Universities UK

Response to the Universities Superannuation Scheme Consultation on Technical Provisions and Recovery Plan

2 December 2014

1. Introduction

1.1 This note sets out Universities UK's response to the USS consultation document on the *2014 Actuarial Valuation: A consultation on the proposed assumptions for the scheme's technical provisions and the recovery plan* (October 2014), as part of the actuarial valuation process as at 31 March 2014.

1.2 We appreciate the effort and diligence that has been applied by the trustee (and their advisers) in the valuation discussions to date, and look forward to further engagement with the trustee company in the final stages of the valuation process.

1.3 Our overall view is that we are prepared to work within the trustee's risk framework and accompanying three tests, but we do have significant concerns about the overall level of prudence that is being assumed in the valuation process. Failure to address this concern of excessive prudence has caused a number of institutions to challenge the underlying methodology and rationale for the assumptions adopted. We have been keen to understand what flexibilities may be available within the trustee's risk framework and, working with our advisers Aon Hewitt, have identified several areas where we ask the trustee to make changes, such that our current proposal for benefit reform would satisfy test 1, while avoiding the most prudent interpretation of the tests. The changes we are proposing are credible and reasonable, but would avoid an approach that is considered excessively prudent by the sponsors, to the potential detriment of all scheme stakeholders.

1.4 At this point we are still awaiting responses to some questions we have posed to the USS, particularly around potential areas where prudence is incorporated into the assumptions and where this prudence may not be transparent. We do not wish to hold up the process unnecessarily, but do ask for responses in due course. And, as we will come on to explain, we ask that the trustee removes any unnecessary margins for prudence in the final valuation results.

1.5 We are pleased to report that our consultation with employers has drawn a substantial response, with many institutions providing comprehensive responses. Responses were received from 54 of the participating institutions, which together employ more than 75% of the active members in the USS.

1.6 The sheer range of responses to this consultation – and previous consultation exercises as part of the valuation framework – means that the majority view will not satisfy all employers, and indeed some structural aspects of the USS (such as the exclusivity clause, and the lack of control over benefits and investment strategy at an individual institution level) are causing real concern for some. In our response to the March consultation exercise we said we would welcome a further review of mutuality and potential sectionalisation. The diversity of institutions' views expressed in recent consultations makes it imperative that this review takes place sooner rather than later. We suggest that this review commences as soon as the 31 March 2014 valuation process is completed.

2. Room for manoeuvre within test 1

2.1 We begin with our comments on the trustee's first test, which has deep implications for how the technical provisions are set. In particular, if test 1 is accepted as proposed, then this effectively "forces" a Gilts+ methodology to be adopted, as the technical provisions is defined by reference to a self-sufficiency target that is calculated on a Gilts+ basis.

2.2 The proposed test 1 is set out in the Appendix for convenience, along with the other tests. The test has two elements:

(i) Ensuring that the gap between self-sufficiency and the technical provisions in 20 years' time (in real CPI terms) is no greater than the present value of 7% of payroll over a 15 to 20 year period. The rationale being that *"the trustee could be required to replace the investment returns assumed in the funding of current benefits with additional contributions from the participating employers [taken as the difference between 25% and 18%]",* which are assumed to then be paid *"over a long period such as 15 to 20 years"*.

(ii) Maintaining the gap between self-sufficiency and technical provisions over the next 20 years.

2.3 On 2.2(i), at a technical level, we understand that the projected difference (in real CPI terms) between self-sufficiency and the technical provisions in 20 years' time is about £6Bn (*), and that this falls towards the bottom end of the range permissible in test 1 of £5.8Bn to £7.5Bn. In our view, if the result of the test were at the top end of this range, this would still result in a funding approach that was much more prudent than the approach that has been used in recent actuarial valuations, and we ask the trustee to apply flexibility here. This flexibility could be achieved by a variety of means (explained in section 3). Moreover, there are some further elements of flexibility that could be credibly considered:

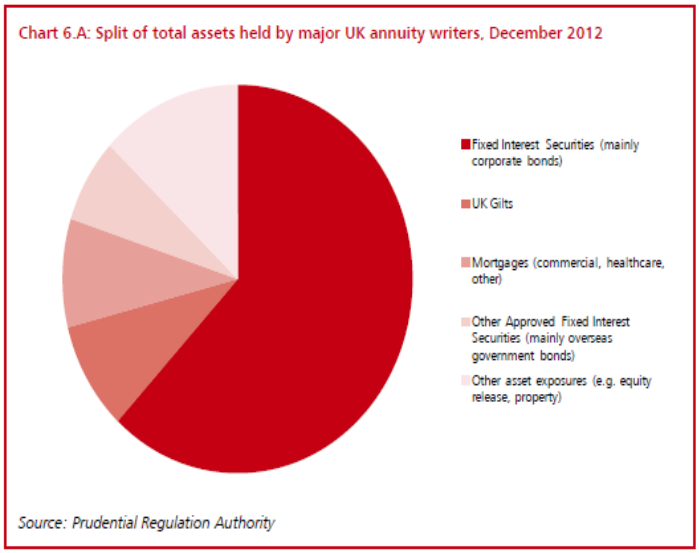
- The use of real CPI terms could be considered somewhat arbitrary (as a proxy for the growth of the sector), and for example if Steve Webb MP had not changed the indexation of benefits from RPI to CPI in 2010 then we would envisage that the trustee would be considering the growth of the sector in real RPI terms. Using RPI would lead to a higher gap being permissible.

- There is a strong focus on the gap between 25% and 18%. Both of these parameters could be explored further. In particular, if the trustee was required to increase the funding target to a self-sufficiency level, then this may come at a time when further benefit changes were justified, meaning that a proportion of the 18% employer contributions could be funnelled into making up the gap to self-sufficiency.

(*) Note: This figure has not been updated for the results of the 31 March 2014 valuation. We have requested an updated figure so that there is transparency over how test 1 applies, and how much flexibility is available.

2.4 On 2.2(ii), while we agree with the aim of limiting the growth of the scheme, we feel there is a potential measurement issue in looking at the gap between self-sufficiency and technical provisions today, rather than by looking at the gap between self-sufficiency and the scheme assets (of £14.5Bn at the valuation date). In particular by looking at the gap between self-sufficiency and technical provisions today, a potential anomaly is created, whereby redefining the salary link to be based on CPI immediately (or even refining the salary increase assumption to be more realistic as requested in 3.4) stretches the gap between self-sufficiency and technical provisions, potentially leading to further benefit changes being required. Overall, we feel 2.2(ii) is less flexible and less well-defined than 2.2(i).

2.5 The use of government bonds as the starting point for a long-term self-sufficiency measure is standard industry practice. That said, the nature of the USS may lead to wider opportunities being available than for a "standard scheme". For instance, if the scheme had to move towards a self-sufficiency portfolio, the thinking may be more aligned to that adopted by many insurance companies (in terms of how they structure their assets to help generate profits, rather than on the terms used for pricing). The UK Treasury pointed out in its paper on *" Freedom and Choices in Pensions (2014)"* that the portfolios backing insurance company annuity books contained significantly more corporate debt than government debt – and that corporate debt generates a materially higher yield. As before, we do not see how this argument should fundamentally cause us to reject the trustee's proposals for test 1 – but we do regard Gilts+0.5% p.a. as a very prudent self-sufficiency target in the USS situation, which adds further weight to the argument that the test should be applied with some flexibility.



2.6 In conclusion, we are comfortable with test 1 being used in the decision-making provided that it is applied flexibly – and we have yet to see any compelling evidence that it is being applied in a flexible fashion.

3. Technical Provisions

3.1 Discount rate

a) We observe that the trustee's proposal for the discount rate introduces a significant degree of additional prudence compared with the approach used for the previous triennial valuation as at 31 March 2011 (of some £3.6Bn). This proposal has not been advanced by the trustee as being necessary as a result of a deterioration in employer covenant, or a revised view on investment markets, but rather follows the more in-depth covenant review completed for the 2014 valuation allied to the trustee's interpretation of the Pension Regulator's guidance (particularly as it relates to forging a connection between covenant, investment strategy, and funding – and the desire to de-risk that comes from the trustee's analysis).

b) Around a quarter of the institutions which responded to the consultation do not support the Gilts+ methodology (with a further 1 in 8 flagging that they are uneasy about basing decisions on what may be unusual market conditions). While we support UCU's request for further information on alternative approaches – and urge the trustee to respond to this request in the near future – on balance, we would prefer not to make this debate a centrepiece of the March 2014 valuation. In coming to this conclusion, we have taking into account a number of points, including:

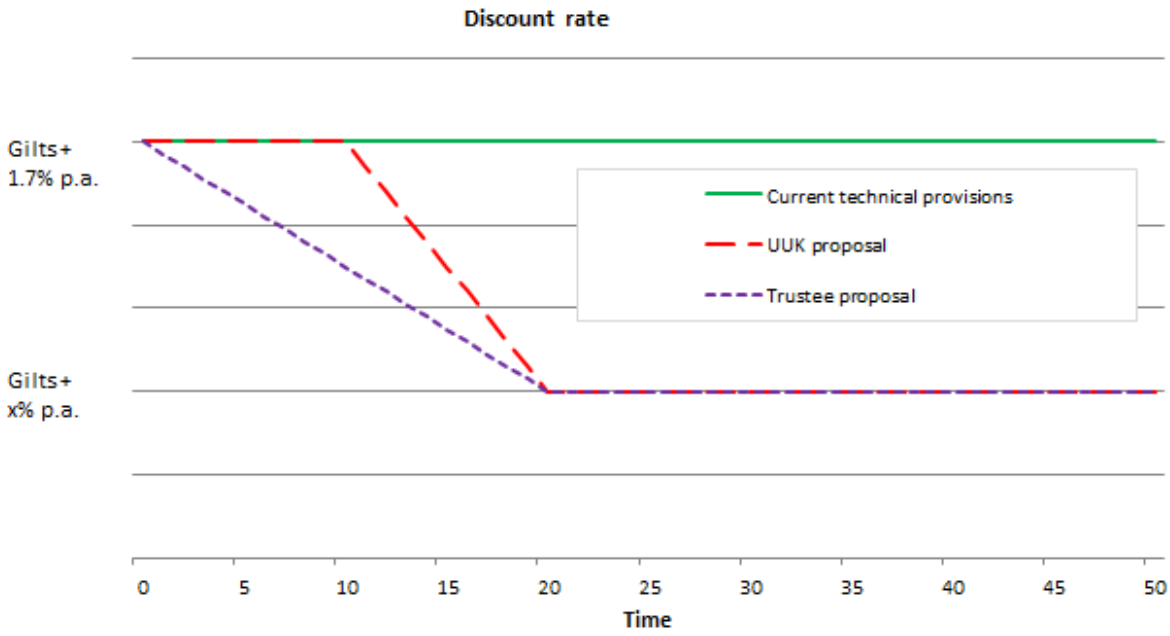
- The majority view is supportive of trying to work within the trustee's three tests, rather than looking to replace them with a new coherent framework for covenant, investment, and funding.
- We feel this is a more realistic position to take, given that the Gilts+ approach has been used previously, and by law the trustee does not need to change the approach.
- Some may also be comforted by the prevalence of this approach across the UK pensions industry, although a number of responses have pointed to the greater flexibility the Pensions Regulator is now required to adopt here.
- Many employers have said that they support the long-term reduction in the level of risk carried by the scheme (although many expressed concerns that investment de-risking should be sensitive to market conditions and specifically to current market conditions), which in turn would suggest a reduction in the discount rate over time.
- We observed that many of the criticisms of the Gilts+ methodology have come from parties that are not directly responsible for addressing the consequences should the aspired for investment returns not come through in practice (meaning they have often come from eminent mathematicians and physicists, rather than from Vice Chancellors or employers' finance teams).
- We are broadly supportive of the trustee's three tests, in particular the concept of reducing the growing size of the exposure of institutions to pensions risk. As noted above, test 1 effectively sets the minimum level of technical provisions with references to a Gilts+ target.

c) Nevertheless, while we see practical advantage overall in working within the structure of the three tests, this does not mean that we can support the discount rate proposed by the trustee.

In particular:

- It is important that the general unease felt by many institutions about the trustee's proposed approach to the discount rate, and taking decisions in unusual market conditions is reflected prominently in our response.
- Aon Hewitt's view is that while interest rates will stay lower for longer, over a 5 year period (and longer) it is likely that interest rates will rise by quicker than is priced into the gilt markets. This suggests that pricing in de-risking over a short term period will likely over-state the liabilities, assuming that the trustee does not decide to de-risk in current market conditions (which we understand is the case).
- Some compelling arguments have been put forward for assuming de-risking occurs in 20 years' time, rather than by assuming arbitrarily that de-risking is carried out on a linear basis over a 20 year period.
- If we were to assume "bullet de-risking" in 20 years' time, this would give some breathing space for the strategy to be reviewed at the next triennial valuation due at 31 March 2017 (rather than de-risking being rushed through).
- Our understanding of test 1 is that it is agnostic to the shape of de-risking over years 1 to 20, as it considers the gap with self-sufficiency in 20 years' time (meaning that assuming bullet de-risking in 20 years rather than a linear decline would not have an impact on test 1). Standing back, we believe it is appropriate that test 1 has this flexibility, given the covenant assessment provided by EY, and the concerns held by many over current market conditions.

d) Having considered the arguments put forwards, Universities UK proposes the following approach, which we urge the trustee to accept:



In more detail, we ask the trustee to adopt a level discount rate of Gilts+1.7% p.a. from years 1 to 10, and then assume a steeper decline from years 10 to 20 from Gilts+1.7% p.a. to Gilts+x% p.a. Such an approach represents a significant movement from the current technical provisions, while being a compromise between the trustee proposal and an alternative approach of "bullet" de-risking in 20 years' time.

e) In addition, our preference is for the result of test 1 to be at the top end of the £5.8Bn to £7.5Bn range than the current proposal. We view even the very top end as introducing a significant additional degree of prudence compared with the approach used for the 2011 valuation, which in turn will enable material de-risking to take place at an appropriate time. Getting to the top end of test 1 could be achieved in a number of ways (including some of the ideas mentioned later in this section), and we suggest amending the +x% in 20 years' time such that the projected gap in 20 years is close to £7.5Bn.

f) The draft Statement of Funding Principles states that the discount rate is based on: *"a notional portfolio of UK Government conventional gilt stocks whose cash flows approximately match the scheme's estimated benefit cashflows"*. But of course benefit cashflows for past and future service will be different. Given the current position of financial markets, which is pricing in an increase to gilt yields over time, our view is that recognising this difference in valuing past and future service will lead to a lower theoretical future service contribution rate. If this is not recognised, we consider a further layer of prudence is being applied. We therefore ask the trustee to quantify the extent of additional prudence that is being incorporated here, and to use a separate discount rate for future service if the impact is material enough to affect the contribution rate.

3.2 Inflation risk premium

a) As mentioned at the actuaries' meeting on 18 November 2014, the employers were surprised by the trustee's proposal to reduce the current assumption from 0.3% p.a. to 0.2% p.a. initially, and then to apply a further reduction to 0.1% p.a. over a 20 year period. Our understanding from the December 2013 consultation was that an assumption of 0.2% p.a. was being proposed, although we now understand that an allowance was made for the further reduction to 0.1% p.a., but that this was classified incorrectly as stemming from the discount rate change.

b) In the trustee's latest consultation, the reason given for reducing the inflation risk premium from 0.3% p.a. to 0.2% p.a. is to reflect *"an allowance for the increased level of inflation hedging which is either in place or is anticipated"*. No explicit reason is given for reducing the inflation risk premium further to 0.1% p.a.

c) We viewed a reduction to 0.2% p.a. as not unreasonable, accepting that this increases the deficit by around £0.9Bn compared with the approach adopted by the trustee in consultation with the employers for the March 2011 valuation.

In coming to this view, we have taken into account:

- The view of Aon Hewitt that a best estimate "inflation risk premium" has increased by around 0.2% p.a. over the period 31 March 2011 to 31 March 2014, which suggests that if anything the allowance should increase and not reduce.
- The fact that using a lower inflation risk premium would provide additional scope for hedging of inflation through market instruments (index linked gilts, and inflation swaps) which would reduce the scheme's exposure to this risk. We view this as consistent with the scheme's aspirations to de-risk over a 20 year period.

d) Compared with the trustee's proposal of October 2014, using our proposed assumption of 0.2% p.a. would reduce the latest deficit by about £0.8Bn (and would also place a lower value on the cost of future DB benefits).

e) In the context of test 1, if no adjustment for an inflation risk premium is made to the self-sufficiency target (which presently assumes no inflation risk premium), then this would increase the projected £6Bn difference in 20 years' time, but it would still sit comfortably in the £5.8Bn to £7.5Bn range.

f) However, our preferred formulation would be also to incorporate a modest inflation risk premium of say 0.1% p.a. within the self-sufficiency target. This would then keep the gap at around £6Bn for test 1 (because Universities UK's proposals for the inflation risk premium would affect similarly the projected technical provisions and projected self-sufficiency measures in 20 years' time, leaving the gap unchanged to good approximation). Allowing for a modest inflation risk premium here could be considered analogous to allowing for a modest investment return premium of 0.5% p.a. over gilts in the proposed self-sufficiency discount rate. We are taking the view that it is unlikely that the USS would hedge inflation rates fully using swaps/gilts given the sheer scale of the USS and so a modest inflation risk premium is clearly justifiable.

3.3 Assumed gap between Retail Price Inflation and Consumer Price Inflation:

a) In Aon Hewitt's view, the best estimate of the gap between Retail Price Inflation and Consumer Price Inflation is 1.0% p.a. USS's advisers appear to have the same view, noting the assumptions used for the neutral estimate (source: page 33 of USS's October 2014 consultation).

b) Based on Aon Hewitt data, a significant portion (40%) of schemes advised by Aon Hewitt have used a best estimate gap for the latest round of valuations. Our contention is therefore that using a best estimate gap would not be unusual, while acknowledging that many schemes allow for some margin of prudence here.

c) The current USS Statement of Funding Principles (dated 15 June 2012), which by law sets out the principles used to determine the assumptions for the technical provisions, is we believe highly relevant here:

"In particular, a prudent margin will be included in the discount rate and mortality assumptions will be based on prudent principles. Other assumptions will be based on best estimates of future experience, within the constraint of the basis being prudent overall".

Changes to a statement of funding principles have to be agreed by the trustee subject to consultation with the employers. On this, we see no reason for moving away from the existing documented principles, which appear designed to ensure that hidden prudence is not incorporated into the assumptions to the potential detriment of the scheme's stakeholders. In our view, to justify using an assumption of 0.8% p.a. under these existing principles, then one of the following would need to be true:

- We apply a loose interpretation of the wording *"based on"*, by saying 0.8% is *"based on"* 1.0%. But this seems obtuse semantically, and unnecessary given that both Universities UK's and USS's advisers have a common vision of future best estimate CPI.

- The clause *"within the constraint of the basis being prudent overall"* is activated. But there is considerable prudence already in the assumptions overall, e.g. the trustee's view on best estimate future investment returns (e.g. Gilts+2.75% in year 1) far exceeds the proposed discount rate (e.g. Gilts+1.7% in year 1). It seems completely unnecessary to incorporate an arbitrary 0.2% p.a. margin to ensure the basis is prudent overall.

For clarity we are not saying that an assumption of 0.8% p.a. cannot be justified, but rather that a range of assumptions including 1.0% p.a. can be justified as reasonable, and moreover that a gap of 1.0% p.a. is consistent with the agreed funding principles.

d) Using a 1.0% p.a. gap would reduce the technical provisions by around £2Bn. For test 1, this may take the gap to beyond the top end of the proposed range of £5.8Bn to £7.5Bn, unless some modest adjustment is made to the +x% in the discount rate assumption, or to the self-sufficiency target (although we take the point from the actuaries' discussions that a gap of higher than 0.8% p.a. would be unusual for a self-sufficiency target).

3.4 Salary increases

a) Under the latest UUK proposal for benefit reform, the impact of the salary increase assumption appears relatively modest – affecting the benefits accrued before the assumed implementation date of April 2016, affecting slightly the gap between self-sufficiency and technical provisions in 20 years' time under test 1, and affecting the deficit repair contributions as a percentage of payroll.

b) In our consultation with employers, around a quarter of employers expressed concern that the salary increase assumption was too high. On balance, we believe it would be appropriate to reflect a more realistic view of salary increases in the valuation results, which would in turn help manage expectations over the likely quantum of impact on member benefits upon redefining the salary link.

c) In terms of the general salary increase assumption, there is nothing to suggest that there will be a shift in the coming three years away from the recent trend for heavily moderated general increases, unlikely to exceed CPI. As such we request that the trustee applies a short term salary increase assumption of CPI for the first three years, reverting to RPI+1% p.a. for the period thereafter.

d) For other increases, we are comfortable with the promotional scale being used for future service benefits. However, we propose removing the additional scale that is applied for past service benefits. The trustee explains why the additional scale is not applied for future service benefits in its consultation document: *"It should be noted that a lower age-related salary scale assumption is currently used for the calculation of the future service cost (compared to the salary scale used for past-service increases), which reflects the expectation that in the longer-term such increases would be in line with a lower scale excluding some historic factors which it is not anticipated will be repeated."* In our view these reasons apply equally to the determination of the past service liabilities. And, in the spirit of removing unnecessary margins for prudence, we ask the trustee to remove the additional allowance (which was worth £0.85Bn at the 31 March 2011 valuation) from the 31 March 2014 valuation.

3.5 Demographic assumptions

a) In our consultation with institutions, the desire to avoid unnecessary prudence, or to needlessly layer prudence upon prudence, came across strongly and consistently.

b) We request that the trustee holds true to adopting best estimate demographic assumptions, given the prudence that is already included in the discount rate and mortality assumptions, and so that the degree of prudence is clearly visible rather than potentially hidden across many and varied assumptions. As above this is wholly consistent with the wording incorporated into the current Statement of Funding Principles. We note that despite this explicit statement, the current proposals have incorporated prudence in various places (such as the CPI assumption). We need to be convinced that that are no comparable further hidden margins in the demographic assumptions.

c) We have been informed by USS on 20 November 2014 that responses to observations made by Aon Hewitt on 31 October 2014 on the level of prudence in the demographic assumptions will follow in due course. This has not been available before the USS's deadline for responding to consultation which is disappointing. We would ask the trustee to provide further information on the prudence included in all of the assumptions, including the mortality base table with the adjustments proposed by USS, in responding to this note, and to seek to remove areas of prudence that are not envisaged in the current statement of funding principles (where they are material enough to affect the ultimate contribution rate).

d) As an additional specific comment, we are surprised that CMI2012 base tables were used for the initial valuation results, given that the more up-to-date CMI2013 base tables were published in September 2013 which is well before the valuation date. We request that the CMI2013 base tables are used for the final figures, noting that they would be expected to result in a reduction to the liabilities, assuming that the scheme actuary is again content to apply no further adjustments to the standard tables other than those used for the 2011

actuarial valuation. The trustee may take further comfort here from the recently published CMI2014 base tables, which if used would imply a further reduction in liabilities.

4. Recovery Plan

4.1 Universities UK's preference, as previously indicated, is for a 20 year recovery period. In our consultation with employers, a period of 20 years was supported by most institutions. It has been pointed out that by proposing a 15 year period, the trustee is introducing yet another layer of prudence. And that perhaps a better interpretation of the EY analysis (covered further below) is that the recovery plan period could be at least 20 years.

4.2 In earlier work the trustee has provided indicative figures based on a 15 year period, and we assume therefore that the trustee is content with a 15 year period, although it is noted in the consultation paper that it is 50% longer than the 10 year period agreed for the 2011 valuation.

4.3 We believe the key question then for extending a recovery period from 15 to 20 years is: what additional risk does this expose the trustee to? The principal risk is that the employers become insolvent during the 5 year period from 15 to 20 years, and the trustee therefore receives fewer deficit contributions. Under the Universities UK proposal (and using the baseline trustee assumptions), the deficit contributions due are 1.9% of salaries each year over a 20 year period. Additionally, under our proposal, the trustee would give credit for 50% of assumed asset outperformance for a longer period (specifically for years 15 through to 20). To provide an order of magnitude comparison, we have estimated that this assumed asset outperformance is equivalent to contributions of around 2% p.a. of payroll. So, all in, the additional exposure could be considered equivalent to around 4% (i.e. 1.9% + 2%) of payroll for the 5 year period from years 15 to 20.

4.4 EY has provided guidance to the trustee on the strength of covenant over a 20 year period, and beyond: *"We have considered there to be reasonable visibility regarding the robustness of the covenant over a 20 year period […]. For the avoidance of doubt, we consider there to be a strong likelihood the covenant will remain robust beyond that period, however visibility/certainty is reduced".* Based on this independent covenant assessment, we see no obvious reason why an exposure of around 4% of payroll over years 15 to 20 would cause discomfort. Put another way, we would be concerned if, having commissioned an extensive and costly piece of research into the employers' covenant, which clearly concludes that it is strong for at least 20 years, the trustee decided to go against that analysis in determining the recovery period.

4.5 We would also note that, through test 1, the trustee is assuming that the employers could hypothetically support additional contributions of 7% (i.e. 25% less 18%) of payroll over a long period such as 15 to 20 years, which exceeds the figure of 4% mentioned above. Again this view is informed by the EY analysis, and we hope it should provide further comfort for supporting a 20 year recovery period.

4.6 We acknowledge that moving to a 20 year period for this valuation could limit flexibility in future to respond to poor outcomes. This potential limitation is one that the employers are seeking to address through the proposed hybrid benefit design – where we are building in some flexibility to respond to adverse events, through the DC design aspects in particular.

4.7 We note that 20 years is the notional end point in the EY analysis, but we would be very surprised if the horizon for future successive valuations were to follow the arithmetic sequence of 17 years, 14 years, etc. In the context of test 2, either a 20 or 17 year period could be used if considering the position in three years' time. Our view is that a 20 year period is reasonable, partly because we believe the period specified in the EY analysis was rounded to 20 years, and there is a *"strong likelihood"* the covenant will remain robust beyond that period.

4.8 In valuing the deficit contributions in the recovery plan, we propose that the discount rate is calculated using spot rates that reflect the actual timing of the recovery plan payments, rather than the discount rate used to value the past service liabilities which would introduce another layer of prudence to the approach.

4.9 On balance we support the allowance for 50% of assumed asset outperformance to be allowed for in the recovery plan. We request that no de-risking is assumed for the first 10 years in this calculation, consistent with our suggested approach for the shape of the discount rate.

5. Statement of Funding Principles

5.1 We are comfortable that the draft statement of funding principles provided is largely in line with the previous draft (subject to the comment below), updated to reflect the integrated approach to funding on which the trustee has been consulting.

5.2 However, we note that the trustee has proposed removing the wording referenced in 2.6 (c). In our view the previous wording set out a clear vision of how prudence would be incorporated into the assumptions, and we see no reason to change an approach where nearly all assumptions are best estimates (or based on best estimate principles, where it is not practical to form a view e.g. due to limited data, or where the assumption is immaterial) save for the discount rate (which is to include a prudent margin) and the mortality assumption (which is to be set based on prudent principles). We feel that this approach should bring discipline in ensuring that there is visibility in the margins for prudence, and also therefore to assuring stakeholders that the assumptions are not over-cautious. We have received considerable support from the sector on this.

6. Closing remarks

6.1 Overall, Universities UK would be prepared to support the approach adopted by the trustee, subject to the points made in this note, which we summarise below:

Item	**Universities UK's response**
Discount rate	• Gilts + 1.7% p.a. for years 1 to 10, declining linearly to Gilts + x% p.a. over years 10 to 20, where x is chosen to satisfy the top end of test 1 (taking into account other changes to assumptions proposed below), where by test 1 we mean the calculation of the gap between self-sufficiency and technical provisions in 20 years and the comparison with the present value of 7% of contributions over 15 to 20 years. • Quantify prudence being applied by basing Gilts+ approach of a single discount rate for past and future service (and use separate rate if material enough to impact contribution rate). • Universities UK supports UCU's request for further modelling of alternative approaches, to provide greater transparency on this question. Universities UK also supports the use of a Gilts+ approach for 2014 valuation.
Inflation risk premium	• 0.2% p.a. for technical provisions. • 0.1% p.a. for self-sufficiency target (rather than 0%).
RPI – CPI gap	• 1% p.a.
Salary increases	• CPI for first 3 years, then RPI+1% p.a. • Remove additional scale for valuing past service benefits.
Demographic assumptions	• Trustee asked to identify margins of prudence, and remove unnecessary margins (based on the wording in the current SFP as a guide, and where material enough to impact contribution rate). • Use CMI2013 base table, rather than CMI2012.
Recovery plan	• 20 year period. • Allowance for 50% of asset outperformance, assuming no change to investment strategy over years 1 to 10 as for discount rate proposal. • Use discount rate appropriate for timing of recovery plan payments when valuing deficit contributions.
Statement of Funding Principles	• Retain existing wording on principles of prudence.

6.2 As mentioned, our key concern is that, with the trustee significantly increasing the proposed technical provisions, we do not end up in a position where too much prudence is incorporated to the detriment of the scheme's stakeholders. In making this point, we would observe that the 2014 budget changes are likely to mean that more members transfer out of the scheme in future in order to take advantage of this additional flexibility, and while this cannot be quantified now, not making any allowance is likely to represent a further margin for prudence that is applied in this valuation.

6.3 In our response, we have aimed to suggest modifications to the technical provisions that could be used to produce an approach that falls within the framework of the trustee's three tests, are demonstrably credible and reasonable, but which increase the prudence in the basis to a lesser degree than is proposed. The three-test framework is not formally part of the Pensions Regulator's guidance, nor indeed a requirement under its approach, so we believe the trustee should be able to utilise any flexibility available within their own self-imposed three-test framework (which in the experience of our adviser, Aon Hewitt, is unique).

6.4 While we understand that the trustee may have some concerns about a 20 year recovery plan, we feel the EY analysis provides ample data to support such an extension. We would also observe that under the employers' proposals, the trustee benefits from much of the deficit being met immediately through the proposed change to the salary linkage on past service benefits.

6.5 We confirm our response of March 2014 that Universities UK is ready to engage in a wider debate about the mutuality of the USS. We suggest that the review begins after the 31 March 2014 valuation process is completed.

6.6 We appreciate the effort and diligence that has been applied by the trustee in these valuation discussions, and look forward to working with the trustee company to achieve a position that we hope will be a more satisfactory balance for all of the scheme's stakeholders.

6.7 We understand that the trustee will respond to this note shortly after the USS Board meeting on 4 December and we look forward to discussing our views on the valuation process and outcomes further at that point. In the meantime, if there is any further information you require on the employers' response to the consultation, please contact Tony Bruce at pensions@universitiesuk.ac.uk.

Appendix: The guiding principles proposed by the trustee

The guiding principles, adopted by the trustee in order to manage scheme funding, draw very clear lines between the support available from participating employers and scheme risk over the horizon of the covenant (and the trustee's view is that it has visibility of the covenant over a period of 20 years). This is in keeping with the trustee's long-term view of the scheme and its approach to funding and investments. These principles will be reviewed as set out above and employers will be consulted on a continuing basis. The guiding principles for scheme funding adopted by the trustee can be summarised as follows:

1	**Reliance of the scheme on the sector**
	Over the period for which there is visibility of the covenant (estimated to be 20 years) there should be no increase in USS's reliance on the covenant of the sector and, where opportunities arise, the reliance on the covenant should be reduced if possible. The reliance on the sector will be measured as the additional contributions which would be required if the trustee moved to a relatively low risk approach to investment strategy and therefore could not rely on the same level of investment returns which are anticipated under the current investment strategy.
2	**Stability of contributions**
	There should be a *high* probability that the employer contribution rate will not exceed 18% of salaries over a three year period and there should be a *very high* probability that the employer contribution rate will not exceed 21% of salaries over the same period. In the longer term the stability of the contribution rate should be increased.
3	**Investment risk and tail risk**[1]
	The balance sheet of the scheme's participating employers should be able to cover the impact which a rare set of adverse circumstances (tail risk) may have on the funding position of the scheme. This includes being able to cover both the level of any existing deficit, plus an allowance for a potential increase in this deficit over a one year period if an exceptional economic event were to occur with resulting adverse impacts on investment returns.

[1] The investment strategy being followed by the scheme means that, in extremis, there is a very large range of uncertainty in the potential change in the deficit which could take place over even relatively short periods, such as one year. These changes could take place through, say, a particularly adverse combination of changes to long-term interest rates and / or the level of the stock market. Within this range of uncertainty, there is a long "tail" of outcomes with a relatively low probability but a very high impact on the deficit. Tail risk is therefore a measure of the potential impact of these low probability outcomes – it is often quantified as a single number called the "Value at Risk" or VaR associated with different levels of probability as defined in the table above. It is a scheme-specific measure because it depends on the profile of the scheme's liabilities and the investment strategy being followed. Since the tail risk considers relatively unlikely events it is not used as part of the main set of parameters for setting the contribution requirements. However the tail risk cannot be ignored as it is an important element for the trustee in considering the ultimate security of benefits. In practice it needs to be looked at to ensure that the tail risks arising from the scheme's investment strategy are supportable given the potential for changes in contributions or additional mitigating actions. A similar concept is used by financial institutions, such as insurers, in measuring their resilience to "market shocks".

Scheme funding and the trustee's technical tests

The three guiding principles identified above are supported by a number of specific technical tests; this approach enables the trustee both to assess any scheme changes proposed by the employer and member representatives in relation to the current scheme funding challenges, and to manage the scheme going forward.

The tests inform the trustee's decision making on the degree of risk which is acceptable within the scheme and specifically in delivering both the past and future benefits. These decisions are formed by both looking at the risks in the short term but also importantly how these are likely to build up over longer time horizons, particularly the 20 year period over which there is good visibility of the covenant.

The calculations on a technical provisions basis involve placing a current value on commitments which will run for many decades into the future, and the USS trustee – just like other trustees of defined benefit schemes – must make sensible and prudent judgements regarding the rate of return that can be expected in the long term on future investments, along with other appropriate assumptions.

The trustee will use these tests as a reference and guide to determine the nature and timing of any responses that might be required.

Test 1: Benefit security and additional contribution cover
The difference between the liabilities assessed on a self-sufficiency approach (for this purpose a discount rate of gilts plus 0.5% is used) and the actual technical provisions basis should generally not exceed what we refer to as the amount of contributions payable in extremis, which we will indicatively measure as the difference between (i) the maximum contribution of 18% of salaries stated by the employers as being desirable and (ii) the maximum identified as being affordable by employers (in the independent covenant review undertaken by EY on behalf of the trustee board) of 25% of salaries, over a long period such as 15 to 20 years. The rationale is that, at any given time, the trustee could be required to replace the investment returns assumed in the funding of current benefits with additional contributions from the participating employers, if such a response were needed due to scheme or economic circumstances. In considering the development over time of the relationship between the liabilities measured on a self-sufficiency basis and on the technical provisions basis, the position at the end of a 20 year horizon will be used. The size of the technical provisions at the end of 20 years will be determined so that the difference between it and the self-sufficiency value of liabilities is maintained broadly constant. This informs the trustee of the size of the technical provisions required, and from that the required investment strategy can be derived. It's the gap to the self-sufficiency funding level that is critical, and that is maintained (and not allowed to grow disproportionately) by keeping the technical provisions value at a sufficient

level over time.

Test 2: Stability of contributions

Modelling will be carried out to quantify the scope of the contributions that the scheme might require (using the technical provisions basis) when risk is assessed over a three year horizon.

It is proposed that the contribution levels required to meet (i) the cost of the future benefits accruing and (ii) any deficit on the technical provisions basis – at the end of a three year period – should have a *high* probability of not exceeding 18% of salaries and a *very high* probability of not exceeding 21% of salaries. In assessing the risk parameters the following will apply:

- A high probability will be broadly 70% or above.
- A very high probability will be broadly 90% or above.

Test 3: Benefit security and the asset base of the participating employers

The net asset value of the participating employers will be compared to the deficit on an economic basis (for this purpose a discount rate equal to the yields on gilts is used) plus the amount of additional assets required to meet a 'tail risk', one in one-hundred, funding event.

The 'tail risk' will be measured using a Value at Risk (or VaR) at a 99% level over a one year period. This comparison will be a guide to the extent to which, in all but the most extreme circumstances, the trustee could rely on sufficient funds to secure the benefits promised by the scheme.

The trustee acknowledges that the net asset value of the scheme's participating employers is not precisely quantifiable. As such the trustee will monitor the ratio of (i) the deficit on an economic basis plus VaR at 99% level to (ii) the estimated net asset value of the scheme's participating employers. Should the ratio increase above 90%, then the trustee will commence a discussion with stakeholders as to whether any mitigating responses are required.

If the ratio were to increase above 90% the net asset value of the scheme's participating employers would be assessed on a basis which might include the use of insurance replacement value measures if this is judged to be more representative of fair value than book value.