payroll, in nominal terms, at each of—

(i) the effective date;

(ii) the implementation date; and

(iii) the last day of the implementation period;

(e) a statement that the valuation results have been calculated in accordance with the requirements as to data, assumptions, and methodology specified by these Directions;

(f) a summary of the regulations, directions, and professional standards relating to the valuation;

(g) a summary of the main provisions of the scheme (with a separate summary for the main provisions of the scheme made under section 1 of the 2013 Act and those of any connected scheme);

(h) an analysis of the demographic experience carried out in accordance with direction 20;

(i) a statement of the assumptions used by the scheme actuary in preparing the report, including—

(i) a summary of the assumptions determined by the responsible authority under direction 19;

(ii) a statement of how regard has been had to the matters listed in direction 19(d) in making assumptions under direction 19(e);

(iii) an illustration of the main sensitivities of the valuation results to the assumptions, including the sensitivities mentioned in paragraph (2);

(j) a summary of any other liability of the scheme that the responsible authority has told the scheme actuary that it considers to be relevant; and

(k) any other matters that the scheme actuary considers to be relevant.

(2) The sensitivities to be illustrated must include the main sensitivities to—

(a) the number of years specified in direction 13(2) (period contribution rates payable); and

(b) the assumptions specified in directions 14 (pension increases), 15 (price measure revaluations), 16 (earnings measure revaluations), 17 (earnings growth), 18(a) (SCAPE discount rate), 18(d) (state pension age), 18(e) (surrendered pension).

DRAFT

Contents of the valuation report: cost cap

14. In direction 23(a) (contents of the valuation report: cost cap)—

(a) after "42" omit "and";

(b) at the appropriate place insert—

"(xiv) the cost cap difference calculated in accordance with direction 42A; and".

Notional assets

15. For direction 25(2) (notional assets) substitute—

"(2) The income received by the scheme for the purpose of the calculation at paragraph (1) must—

(a) include, but is not limited to, employer contributions, employee contributions and incoming transfer values;

(b) exclude payments received from the Consolidated Fund for the payment of—

(i) interim payment amounts, within the meaning of regulation 49 of the Judicial Pensions (Fee-Paid Judges) Regulations 2017 and any interest and compensation paid on those amounts; and

(ii) commuted portions required to be paid following revisions of the tables produced under rule B7(3) of the Firefighters' Pension Scheme Order 1992 or rule B7(7) of the Police Pensions Regulations 1987 that took effect on 1st December 2001 or 1st December 2004, any interest and compensation paid in respect of members as a result of those revisions.

16. For direction 25(3), substitute—

"(3) The benefits paid by the scheme for the purpose of the calculation at paragraph (1) must—

(a) include (but are not limited to)—

(i) benefits paid to pensioners and dependants;

(ii) outgoing transfer values;

(iii) interim payment amounts, within the meaning of regulation 49 of the Judicial Pensions (Fee-Paid Judges) Regulations 2017 and any interest paid on those amounts; and

(iv) commuted portions required to be paid following revisions of the tables produced under rule B7(3) of the Firefighters' Pension Scheme Order 1992 or rule B7(7) of the Police Pensions Regulations 1987 that took effect from 1st December 2001 or 1st December 2004 and interest paid in respect of members as a result of those revisions;

(b) exclude compensation paid to members as a result of Part 7 of the Judicial Pensions (Fee-Paid Judges) Regulations 2017 or those revisions.

17. In direction 25(4)—

(a) at the end of sub-paragraph (a), omit "and";

(b) for sub-paragraph (b) substitute—

"(b) for each calendar year ending on 31st March from the calendar year ending on 31st March 2011 to the calendar year ending 31st March 2016, using the rate of increases awarded by order made under section 59 of the Social Security Pensions Act 1975 to official pensions within the meaning of the Pensions (Increase) Act

DRAFT

1971 in the April immediately following the year in question, compounded with 3%;

(c) for each calendar year ending on 31st March from the calendar year starting on 1st April 2016 to the calendar year ending on 31st March 2019, using the rate of increases awarded by order made under section 59 of the Social Security Pensions Act 1975 to official pensions within the meaning of the Pensions (Increase) Act 1971 in the April immediately following the year in question, compounded with 2.8%; and

(d) for each calendar year ending on 31st March from the calendar year starting on 1st April 2019, using the rate of increases awarded by order made under section 59 of the Social Security Pensions Act 1975 to official pensions within the meaning of the Pensions (Increase) Act 1971 in the April immediately following the year in question, compounded with 2.4%.".

Prior value of the cost cap fund

18. In direction 30 (prior value of the cost cap fund), at the end of paragraph (1)(b)(ii) for "; and" substitute "except—

(aa) for direction 16 (earnings measure) a percentage figure of 4.2% applies from 1st April 2020;

(bb) for direction 17 (public earnings growth) a percentage figure of 4.2% applies during the calendar year starting on 1st April 2019 and each subsequent calendar year;

(cc) for direction 18(a) (SCAPE discount rate) the percentage figure is 2.4%; and".

Cost cap fund contribution rate

19. In direction 32(2) (cost cap fund contribution rate), after "Directions" insert "except with the assumptions that—

(a) for direction 16 (earnings measure) a percentage figure of 4.2% applies from 1st April 2020;

(b) for direction 17 (public earnings growth) a percentage figure of 4.2% applies during the calendar year starting on 1st April 2019 and each subsequent calendar year; and

(c) for direction 18(a) (SCAPE discount rate) the percentage figure is 2.4%".

20. In direction 32(4), after "scheme" insert "except with the assumption that for direction 18(a) the percentage figure is 2.4%".

Cost cap net leavers liabilities

21. In direction 35(2) (cost cap leavers liabilities)—

(a) at the end of sub-paragraph (c) omit "and";

(b) at the end of sub-paragraph (d) for "." substitute ";";

(c) at the appropriate place insert—

"(e) for the first valuation, calculate A and B in paragraph (1) using the methodology and assumptions that were used to calculate the employer contribution rate in accordance with direction 29 for the preliminary valuation, save that—

(i) for direction 16 (earnings measure) a percentage figure of 4.2% applies from 1st April 2020;

(ii) for direction 17 (public earnings growth) a percentage figure of 4.2% applies during the calendar year starting on 1st April 2019 and each subsequent calendar year; and

(iii) for direction 18(a) (SCAPE discount rate) the percentage figure is 2.4%; and

DRAFT

(f) for the second and subsequent valuations, calculate A and B in paragraph (1) using the methodology and assumptions that were used to calculate the employer contribution rate in accordance with direction 29 for the previous valuation save that for direction 18(a) the percentage figure is 2.4%.”.

Cost cap notional investment returns

22. In direction 36(2) (cost cap notional investment returns) in sub-paragraph (b) for “3%” substitute “2.4%”.

Cost cap liabilities

23. In direction 39 (cost cap liabilities), at the appropriate place insert—

“(3) For the purpose of calculating A and B, the percentage figure for direction 18(a) (SCAPE discount rate) is 2.4% from 1st April 2016.”

Cost cap future service cost

24. In direction 40(2) (cost cap future service cost) for the words “on 11th April 2016” substitute “from the first Monday in each tax year from 8th April 2019”.

25. In direction 40(3) for the words from “is” to the end of the paragraph substitute “is 4.2% from 1st April 2019.”

Cost cap past service cost

26. In direction 41 (cost cap past service cost) at the end insert—

“For the purpose of calculating this cost, the percentage figure for direction 18(a) (SCAPE discount rate) is 2.4% from 1st April 2016.”.

Cost cap and cost cap difference

27. For direction 42 (cost cap cost of the scheme) substitute—

“Cost cap cost of the scheme

42. The cost cap cost of the scheme must be calculated as—

$$((A+B)-C)-D$$

where—

A is the cost cap future service cost, calculated in accordance with direction 40;

B is the cost cap past service cost calculated in accordance with direction 41;

C is the cost cap contribution yield calculated in accordance with direction 31;

D is the cost cap difference calculated in accordance with direction 42A.

Cost cap difference

42A. The cost cap difference must be calculated as—

$$A-B$$

where—

A is the proposed employer cost cap set at the time of the preliminary valuation (“the preliminary cost cap”) in accordance with direction 53 but re-calculated as though at that time—

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(i) for direction 16 (earnings measure) a percentage figure 4.2% applied from 1st April 2020;

(ii) for direction 17 (public earnings growth) a percentage figure of 4.2% applied during the calendar year starting on 1st April 2019 and each subsequent calendar year;

(iii) for direction 53(4)(a) to (d) (proposed employer cost cap: earnings measure) a percentage figure of 4.2% applied in each instance;

(iv) for direction 18(a) (SCAPE discount rate) the percentage figure was 2.4%; and

B is the preliminary cost cap.”.

Cost cap analysis

28. In direction 43(b)(iv)(hh) (cost cap analysis) for “2019” substitute “2023”.

Application of Part 2 to new public body pension schemes

29. After direction 47(3) (application of Part 2 to new public body pension schemes) insert—

“(4) In relation to a valuation of the National Assembly for Wales Members’ Pension Scheme, Part 2 of these Directions applies with the following modifications—

(a) the modifications provided in paragraphs (1) to (3) of this direction;

(b) direction 23(i), (iii)-(x) and (xii) do not apply;

(c) directions 30, 32 to 39 and 41 do not apply;

(d) for direction 40 the average age of the membership is adjusted to reflect the average age of the membership during the term of the National Assembly for Wales that was in session at the effective date of the valuation; and

(e) in direction 42, the cost cap cost of the scheme must be calculated as—

$$(A - C) - D.$$”.

Certification

30. After direction 49 insert—

“**Certification**

49A. Where—

(a) a notification has been issued under direction 49(2); and

(b) the responsible authority has provided the scheme actuary with the decision made under section 12(6) of the Public Service Pensions Act 2013 as to the steps to be taken to achieve the target cost for the scheme;

the scheme actuary must issue a certificate within three months of receiving the decision.

49B. The certificate must state—

(a) the steps to be taken to achieve the target cost for the scheme;

(b) the cost cap cost of the scheme that would result from implementation of the steps to be taken to achieve the target cost for the scheme; and

(c) the employer contribution rate that would result from implementation of the steps to be taken to achieve the target cost for the scheme.

49C. The cost cap cost of the scheme calculated for the purpose of direction 49B(b) must be calculated in accordance with direction 42, except that the calculation should assume that the steps to be taken to achieve the target cost for the scheme are in force.

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49D. The employer contribution rate calculated for the purpose of direction 49B(c) must be calculated in accordance with direction 29, except that the calculation should assume that the steps to be taken to achieve the target cost for the scheme are in force.”.

Preliminary valuation

31. In direction 50(d) (preliminary valuation), for the words “the data” to the end, substitute—

“the following data, methodology and assumptions, so far as they are applicable to directions 24 to 29 and 44 to 46—

(i) direction 14, save that the percentage figures are 2.7% for 7th April 2014, 2.2% for 6th April 2015, 2.1% for 11th April 2016 and 2% for the first Monday in each subsequent tax year;

(ii) direction 15 subject to the modification provided by this sub-paragraph;

(iii) direction 16, save that the percentage figures are 3.4% for 11th April 2016, 3.6% for 10th April 2017, 3.7% for 9th April 2018, 3.7% for 8th April 2019 and 4.75% for the first Monday in each subsequent tax year;

(iv) direction 17, save that the percentage figures in the sub-paragraphs are 1.8% for 31st March 2013, 0.5% for 31st March 2014, 1.5% for 31st March 2015, 2% for 31st March 2016, 2.5% for 31st March 2017, 3% for 31st March 2018, 3% for 31st March 2019 and 4.75% for each calendar year from 1st April 2019;

(v) direction 18, save that—

(a) the percentage figures in sub-paragraph (a) are 3%;

(b) the principle population projections for the UK in sub-paragraph (b) are those of 2012; and

(c) the percentage figure in sub-paragraph (e) is 15%;

(vi) the data, methodology and assumptions applied by direction 19 must be those that were applied in all previous preliminary valuation reports;”.

32. In direction 50(f)(ii), after paragraph (bb) insert—

“(bc) in relation to an existing scheme providing benefits to employees of the Secret Intelligence Service or the Security Service, 31st March 2015;”.

33. In direction 50(f)(iii), after paragraph (bb) insert—

“(bc) in relation to an existing scheme providing benefits to employees of the Secret Intelligence Service or the Security Service, 1st April 2017;”.

34. In direction 50(f)(iv), after “direction 8” insert “or, in the case of a scheme providing benefits to employees of the Secret Intelligence Service or the Security Service, calculated as the period of six years from the implementation date”.

Application of Part 3

35. After direction 54 (application of Part 3 to schemes for members of the security agencies) insert—

“Application of Part 3 to schemes for the National Assembly for Wales

55. In relation to the National Assembly for Wales Members’ Pension Scheme, Part 3 applies with the following modification—

(a) in direction 53(1), A is the contribution rate required to cover the expected cost of benefits accrued by members of the relevant old scheme during the implementation period and where the average age of the membership is adjusted to reflect the

average age of the membership during the term of the National Assembly for Wales that was in session at the effective date of the valuation.”.

Schedules

36. In schedule 1 (connected schemes) to the Directions, after the entry for Civil servants, insert—

Other civil servants	The pension schemes made under section 1 of the Superannuation Act 1972 for employees of the Secret Intelligence Service or Security Service which came into operation on 1st June 1972, 1st December 1998 or 1st October 2002. The pension scheme established for certain employees of the Secret Intelligence Service which came into operation on 1st January 1946, as amended on 1st September 1957 and 1st July 1964.

37. In schedule 2 (notional assets for first valuation) to the Directions—

(i) In the entry for “Civil servants”, in the column headed “Notional Asset Value” for “£97,700,000,000” substitute “£95,400,000,000”;

(ii) after the entry for Civil servants, insert—

Other civil servants	£1,877,000,000	31st March 2015

38. In schedule 3 (preliminary valuation) to the Directions, after the entry for Civil servants, insert—

Other civil servants	The pension schemes made under section 1 of the Superannuation Act 1972 for employees of the Secret Intelligence Service or Security Service which came into operation on 1st June 1972, 1st December 1998 or 1st October 2002. The pension scheme established for certain employees of the Secret Intelligence Service which came into operation on 1st January 1946, as amended on 1st September 1957 and 1st July 1964.	The Civil Service (Other Crown Servants) Pension Scheme Regulations 2016	1st April 2016

Signed

[Name]
Director General, Public Spending and Finance
for Her Majesty’s Treasury

[Date]

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Appendix C – SCAPE letters

The following pages contain copies of the exchange of letters between Conrad Smewing (HM Treasury) and Martin Clarke (Government Actuary), dated 23 and 25 October 2018 respectively, regarding the review of the SCAPE discount rate.

HM TREASURY

Conrad Smewing
Director, Public Spending

www.hm-treasury.gov.uk

1 Horse Guards Road
London
SW1A 2HQ

23 October 2018

Martin Clarke
Government Actuary
Via email

Dear Martin

Review of the SCAPE discount rate

1. At the Budget in March 2011 the Government announced the outcome of a public consultation on the SCAPE discount rate. The SCAPE discount rate was determined at that Budget based on forecast long-term GDP growth and set at 3% above CPI, in line with the Office for Budget Responsibility's (OBR) forecast at that time.

2. The discount rate was subsequently reduced to 2.8% above CPI at the Budget in March 2016, in line with changes to OBR's forecasts in their 2015 Fiscal Sustainability Report.

3. The Government's objectives for the SCAPE discount rate remain unchanged. The two primary objectives for the discount rate continue to be that it should:

   - represent a fair reflection of costs – that the future costs of current accruals are fairly reflected in current contributions; and
   - reflect future risks to government income – providing confidence that pension promises made today are sustainable and ensure fairness to future taxpayers.

4. When summarising the consultation responses in 2011 the Government also recognised the importance of stability in the discount rate. Balancing this with the importance of continued review, the Government committed to review the level of the SCAPE discount rate every 5 years, and the methodology every 10 years. The summary of consultation responses also noted the possibility of "out-of-cycle" reviews in the event of significant changes in circumstances.

5. The Government monitors the OBR economic determinants used in its Fiscal Sustainability Reports, and the SCAPE discount rate implied by these determinants. The OBR's current long term economic determinants are set out in the 17 July 2018

Fiscal Sustainability Report. Based on these determinants the SCAPE discount rate would reduce from CPI+2.8% to CPI+2.4%.

6. This rate of CPI+2.4% has been determined, in line with the methodology applied when the rate was set in 2011 and revised in 2016, as:

    a. long-term real GDP growth of 2.2 percent pa; plus

    b. the long-term GDP deflator (2.2 percent pa); less

    c. the long-term forecast for CPI (2.0 percent pa).

7. The Government has decided that this change in the OBR's long term economic determinants reflects a significant change in circumstances, and considers that the SCAPE discount rate should be reviewed and updated in an "out-of-cycle" review.

8. This decision is based on the clear risk that, if we do not update SCAPE to reflect the OBR's current forecasts, the valuations of the public service pension schemes would not reflect any consequent pressure on employer contributions until 2023/24. Over that time period, all other things being equal, a significant deficit of at least £30 billion would emerge in these schemes. This would create significant pressure in subsequent valuation periods and would mean that employers were not recognising the full costs of employing staff. Failure to recognise the OBR's current forecasts risks frustrating the Government's two primary objectives for the SCAPE discount rate. We consider this risk to outweigh other considerations.

9. At Budget 2011 the methodology determined a rate of CPI+2.9%. The Government chose to implement a rounded rate of 3% at that time, acknowledging that there is inherent uncertainty in long term forecasts. At the 2016 review, the Government chose to implement an unrounded rate of 2.8%. The Government does not propose to apply any rounding in this review and proposes to reduce the SCAPE discount rate to 2.4%, based on OBR's central long-term determinants.

10. I would be grateful if you could offer your professional opinion on this proposed revision to the SCAPE discount rate. I look forward to receiving your views.

Yours sincerely

Conrad Smewing

Government Actuary's Department

From the Government Actuary
Martin Clarke

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Conrad Smewing
Director, Public Spending

by email only

25 October 2018

Dear Conrad

Review of the SCAPE discount rate (SCAPE rate)

Thank you for your letter of 23 October asking for my professional opinion on the Government's proposed change to the SCAPE discount rate used to set contribution rates for the unfunded public service pension schemes through valuations following the SCAPE methodology[1].

The SCAPE rate is an important part of the landscape for public service pension schemes being a significant factor affecting the rate of employer contributions determined as part of scheme valuations. I have therefore considered your letter and the exchanges of letters on this subject which took place between our departments in March 2011 and March 2016 when the rate was last reviewed.

Professional opinion

My opinion is that changing the SCAPE rate to CPI+2.4% pa at this time is:

- in line with the processes for review the Government set out in 2011;
- consistent with the Government's objectives for the SCAPE rate; and
- produces a reasonable discount rate to use to determine employer contribution rates for unfunded public service pension schemes.

I deal with each of these points in turn below.

Process for review

The current policy, established in 2011, on SCAPE reviews aims to balance the need for stability with the attraction of reviewing the rate periodically. It indicates that reviews of the level of discount rate should take place every five years but that an "out-of-cycle" review may take place in the event of a significant change in circumstances. Although the current

[1] SCAPE stands for Superannuation Contributions Adjusted for Past Experience and is the methodology used to determine employer contribution rates for unfunded public service pension schemes – see the documents at https://www.gov.uk/government/consultations/the-discount-rate-used-to-set-unfunded-public-service-pension-contributions

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policy did not define what a significant change in circumstances might be, I consider it not unreasonable to review the rate in the light of the reduced expectation of long-term economic growth since the "in-cycle" rate review in March 2016. Since that date, the SCAPE rate implied by the OBR forecast of long-term annual GDP growth has reduced by 40 basis points for reasons set out in section 1 of the Appendix to this letter.

A reduction in the SCAPE rate from 2.8% to 2.4% in excess of CPI could, other things being equal, lead to employer contributions payable to the unfunded public service schemes from April 2019 of around £10bn per annum higher than current levels. If the rate were not revised at this valuation and growth expectations remained unchanged at the next valuation, then the SCAPE rate would need to be revised to 2.4% in excess of CPI for the March 2020 valuations. This lower discount rate at the2020 valuations would, as your letter notes, increase any deficit; the impact of this might be around £40bn. The impact on employer contribution rates applying from 2023 would then be larger than would be seen from 2019 to 2023 as contributions in the meantime will not have been sufficient to cover costs calculated at the lower SCAPE rate.

In my more detailed discussion of the timing of SCAPE reviews in section 2 of the Appendix to this letter, I make two recommendations for you to consider in respect of the timing of future reviews. The first recommendation is to consider the alignment of the regular "in-cycle" reviews to the periodic valuation and employer contribution rate-setting process for the unfunded public service pension schemes so that these may always be undertaken on the basis of the most up-to-date information. The second recommendation is to consider setting tolerances either for when an "out-of-cycle" review is carried out or indeed for when a change is made at any review.

Notwithstanding the direct effect on employer contributions of a reduction in the SCAPE rate, the net fiscal impact of the change will depend on how the Government overall chooses to adjust for these increased departmental costs. I discuss this in more detail in section 3 of the Appendix to this letter.

Government objectives

The Government's objectives for the purpose of setting the SCAPE rate were established in 2011. The primary objectives were identified as to fairly reflect costs and to reflect future risks to Government income, and you have confirmed that these remain the Government's primary objectives. Stability was another objective, though this was not identified as a primary objective. A change in the discount rate to CPI+2.4% pa would be directly analogous to the basis on which the current rate was established in March 2016 adjusted for the downward move in the OBR long-term GDP growth rate forecast. It is therefore consistent with the Government's objectives that the SCAPE rate adequately reflects current views of future GDP growth.

I have based my professional opinion on the proposed SCAPE rate on the assumption that the conclusion of the 2011 SCAPE rate consultation holds, i.e. that the SCAPE rate should be set with reference to expected long-term GDP growth. I would note, however, that there are other bases for setting the rate that would meet the Government's objectives for the SCAPE rate equally well but which may produce a rate that differs from the rate that is proposed. In section 4 of the Appendix to this letter, I comment on a number of features of the discount rate where an equally valid but different view might be taken. These features, which I have taken into account in forming my overall professional opinion but which I would recommend are considered when you next review the methodology used to determine the SCAPE rate, are broadly:

- The extent to which the proposed rate represents a prudent approach given the Government objective to reflect future risks;
- The extent to which the alignment of the discount rate to the forecast long-term rate of GDP growth (without any shorter-term adjustment) is a fair reflection of costs and achieves stability;
- The extent to which the current process, including the present "out of cycle" review, meets the stability objective;
- The general level of uncertainty inherent in long-term economic forecasting upon which the discount rate is based; and
- The rounding convention that is applied to the OBR forecast of GDP growth to produce the discount rate where different conventions might lead to different rates.

Reasonableness of the rate

Although the SCAPE methodology and discount rate are specific to the Government's unfunded public service pension schemes, it can be helpful to also consider the proposed rate in the wider context of other approaches to pension provision both within the public sector and outside it. Since the global financial crisis, long-term bond yields have fallen to, and to date remained at, historically low levels. Discount rates used to value funded schemes in the private and public sector have been reducing as a result of this trend and also because many private sector pension schemes are progressively de-risking their investment strategies (and therefore lowering their future return expectations) as part of what is known as a glide path to self-sufficiency. The reduction in discount rates has increased the pensions cost for employers much like the effect of the reduction in the SCAPE rate being proposed for unfunded public service schemes. In section 5 of the Appendix to this letter I provide some brief analysis and commentary on these rates in comparison to the proposed SCAPE rate.

There are considerable limitations in this comparison in so far as the circumstances of each scheme and the objectives in setting a discount rate are different, in particular the requirement for some schemes to make prudent assumptions and to consider the financial strength of the scheme sponsor in setting the discount rate. However, given these limitations I do not consider the proposed SCAPE discount rate to be unreasonable.

Other uses of the SCAPE rate

The SCAPE rate is used for a number of purposes beyond determining employer contribution rates. For example, the choice of SCAPE rate:

1) has implications for the outcomes of tests of the public service pension schemes' cost cap mechanism;

2) impacts on cash equivalent transfer values and other actuarial factors; and

3) is likely to impact on current contracts, and future bids by contractors, for the provision of public services by independent providers.

I recommend that you also consider the wider implications of changing the SCAPE rate. I say a little more about these other uses in section 6 of the Appendix to this letter. If you

would like me to consider any of these aspects in any further detail please let me know and I would be happy to do so.

Compliance with technical standards

This work has been carried out in accordance with the applicable Technical Actuarial Standards: TAS 100 and TAS 300 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.

Third party disclaimer

This letter is addressed to HMT. The purpose of this letter is to give my professional opinion on the proposal to set the SCAPE rate at CPI+2.4% pa in line with expected GDP growth.

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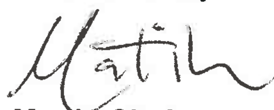
Yours sincerely



Martin Clarke
Government Actuary

Appendix – Additional comments

1. Reasons for OBR's changes to long-term economic growth expectations

The proposed SCAPE rate is based on the OBR's assumed rate of expected long-term GDP growth, following the same methodology as the 2016 review of the SCAPE rate. The OBR has published explanations for the changes in their assumptions that determine future expected GDP growth and hence underlie the proposed discount rate[2]. In summary, the changes since the last SCAPE rate review are:

a) A reduction of 0.2% pa in expected labour productivity growth (January 2017 Fiscal Sustainability Report - FSR) due to greater than usual uncertainty about long-term productivity post-Brexit.

b) A reduction of 0.02% pa in employment growth reflecting:

- slower growth in the adult population in the 2016-based ONS population projections;
- An increase in the employment rate reflecting the continued fall in actual unemployment without signs of upward pressure on wages;
- the Government's 2017 announcement to bring forward SPA increases and target 32% as the average proportion of adult life that an individual should expect to receive state pension; and
- basing rates of entry to and exit from employment on more recent experience

c) A reduction of 0.1% pa in the GDP deflator (January 2018 FSR) due to updated weights used in the construction of this figure.

The remaining 0.08% reduction arises due to the rounding applied by OBR after they calculate real GDP growth by compounding labour productivity and employment growth figures.

Whilst any or all of the above factors could be reversed in any future OBR forecast, I do not consider this to be a basis for adjusting the OBR forecast for the purposes of the SCAPE discount rate.

The table below shows the SCAPE rates implied by relevant OBR publications since the November 2010 Economic and Fiscal Outlook.

[2] Paragraphs 3.30-3.41 of https://obr.uk/docs/dlm_uploads/OBR-Fiscal-sustainability-report.pdf
Paragraphs 3.13-3.27 of https://cdn.obr.uk/FSR-July-2018-1.pdf

OBR publication	November 2010 EFO	2011 FSR	2012 FSR	2013 FSR	2014 FSR	2015 FSR	2017 FSR	2018 FSR
Real GDP growth (% pa)	2.2	2.2	2.4	2.4	2.4	2.5	2.4	2.2
GDP deflator (% pa)	2.7	2.7	2.5	2.2	2.2	2.3	2.3	2.2
CPI (% pa)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Implied SCAPE rate (% pa)	2.9[1]	2.9[1]	2.9	2.6	2.6	2.8	2.7	2.4

Notes

1. The 2.9% rate implied by the November 2010 EFO was rounded to 3.0% when HMT set the SCAPE rate.
2. Some OBR publications report GDP growth that varies from decade to decade rather than a single long-term figure. In that case, the rate quoted is the average of the rates for the last four decades of the projection period.
3. OBR started to publish its Financial Sustainability Report in 2011 which is now the publication which sets out its assumptions for the economy in the long-term. An FSR was not published in 2016

2. Timing of SCAPE rate reviews

As noted in the main body of this letter, I recommend that you consider:

1) aligning the regular "in-cycle" reviews of the SCAPE rate to the timetable for the actuarial valuations of the unfunded public service pension schemes, so that these valuations are undertaken on the basis of the most up-to-date information; and

2) setting tolerances for the extent of the movement in the OBR assumption for future GDP growth that would warrant a change in the SCAPE rate, either at a scheduled review or an "out-of-cycle" review.

"In-cycle" reviews

The most significant use of the SCAPE rate is its role in establishing employer contribution rates for the unfunded public service pension schemes. However, the five year SCAPE rate review cycle (set in the 2011 discount rate review) does not coincide with the four-yearly cycle for actuarial valuations of public service pension schemes (set in HMT's 2014 valuation directions). This means that without an "out-of-cycle" review the SCAPE rate used in the actuarial valuations may be materially different to the latest OBR views on future GDP growth.

One alternative review approach would be to link the timetable for updating the SCAPE rate to the actuarial valuation timetable. This might help achieve the desired balance between stability and review, avoid more frequent "out-of-cycle" reviews and would ensure valuation results are calculated on a SCAPE rate consistent with up-to-date assumptions about future GDP growth.

"Out-of-cycle" reviews

Frequent "out-of-cycle" reviews may lead to relatively frequent changes in the SCAPE rate, which could affect the balance between stability and review sought by the outcome of the 2011 review of the SCAPE rate. It is entirely possible that large changes in the OBR assumption for future GDP growth will occur again mid-way through a review cycle. Without a clearly-defined process for implementing an "out-of-cycle" review, there is a risk that the SCAPE rate is reviewed each time OBR changes its long-term forecast, losing the need for stability in the SCAPE rate.

If the review cycle for the SCAPE rate were aligned to the unfunded public service pension scheme valuation cycle, there would be less need to complete an "out-of-cycle" SCAPE rate review because the impact of any such review would be relatively limited. I set out later some other current uses of the SCAPE rate, but these are potentially much less fiscally material than the impact on employer pension contributions.

Given the Government's preference for stability in the SCAPE rate and based on whether the SCAPE review cycle will be aligned to the valuation cycle, I would recommend you consider the level of tolerance for changes in OBR expectations for future GDP growth before a change in the SCAPE rate is warranted.

3. Fiscal Impacts

A reduction in SCAPE rate increases the present value of future pension payments and thus leads to higher employer contributions than previously assumed. If payrolls and departmental budgets remain constant, this in turn leads to a higher proportion of departmental spending being passed to pension schemes' AME budgets which reduces net AME spending. When the SCAPE discount rate was reviewed in 2016, it resulted in a reduction in forecast spending for Budget 2016 of about £2 billion in both 2019-20 and 2020-21. (Subsequent years were out of the scope of the forecast period at that budget.)

A change in the discount rate does not affect the timing or amount of future pension cashflows and would not necessarily imply a change in overall government spending. The Government could, for example, opt to use the reduced AME spending to fund an increase in departmental budgets so that departments are then immunised from the change in contribution rate and net government spending is unchanged. However, irrespective of whether HMT adjusts departmental budgets in this way, a lower SCAPE discount rate will, all other things being equal, increase employment costs relative to other forms of expenditure and this may impact on decisions of where to allocate new spending or apply reductions in spending. In this regard, a more up-to-date SCAPE discount rate may be considered to provide a more realistic basis for such decisions.

Other changes in assumptions at the 2016 valuations, notably a slowing down in mortality improvements and lower short-term salary increases, are likely to lower employer contributions, although some of these effects may be negated in the event that the cost cap mechanism results in benefit improvements.

Overall, provisional valuation results are indicating that a SCAPE rate of 2.4%+CPI may increase employer contributions to the unfunded public service schemes by around £10bn from current levels as a result of the valuations as at 31 March 2016. The implementation period over which revised employer contribution rates are expected to be paid runs from 2019-20 to 2022-23.

4. <u>Possible alternative approached to SCAPE rates</u>

Although I do not consider the proposed SCAPE discount rate to be unreasonable, there are a number of alternative approaches that would be equally suitable and may result in a different discount rate. Some of these are discussed below:

4.1 *Prudence - There are arguments that a reduction in the discount rate to allow for prudence is not inconsistent with intergenerational fairness.*

I understand that when the SCAPE rate was set in 2011, the question of whether a margin for prudence to reduce the discount rate was considered and the conclusion reached was that no margin should be included. The argument was that a margin for prudence would mean contributions are more likely than not to be greater, as a percentage of GDP, than the projected future benefits to which they relate, when measured as a percentage of projected future GDP. In other words; a margin for prudence introduces "bias" because it leads to outcomes which are more likely to favour future generations over current generations. Future generations will have to pay for the benefit commitments being made to current generations, and if a margin for prudence is included when assessing costs, those future generations are more likely than not to pay less than expected towards meeting the benefit commitments.

The counter argument is that future generations are exposed to the risk of experience being more costly than assumed. If this is the case they have to pay more to provide benefit commitments to former generations than expected. Including a margin for prudence therefore reduces the amount of risk future generations are exposed to. In particular, including a prudence margin increases the employer costs to provide pension benefits and therefore may reduce the level of benefits promised (either through changes to scheme benefit provision or reduced staffing levels).

These arguments to include a prudent margin do not necessarily undermine the principle that the SCAPE rate should be a "fair reflection of costs" and, depending on the size of the prudent margin and the types of risks under consideration, could be consistent with the principle that the SCAPE rate should "reflect future risks to government income".

4.2 *Short term adjustments (short term forecasts and recent experience) - There are arguments that recent experience of lower GDP growth and short- to medium-term forecasts of GDP should be allowed for which could lead to a SCAPE rate lower than that proposed*

Following the SCAPE rate being revised in 2016 real GDP growth has averaged CPI+2.1% pa[3]. As in 2016, this is lower than the SCAPE rate that applied over the period.

OBR's 2018 FSR breaks down future labour productivity forecasts by projection period including a transition from current growth rates to the OBR's long-term expected annual growth rate. In particular labour productivity is forecast to rise to 1.2% in 2022-23 and then increase by 0.1% a year to reach 2.0% in 2030-31. Real GDP growth is then calculated as the product of labour productivity and employment growth.

When the SCAPE rate was set in 2011 and revised in 2016 the forecast of GDP growth over the long term was used to determine the SCAPE rate. Since the 2016 SCAPE rate review, OBR has pushed out the time when a steady state is reached from 2020-21 to 2030-2031. The approach proposed to set the SCAPE rate ignores these short/ medium term forecasts, but it could be argued that these should be allowed for, particularly given this extended time horizon

[3] Annual increase from 2015 to 2017 in GDP above CPI using Q3 ONS indices D7BT (CPI) and YBHA (seasonally adjusted GDP from EDP4)

and that a material proportion of future benefit payments from the public service schemes will fall in this period.

A term-dependent discount rate that allowed for the transitioning labour productivity rates, would lead to a discount rate 0.6% pa lower than that proposed in 2023-2024, reducing to a nil difference in 2030-31. The impact of this would be similar to a reduction in the [non term-dependent] long-term discount rate of about 0.1% pa. If GDP growth did actually follow the OBR's assumed path, then this would cause a gradual downwards pressure on pension costs with the current generation having paid, all other things being equal, more for pension accrual than their successors.

There are, therefore, questions of intergenerational fairness in the decision as to whether to allow for short-term GDP forecasts and experience. It could be argued that current generations should not be penalised for having the misfortune to be living through a period in which GDP growth is below the long-term expectation or alternatively that current generations should live within their means as they are the consumers and producers that are generating the GDP on which these pension contributions are based. Equally it might be considered that the relationship between short- and medium-term growth forecasts and longer-term forecasts will change over time such that the former may at some future stage exceed the latter, reversing the current expected pattern of growth. Thus the current approach based solely on the long-term forecast of economic growth may be considered to be a more stable one that evens out fluctuations over time.

Setting the starting point for the "long-term" might be considered to be part of the methodology underlying the discount rate and in my opinion, therefore, it is reasonable to defer consideration on this point until you review that methodology, rather than at this review.

4.3 Stability - There are arguments that stability of the SCAPE rate should be given more prominence - this could lead to an unchanged SCAPE rate (i.e. higher than CPI+2.4% pa)

I note that stability was considered to be a relevant feature when the SCAPE rate was set in 2011. There are a number of different ways in which stability can be achieved, for example:

- more significant degrees of rounding give a more stable SCAPE rate
- longer periods between reviews would give a more stable SCAPE rate

These approaches to achieving stability need to be balanced against the potential impacts which even just a 0.1% pa change in the SCAPE rate can have on employer contribution rates.

As discussed in section 2 of the Appendix, without long review periods, small but frequent changes in fiscal forecasts could lead to a highly variable SCAPE rate with each change having significant impacts on employer contribution rates. On the other hand, a delay in effecting a discount rate change could, as noted in section 3 of the Appendix, lead to a more severe change in employer contribution rates when the change is made. The OBR now plans to publish an FSR every two years, with the next due to be published in 2020. Therefore the scope for changes to long-term forecasts underlying the SCAPE discount rate between SCAPE reviews reduces. However this feature will still exist.

There is also extra volatility in the current OBR estimates of future GDP growth, which includes a reduced long-term forecast of labour productivity in response to "greater-than-usual uncertainty around any judgments made about the path of potential output when we do not yet know post-exit [from the EU] policy settings or the impact of those arrangements on productivity

in the long term". While this uncertainty continues, there is a higher risk of volatility in the OBR estimate of future GDP growth. This may increase the likelihood of future SCAPE rate changes and therefore the balance between stability of the SCAPE rate and review to reflect the latest view of future GDP growth becomes even more important. I consider that, even in light of the risk of increased volatility in the OBR estimate, the fiscal impact is sufficient that the SCAPE rate should be reviewed out of cycle.

Given the significant impact on outcomes caused by relatively small changes in forecasts (and the approach to rounding), in effect it is difficult to achieve stability unless long review periods are adopted. HMT could instead specify criteria that require a relatively large change in the OBR expectations for future GDP growth before an "out-of-cycle" review can occur. This would help achieve stability in the SCAPE rate and also projected employer contribution rates.

4.4 Uncertainty (especially around long-term forecasting) - There are arguments that different forecasts of GDP are equally valid and which could lead to a SCAPE rate either higher or lower than the rate proposed.

In determining employer contribution rates, the valuations involve the projection of expected future benefit payments many decades into the future. A relatively extreme but relevant example would be projections of benefit payments for a 20 year old currently starting a career in public service. Using current assumptions for life expectancy, a 20 year old would have a material expectation of receiving public service pension scheme benefit payments more than 70 years into the future.

Over these kinds of time horizons the degree of uncertainty about any types of forecast are considerable. It is therefore important to recognise that different projections could be equally valid (even ones that are significantly different in terms of the impact of the change on the SCAPE rate).

Other sources of GDP forecasts are available that differ to the OBR's forecasts and could lead to a different SCAPE rate. However, many of these only look at short time horizons, or are relatively infrequent, and so are not practical options for setting the SCAPE rate.

4.5 Rounding (and impacts) - Different degrees of rounding could be applied to OBR forecasts of GDP which could lead to SCAPE rates higher than CPI+2.4% pa

I understand that when the SCAPE rate was set in 2011 the figures from the OBR's forecasts at that time suggested a SCAPE rate of CPI+2.9% pa and that, given the range of uncertainties inherent in these calculations, a rounded rate of CPI+3% pa was adopted. Whereas, when the SCAPE rate was updated in 2016, the rate of CPI+2.8% was used directly from the OBR's forecasts and was not rounded further. It should be noted that a 0.1% adjustment to the discount rate has a material impact on employer contribution rates and that there is a strong alternative case, therefore, for making no rounding adjustment. Moreover any degree of rounding adopted would potentially lead to larger jumps in the discount rate (and therefor employer contribution rates) when the discount rate does change.

The OBR's 2018 FSR suggests a SCAPE rate of CPI+2.4% pa before any rounding is applied whereas rounding to CPI+2.5% pa would effectively move back to the rounding approach taken in the 2011 review. In my opinion, continuing to not round, or rounding to CPI+2.5%, are equally valid approaches.

5. Comparison with discount rates used in other actuarial pension calculations

The SCAPE rate is set by reference to long-term GDP expectations. Other schemes set their discount rates using different methodologies and principles and accordingly use different discount rates.

Private sector funded defined benefit pension schemes are required to include prudence in the assumptions they adopt for their funding valuations. The level of prudence will depend upon the investment strategy of the scheme and the covenant strength of the scheme sponsor, amongst other things. Therefore, private sector scheme discount rates are not directly comparable with the unfunded public service pension schemes, but they do however provide information on the discount rates being used to value pension benefits elsewhere.

The Pensions Regulator's scheme funding statistics report[4] sets out statistics for private sector funded schemes. The 2018 report contains statistics for valuations with effective dates between September 2015 and September 2016 that reported between December 2016 and December 2017. The average nominal discount rate was 3.3% pa. (For comparison, the nominal SCAPE discount rate will be 4.4% pa.) There was considerable variation depending on the investment strategy adopted by the scheme. Schemes with less than 20% of assets invested in return-seeking investments had an average nominal discount rate of 2.7% pa while whose with more than 80% of assets invested in return-seeking investments had an average nominal discount rate of 3.7% pa.

Private sector discount rates are typically set by reference to the yield on long-dated gilts and the tPR statistics show that historically they have on average been set to be between 0.8% pa and 1% pa higher than the 20 year nominal gilts market spot rate as calculated by the Bank of England. Based on gilt market conditions at the start of October 2018, this would lead to a nominal discount rate of between 2.8% pa and 3.0% pa.

Funded public service pension schemes set their discount rates, for determining employer contributions, in a different way to both private sector funded schemes and unfunded public service schemes. These schemes tend to have less concern about the covenant strength of the scheme sponsor, but do still consider the investment strategy being used when deciding on an appropriate discount rate. For instance, the average discount rate adopted for the 31 March 2016 valuations of the Local Government Pensions Scheme (E&W) funds and used for setting employer contribution rates was 4.4% pa with an inflation assumption of 2.2% pa.[5] This leads to a discount rate net of CPI of 2.2% pa which is much closer to the proposed SCAPE discount rate. The Parliamentary Contributory Pension Fund used a discount rate of 2.5% net of CPI in its valuation as at 1 April 2017[6], slightly higher than the proposed SCAPE rate.

Alternative approaches to setting discount rates, based on equally reasonable but different methodologies and principles can thus lead to different but no less appropriate for the circumstances, discount rate outcomes.

6. Other uses of the SCAPE rate

The consultation on the SCAPE rate which concluded in 2011 focused on the SCAPE rate in the context of setting employer contributions to unfunded public service schemes and this is the basis on which the current consultation on the change to the SCAPE rate is being made. However the SCAPE rate is also used for other purposes and I therefore recommend that the

[4] http://www.thepensionsregulator.gov.uk/doc-library/research-analysis.aspx
[5] http://www.lgpsboard.org/index.php/2016-valuations-report
[6] https://www.mypcpfpension.co.uk/docs/librariesprovider12/accounts/2017-valuation-report.pdf

Government should consider the other implications of a change to the SCAPE rate. For example:

6.1 *Cost cap mechanism*

In addition to informing the employer contribution rates the last round of public service pension scheme valuations also determined employer cost caps for each of the schemes. The employer cost caps are benchmarks against which changes in the costs of the schemes are assessed at subsequent valuations. The 2016 valuations are currently determining whether a scheme has breached its employer cost cap - which triggers changes to the benefits and/or member contributions in the schemes.

I understand that the intention is that outcomes of cost cap assessments at future valuations will be immune from changes to the SCAPE rate (paragraph 2.33 of "Public service pensions: actuarial valuations and the employer cost cap mechanism")[7]. The current mechanism used to do this can still leave some small residual effects on the cost cap results of a change to the SCAPE discount rate. It may be necessary to consider amendments to the Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 to ensure this immunity is delivered in practice.

Given the intention to immunise members from the impact of a change in the SCAPE rate, provisional results are showing that many schemes will pass through the lower threshold at the 2016 valuations triggering either a reduction in employee contributions or an increase to benefits and a corresponding further increase in employer contributions.

These contrasting impacts on employers/taxpayer and members illustrates the effect of excluding discount rate changes from the cost cap and the additional risks that the taxpayer is facing compared to employees.

6.2 *Actuarial factors*

The SCAPE rate is currently used to determine many of the actuarial factors used in public service pension schemes. These factors generally underpin the terms of options which scheme members have about the shape of their benefit package (and are also used in divorce proceedings to determine the value of pension rights).

A reduction to the SCAPE rate will have various impacts on scheme factors. To give some examples, in general terms, all of the following may increase if the SCAPE rate is reduced:

- lump sums calculated using actuarially neutral commutation factors;
- transfer values (which are also used to value pension rights in divorce cases); and
- the cost to members of purchasing additional pension.

The following may decrease:

- the reduction in pension required to cover the cost when a member opts for their scheme to meet an annual allowance charge or a specified cash amount of pension debit on divorce

[7] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289366/public_service_pensions_actuarial_valuations_130314.pdf

6.3 *Independent providers and outsourcing contracts*

As well as public service employers, independent providers with access to public service pension schemes also pay employer contribution rates based on the SCAPE rate.

A change to the SCAPE rate and resulting changes to employer contribution rates may also therefore impact on current contracts for independent providers to provide public services. Similarly, expected or actual changes to employer contribution rates could also be factored into future bids by independent providers (or bids currently under discussion as part of ongoing current tender processes).