Conditional Indexation

May 2025

This document was updated on 23 October 2025 to correct the date of Municipal Pension Plan's last valuation from 31 December 2023 to 31 December 2021.

Contents

1 Executive Summary

Historically, USS valuation outcomes have been volatile. The cost of providing Defined Benefit (DB) pensions is set by the Trustee and has been unstable. Resulting contribution rates have varied from one valuation to the next ultimately resulting in changes to pension benefits. This is not ideal, has damaged confidence in the scheme and has created uncertainty for members and employers.

There are a range of potential reasons for this volatility. In part this is inherent in the nature of the guaranteed benefits provided to members and the method used to value these. The impact of valuation methodology on stability and benefits is being considered separately by the Stability Working Group which expects to report on this in due course.

Guarantees provide valuable certainty to members but come at a cost. This cost isn't entirely known up front – meaning that things could play out better or worse than expected.

The cost of guarantees manifests in two main ways:

1. Guarantees may drive a more cautious investment strategy that prioritises certainty over returns.
2. As part of funding the scheme, the Trustee creates reserves as a buffer against risks. Building reserves costs money - the stronger the guarantee, the greater the reserve.

Broadly speaking, stronger guarantees require greater certainty resulting in higher costs and contribution requirements.

A joint working group of UCU and UCEA representatives is exploring:

- Whether by making annual increases to benefits conditional, there is the ability to better manage contribution volatility, and target better overall outcomes.
- The risks associated with such a structure and the extent to which these are fair, understandable and acceptable to all involved.

1.1 What is Conditional Indexation (CI)?

Indexation refers to annual cost of living increases to pensions to help protect their value from being eroded by inflation over time. Under USS's current DB benefit structure, indexation (both before and after retirement) is guaranteed within certain limits. Under Conditional Indexation, the core benefits would continue to be DB, but indexation would be at a targeted level within certain limits. Under current governance arrangements, benefits would be set by the JNC. Whether or not indexation applied would ultimately depend on the funding position of the scheme (i.e. in simple terms whether the scheme could afford to pay it).

It is important to note that past benefits, and indexation on those, would remain guaranteed. If introduced, Conditional Indexation would only apply to benefits accrued after the date it is introduced.

1.2 What could CI deliver and what are the risks and challenges?

For a given level of contributions, a DB scheme with Conditional Indexation may deliver better outcomes in three main ways:

1. **Stable outcomes:** Through a relaxation of regulatory constraints by softening guarantees there may be less pressure to change contributions and core benefit features such as the accrual rate in response to periods of funding pressure.
2. **Higher overall target benefits:** Through the ability to take more investment risk and target higher returns which could in turn be passed on to members and employers.[1]
3. **Fairer outcomes:** Changing how members benefit from emerging scheme experience in a way that could be more intergenerationally fair.

This is not without risks and challenges, in particular:

- **There is less certainty for members over inflation protection**– Inflation protection would be linked to investment and funding outcomes, shifting more risk to members who may receive more or less in retirement than currently. This risk may be experienced differently by different membership groups.
- **It is more complex** – which means it may be harder for members to understand, and for USS to communicate and operate than the current arrangement.
- **There are trade-offs –** between higher target benefits, intergenerational fairness and stability.

The key question is whether the potential for better outcomes is worth the associated drawbacks, challenges and risks.

1.3 How is the working group assessing CI?

In order to understand, quantify and compare the benefits, risks and trade-offs associated with Conditional Indexation compared to the current structure we have agreed that we will consider the following assessment criteria:

Objectives – How do we assess if CI can deliver better outcomes?

Assessment criteria:	Detail
Likelihood of Retaining DB	Increase the chances of retaining a predominantly DB benefit structure over the long term
More stable contributions for members and employers	Total contributions should be more likely to remain within an agreed range in the short-medium term
Higher overall benefits	Higher expected benefits in the vast majority of scenarios with acceptable outcomes in poor scenarios supported by a catch-up mechanism.
Stability of core benefits	Achieve greater stability over time in the core level of benefit accrual (accrual rate and salary threshold)

[1] The Trustee has a statutory power to set the investment strategy.

Limitations – How do we assess risks, challenges and trade-offs?

Assessment criteria:	Detail
Risk	The levels, types and transfer of risk and reward from employers to scheme members must be understood and acceptable.
Clear, transparent approach for managing CI	Transparent decision-making process established for determining annual CI increases, with clarity on the roles and responsibilities of different bodies.
Member fairness and equity	The risk and reward trade-offs between different groups of members must be understood, proportionate and more intergenerationally fair.
Communicable and implementable	The benefit design should not be unnecessarily complex, should be capable of being clearly communicated and understood by members and employers and implemented in a way that represents good value for members and employers.

1.4 What work has been done so far?

There are three main areas of exploratory work that have been performed:

1. **Peer scheme review –** An initial exploration of how conditional indexation has been used in other jurisdictions, what has worked well, what has not, and lessons learnt.
2. **Initial modelling of outcomes –** Modelling of a sample, high level scheme design to illustrate that better outcomes could be achievable, and to quantify the associated downside risk.
3. **Design considerations –** Identification of key design levers that can be pulled to alter outcomes and the associated trade-offs.

The output of this work is contained within the annexes to this report.

1.5 JNC Recommendation

Initial exploratory work has identified further areas for investigation as outlined within this report. The Conditional Indexation Sub Group (CISG) recommends continued exploration of Conditional Indexation in line with the CISG terms of reference.

2 Scope and Purpose

2.1 Introduction

UCU and UCEA have been working with support from the USS Trustee to consider how to achieve greater stability in the Scheme over time, reducing the volatility in contribution rates and benefits seen in recent years.

As part of this work, it was agreed to explore CI benefit design options, which could potentially support the drive towards greater stability. CI is a broad term, and we explain in more detail within this report what it is, and what it is not.

A working group of the Joint Negotiating Committee (JNC) has been tasked with taking forward discussions on stability (the Stability Working Group (StWG)). This group considered some initial analysis to show possible outcomes of a high-level CI design.

Based on the results it recommended that a further working group of UCU and UCEA representatives be established (the CISG) to focus on how CI could work and whether it may be a concept that should be explored in more detail.

2.2 CI context

CI is a defined benefit pension like the existing USS Retirement Income Builder. The key difference is that a portion of future annual 'cost of living' increases (often referred to as 'revaluation' pre-retirement and 'indexation' post-retirement, but for simplicity the term 'indexation' in this document covers both aspects) that would ordinarily be applied to the future benefits members build up are instead conditional on the scheme's funding position.

CI designs include a broad suite of options depending on which elements of annual increases are made conditional (i.e. whether pre-retirement, post-retirement or both), what level of increases are targeted, and whether a minimum level of increases is guaranteed.

CI introduces additional complexity and could increase risk for scheme members by reducing certainty. But CI also has the potential to deliver improved member outcomes and greater benefit and contribution stability. So a key part of exploring CI is understanding these trade-offs and whether they are, on balance, acceptable or not.

For the avoidance of doubt – any change would be forward looking, no change would be made to benefits already accrued or how they are increased.

2.3 Scope of the work of the CI Sub-Group (CISG)

The work of the CISG is exploratory with its remit set out in a terms of reference, a copy of which can be found in Appendix I of this document. The scope of the CISG is specific to this work and focused on the exploration of Conditional Indexation vs the status quo of the existing benefit design.

Broader issues impacting stability and benefit design (for example valuation methodology) are being considered by the StWG and are outside of the scope of the CISG. The work on CI is intended to be complementary rather than an alternative to this work. In particular, an appropriate valuation methodology and clarity on how this would impact outcomes is critical to the success of CI.

2.4 Purpose of the report

The CISG plans to provide substantive updates through two reports due to be published in 2025. This is the first of those reports and provides an interim update on progress, including whether it is appropriate to continue the exploration of CI and highlight areas for further exploration. The second report expected in October 2025 will be more detailed and allow for a much deeper discussion with members and employers.

Appendices

A. Provision of conditional benefits in other jurisdictions

B. How Pension increases could be granted and funded within CI

C. Modelling: Conditional Indexation Outcome Modelling

D. Modelling: High Level Overview of Modelling Approach

E. Modelling: Outcomes and Conclusions

F. Further areas to explore for October report

G. Method and assumptions

H. Modelling further examples

I. CISG Terms of Reference

*The modelling work in the appendices to this report ("**Work**") was provided by Universities Superannuation Scheme Limited (the "**Trustee**") in its capacity as the sole corporate trustee of the Universities Superannuation Scheme. The Trustee is not an actuary and cannot provide actuarial advice. Therefore, Technical Actuarial Standards do not apply to the Trustee or to the provision of this Work.*

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Appendix A – Provision of Conditional Benefits in other Jurisdictions

Introduction

Conditional benefits are provided by pension funds in some countries outside of the UK. We have given some initial consideration to their experiences to see what we can learn from them.

Two jurisdictions that have widespread and differing experience of conditional benefit structures are Canada and the Netherlands. In Canada, DB continues to be the predominant source of retirement savings, with CI having delivered stable outcomes for many of Canada's largest schemes. Conversely, the Dutch approach has encountered significant problems. More information about both jurisdictions is provided below.

Whilst it is informative to look at international schemes' experiences, there are inevitably some limitations on the usefulness of these comparisons, because:

- The funding regime and legal and regulatory context within which international schemes operate is typically different to the regime USS operates under in some important respects. For example, schemes in some jurisdictions may be able to fund on a less stringent basis.
- For a variety of reasons, including scheme design and regulatory context, the part of an individual's pension benefit that is conditional varies by jurisdiction. For example, in Canada it is typically only inflation protection in retirement that is conditional. Whereas elsewhere, it may be pensions in deferment that are subject to conditional inflation protection.
- Membership profiles and benefits are also different across different schemes and jurisdictions. For example, some Canadian schemes also provide health and dental insurance as well as pension benefits[2].

All that said, we still believe it is helpful to consider international experience, as long as this is done with sufficient caution taking into account the different regulatory, contextual and other factors

Conditional Benefits in the UK

To date there has been limited direct experience of CI benefits within the UK for two key reasons:

Post-retirement: Benefits accrued after 1997 receive indexation in retirement at a level prescribed by legislation (these requirements were softened in 2005 to inflation up to 2.5%).

Pre-retirement: Historically the vast majority of DB pension schemes in the UK have been linked to the final salary of members, providing limited ability to flex indexation.

This provides two key windows to draw experience from; prior to 1997 before indexation in retirement was mandatory and, post 2005 once these requirements were softened and alternative forms of pre-retirement indexation (such as CARE) were more commonplace. Pre 1997, there were limited requirements to provide indexation on benefits and many schemes provided no guaranteed increases on benefits in payment. In practice, a number of the schemes granted discretionary increases based on (amongst other factors) the affordability of such increases.

2 For example, health and dental insurance are amongst the plan benefits at B.C. Municipal Pension Fund.

A key difference between this discretionary approach compared with CI structures seen around the world in more recent times, is that the conditions under which discretionary increases would be granted were generally not documented and would be entirely to the discretion of either the Trustee or sponsoring employer. In practice this has driven very different outcomes across otherwise similar schemes with some Trustees and sponsors granting discretions and others not.

Post 2005, there are fewer data points to consider because of the significant contraction of private sector DB provision. We are aware of a small number of schemes that offer indexation (either pre or post retirement) dependent on scheme funding, however it is hard to draw general conclusions as:

- There is limited information in the public domain as to the success (or otherwise) of the structures, and the impact that this has had on member or scheme outcomes.
- The scale of these schemes is significantly smaller than the USS.

As such, whilst it is useful to explore the reasons for limited adoption and parallels to CI within the UK, there is arguably more to be drawn from international comparisons.

The Canadian experience

Conditional benefits are generally regarded as working well in Canada. Six out of the top ten schemes in Canada[3] when judged by asset value have implemented conditional benefit structures. These are Ontario Teachers' Pension Plan (OTPP), Ontario Municipal Employees' Retirement System (OMERS), Healthcare of Ontario Pension Plan (HOOPP), B.C. Municipal Pension Fund (Municipal), B.C. Public Service Pension Plan (BCPSPP) and B.C. Teachers Pension Plan (BCTPP). OTPP, OMERS and HOOPP are also part of the so called 'Maple 8'[4].

Across Canada there are c2.4 million members in conditional benefit schemes and over CAD $700bn of assets invested in such schemes[5]. This represents around a third of the assets under management in Canadian pension funds[6].

In general, these schemes provide conditional indexation on post-retirement benefits. We have provided a high-level summary of the six Canadian schemes referred to above in Table 1 below.

As noted in Table 1, OMERS automatically grants 100% indexation every year, until they decide not to. With the exception of Municipal which capped its indexation award at 2.1% in 2019 and 2022, the other five schemes have each made indexation awards equal to 100% of Canadian CPI since 2015, although as noted in the Table 1, OTPP initially made lower awards in 2015, 2016 and 2017. Each of these schemes, except OMERS[7], is also fully funded.

Some of the Canadian CI schemes have funding policies that provide pre-agreed guidelines for what should happen, and the levers that can be pulled in different funding scenarios (e.g. if the scheme is in significant surplus or deficit or if the scheme's funding means it isn't possible to award target indexation based on the current benefit structure and contribution rate). These can help improve transparency and give members and employers an indication of the likely outcomes in different scenarios. Such funding policies are typically guidelines rather than binding requirements, with the relevant decision-making body retaining discretion to decide the right outcome at each valuation.

3 As published in Benefits Canada's 2024 Top 100 Pension Funds Report.

4 The Maple 8 are the eight largest public sector pension funds in Canada.

5 Data taken from scheme annual reports published for valuation dates between 31 August 2022 to 31 August 2024.

6 Fitchratings.com reported that as at 31 December 2023 Canadian pensions funds managed approximately CAS $2.1 trillion

7 OMERS is currently 98% funded.

Table 1 - Summary of the Canadian schemes

	OTPP	OMERS	HOOPP	Municipal	BCPSPP	BCTPP
Date scheme started	1990	1962	1960	1939	1939	1921
Date CI was introduced	2010	2023*	2006	1980s	2000	2001
No. of members (nearest '000) at last valuation date	343,000	640,000	479,000	446,000	158,000	107,000
Current Indexation target (Canadian CPI) Subject to maximum below	100%	100%[8]	100%	100%	100%	100%
Maximum annual increase (where a figure is given it indicates a cap)	8%	6%	10%	Variable "COLA cap" as set by the Board	Uncapped	Uncapped
Assets under management at last valuation date (CAD)	$266.3bn	$138.2bn	$123.0bn	$77.0bn	$44.9bn[9]	$38.0bn
Last valuation date	1 Jan 2024	31 Dec 2023	31 Dec 2023	31 Dec 2021	31 Mar 2024	31 Dec 2023
Funding status at last valuation date	110% funded	98% funded	111% funded	105% funded	113% funded	113% funded
Summary of indexation awards since 2015	OTPP awarded 100% Canadian CPI from 2018-2023. It granted 60% 2015, 70% 2016, 90% in 2017 - restored to the level they would have been had 100% inflation been granted in each of these years.[10]	N/A*	100% Canadian CPI awarded each year.[11]	100% Canadian CPI awarded each year except 2019 and 2022 when the award was capped at 2.1%[12]	100% Canadian CPI awarded each year.[13]	100% Canadian CPI awarded each year[14]

**Whilst OMERS has technically introduced conditional benefits, a resolution has been passed which means that it is committed to providing 100% indexation unless and until the Board of its Sponsor corporation pass a 2/3 majority resolution to remove that commitment.*

8 Whilst OMERS has technically introduced conditional benefits, a resolution has been passed which means that it is committed to providing 100% indexation unless and until the Board of its Sponsor corporation pass a 2/3 majority resolution to remove that commitment.
9 BCPSPP's 2024 annual report notes that its last actuarial valuation (as at 31.03.23) showed actuarial assets of $38.0bn
10 Reference to follow.
11 HOOPP's website states "While there is no guarantee that COLA will be provided each year, since 2014, HOOPP has granted this valuable benefit to our retired and deferred members to the maximum allowable (or 100%) for the year based on the Consumer Price Index (CPI)."
12 Compared with CPI of 4.4% in 2022 and 2.2% in 2019. A catch-up has not been subsequently awarded
13 CPSPP's 2024 Annual Report states "To date, the plan has fully funded inflation adjustments."
14 BCTPP's 2023 Annual Report states "Traditionally, COLAs have been granted for the full Consumer Price Index (CPI) increase each year. However, the board may grant a COLA that is lower than the CPI increase."

The Dutch experience

Historically, pensions provided by Dutch employers were operated as defined benefit pensions, with indexation applied each year. However, unlike the UK system, it was possible for pensions already earned to be cut back and/or for indexation to be reduced in adverse funding scenarios. This could apply to both pre-retirement and post-retirement benefits.

Historically, cutbacks/reductions were not typically implemented and as such there was a general lack of awareness amongst members that the cutbacks/reductions could be made.

For many years, the Dutch pension system was viewed as one of the best in the world[15], however similar to many other countries, pensions challenges arose during the 2008 financial crisis when many Dutch schemes reduced indexation and some also made cuts to core pension benefits. Since then many schemes have continued to award no or very limited indexation which resulted in a growing sense of disquiet amongst members. This appears to be one of the key drivers for the Netherlands passing laws to implement wide ranging pensions reforms, which include moving away from defined benefit pensions, towards DC and Collective Defined Contribution (CDC) pensions.

In 2011 the OECD published a working paper[16] on the Dutch Pension System that provides contemporaneous views on the challenges faced by the sector at this point.

The paper highlights the change in funding in the Dutch pension sector following the 2008 financial crisis and the impact this had on members and their benefits. Under Dutch legislation, the funding ratio (the ratio of the Scheme's assets to the liabilities) drives the ability to grant inflationary increases to benefits. Lower funding results in lower increases. Importantly the liabilities are measured by reference to the benefits accrued with no allowance for any future increases. In other words, a position of 100% funded, would mean, all else equal, that future increases are not affordable.

The fall in funding ratio in Dutch schemes from end 2007 to early 2009 was on average from 144% to slightly above 90%. This meant that broadly, schemes went from being able to grant full inflationary increases, to increases ceasing and schemes requiring additional contributions to recover to legal minimum levels of funding of 105%. Within the Dutch system, no inflationary increases are payable if funding is at or below the legal minimum levels.

The rapid change in the funding ratio was driven by a funding and investment mismatch whereby legalisation prescribed how liabilities should be measured, namely using a market implied discount rate issued by the financial authorities based on the interbank swap curve whilst most schemes held a significant amount of equity investments (40%). In the financial crisis both interest rates and equity values fell, leading to the funding ratio being hit by both. To protect notional benefits many schemes reacted by reducing their equity exposure and so missed out on the equity rebound when it came. The overall outcome was an inability of schemes to grant inflationary increases due to their funding ratio and in some cases the need to cut existing benefits to meet the regulatory requirements.

15 https://info.mercer.com/rs/521-DEV-513/images/MMGPI%202019%20Full%20Report.pdf

16 https://www.oecd.org/en/publications/making-the-dutch-pension-system-less-vulnerable-to-financial-crises_5kgkdgg5fxd3-en.html

Some of the challenges with CI that the Dutch experience highlights include:

- It is important that members understand the conditional nature of their benefits, and this is communicated clearly to manage shock and disquiet if full indexation is not granted;
- Sustained payment of full indexation may create a greater sense of certainty than is truly the case. This can create inertia to continue to award indexation beyond the point it is truly supportable by scheme funding making subsequent cuts more severe than may have been required otherwise;
- It is important to have a clear plan for coping with stress scenarios, and how to return to target indexation. This includes the way in which recovery plans are set; and
- Regulatory constraints including on valuation methodology and their intersection with member benefits need to be appropriate for stability and clearly understood and communicated.

Key themes

There is limited comparable experience to draw on within the UK, and consideration needs to be given to the risks associated with this. Insight can be drawn from the operation of CI around the world, which highlights the importance of a number of themes being explored by the CISG, in particular the need for:

- Clear communications: The need for excellent communications to build trust and transparency and to ensure that members and employers fully understand which elements of pension benefits are guaranteed and which are conditional and how this impacts the value of member benefits;
- Clear governance: The importance of clear governance so that there is clarity on which body takes each of the critical decisions in relation to benefit design, valuations, awarding conditional benefits, setting contribution rates, setting investment strategy etc;
- Appropriate funding target: If the intention is to be able to award the conditional benefits the majority of the time, it is important that the scheme is designed and funded in a way that makes that more likely than not. This needs to consider the regulatory framework with a valuation methodology that helps achieve the overall aims; and
- Contingency planning: That consideration should be given to having a funding policy or equivalent so that there is a clear protocol for what could happen in different funding scenarios and the levers that might be pulled if the current funding position means that target indexation awards cannot be made on the current benefit structure at the current contribution rate.

Next Steps

We will be continuing to consider the experience of international schemes and the lessons we can learn from their experiences ahead of publishing our more detailed report in October.

Appendix B - How Pension Increases could be Granted and Funded within CI

The level of pension increases awarded under a Conditional Indexation (CI) scheme is dependent on the scheme's funding position. Therefore, the process for funding for, and subsequently determining, the increases to be awarded is a key part of the design of the scheme.

The mechanisms used to determine increases are a key driver of intergenerational fairness. Awarding increases more quickly than funding allows is unsustainable, awarding increases more slowly could lead to members receiving lower benefits than affordable.

The mechanism used for determining increases also needs to dovetail with the funding approach.

At this early stage, the CISG is still exploring options for how this process might operate. Key areas to consider include:

1. How the scheme will assess the funding of the scheme and the level of increase to be granted in a given year;
2. The timing of this assessment;
3. How increases will be funded for (including how to respond to both surpluses and deficits); and
4. The balance of powers between employers, members and the Trustee.

There are a range of approaches that could be taken in these areas which would be subject to relevant legislation.

At this stage we set out an example framework and how this could interact with the UK's pension framework and statutory requirements. We do not extensively consider how surpluses and deficits would be addressed which would form part of the next phase of investigation.

Pension increase assessment

At regular intervals there would need to be an assessment on the level of increase that could be granted. The design of this assessment is crucially important as it drives important trade-offs between:

- The overall level of benefits members receive
- The stability of increases from one year to the next
- The volatility of contributions
- Taken together, the assessment therefore needs to consider both:
- The **affordability** of any increase – is the scheme sufficiently well-funded that the granting of the increase does not jeopardise the security of accrued benefits in the short term.
- The **sustainability** of any increase – do we expect scheme funding to be sufficient to support a given level of increases in the long term (and therefore stable and sustainable).

In broad terms, an approach that permits higher increases to be awarded will introduce more volatility to contributions and indexation. There is an important balance to strike, as an approach that prioritises stability over all else – thereby leading to a slower distribution – could lead to surpluses arising over time that could have otherwise been distributed.

As such there is a tension between what might be affordable in the short term, and what is sustainable over the medium to long term.

One approach would be to consider each of these elements separately in two tests as follows:

- A **sustainability** test[1]: to assess the level of increases affordable now and in future; and
- An **affordability** test[2]: to assess if members' guaranteed benefits are sufficiently well-funded after applying the next target increase.

In addition to the tests to determine pension increases, the scheme would need to complete an actuarial valuation at least every three years. An actuarial valuation would carry additional work and time relative to the tests (including in respect of further advice that the Trustee would be required to take, as well as extra documentation to be produced). For simplicity, we have therefore assumed for the purpose of this document that the tests would be a separate exercise from the actuarial valuation. We recognise that in reality the two areas of work intersect, and further exploration will be needed here in due course.

Sustainability test

The sustainability test would be intended as the primary driver of the increases granted under CI. In broad terms it would seek to assess whether a given level of increases is expected to be sustainable over time.

As with the current actuarial valuation, this would involve a comparison of the scheme's assets and liabilities, but this could be very different from the current approach. Three key areas that would need to be considered are:

- The levels of prudence in the various assumptions;
- The period over which the increases are valued (e.g. in perpetuity or over a finite period); and
- The liabilities and assets used (e.g. the value at the date of the test, or allowing for a projection allowing for future benefits and contributions).

For example, for the modelling in Appendix E, the assets and liabilities used in the sustainability test at any particular date include allowance for future expected benefits and contributions in respect of the membership at that point in time. Other formulations, such as looking at the effect on only the existing benefits, or considering projected funding positions, would be possible.

The assumptions for this test could be "best estimate", i.e. without prudence. The example modelling uses best estimate assumptions with a dual discount rate approach.

The structure of this test will be considered further as part of the next phase.

[1] Previously referred as Test A in USS public CI modelling 2023
[2] Previously referred as Test B in USS public CI modelling 2023

Affordability test

The affordability test assesses whether the guaranteed benefits that members have accrued are sufficiently well funded post the award of the next increase.

As a CI scheme would likely operate under Defined Benefit (DB) funding legislation, there would be the need to consider how the DB funding requirements are met post any increase both for the sound operation of the scheme and to help satisfy the Trustee's fiduciary duty on protecting the security of the guaranteed accrued benefits.

Similar to the process taken in an actuarial valuation, this means comparing the scheme's asset value with a prudent value of the benefits built up. This test would check on whether the scheme is sufficiently well funded to meet the statutory requirements after granting the next increase.

For it to dovetail with the approach required in the triennial funding valuation, it would need to use prudent assumptions. However, it would only need to consider the value of the guaranteed future increases rather than all expected future increases. This gives significant flexibility relative to the current benefit structure. If this test is not passed however, the scheme would likely not be able to grant the full target increase (as granting such an increase would create a deficit).

Assessing the prudent statutory funding requirements in its own separate test, adds complexity but gives greater flexibility than using a single test.

Outcome of assessment

Provided the affordability and sustainability tests are passed, target increases would be granted. If target increases cannot be granted in full, the increase would be restricted such that both tests can be passed. Once increases are granted, they become part of the guaranteed pensions.

These guaranteed pensions cannot be reduced, so the worst outcome that the tests could lead to is no increase on pre-retirement pensions, and an increase of 2.5% (or CPI if lower) for pensions in payment as that is a statutory requirement. If there have been previous years in which target increases were not granted, but the scheme's funding position has since improved, the tests could lead to "catch-up" increases being granted.

Timing of tests

Pension increases in USS generally apply each April, based on the preceding September's CPI. In deciding on the timing of tests, there is a balance to be struck between:

- Doing the tests as early as possible to give members as much certainty as they can over forthcoming increases (i.e. maximising the time between the test and the award of increases); and
- Doing the tests as late as possible to reduce the chances that the funding position subsequently changes in a way that would have led to a materially different outcome (i.e. minimising the time between the test and the award of increases).

In practical terms the exact timing will also depend on the extent to which the assessment is a mechanical test as opposed to the result of discussions and negotiations between stakeholders and the Trustee. The more discussion envisaged, the more time that would be required within the timeline.

As such, this will need to be considered once the mechanics and governance of the assessment are known, but an example approach that envisages an annual assessment is set out below.

This example considers annual tests, rather than an approach where pension increases are set less frequently. The advantage of this is that the tests, and hence the increases, would reflect the scheme's current funding position. Pension increases in USS generally apply each April, based on the preceding September's CPI. It would be natural to carry out the tests based on the position at a 31 March scheme-year end, but as the tests would not be instantaneous, the tests would determine the *following* year's increase. So, for example, a process for doing the tests early could look like:

- **31 March:** Scheme year end. Effective date of test for following year's increase.
- **Summer**: Tests carried out, proportion of following April's increase determined (relative to target)
- **Summer**: Any relevant discussions/decisions taken.
- **September**: CPI value published, used as basis for April's target increase. Figure confirmed to members.
- **1 April (following year)**: Increase granted based on prior year's test

Whatever approach may be adopted, it is important to consider in detail how this would be implemented to avoid challenges that could arise from large intra-year changes in indexation.

Scheme funding

Under a CI arrangement the scheme would still be required to undertake triennial valuations. There would be two main assessments:

1. The value and contribution requirements of the guaranteed benefits, assessed on a prudent basis (i.e. analogous to the status quo and compliant with the DB funding legislation); and

2. The value and ongoing contribution requirements of the target benefits. The basis for this assessment would be agreed between the parties and could use alternative, more optimistic assumptions than required for the guaranteed benefits.

Whilst an assessment of the future guaranteed benefits (without indexation) in line with the regulatory requirements would broadly dictate the minimum level of contributions required, in practice a higher level of contributions is likely required to:

- Ensure that target benefits are achievable rather than ambitious; and

- To establish a stable contribution rate that smooths the volatility relative to the statutory minimum to meet the future guaranteed benefits.

Although separate work is ongoing to consider stability and valuation methodologies, inevitably there will be circumstances under which deficits and surpluses arise. Areas that need to be considered in a more detailed design include:

- What happens if there is a deficit? In particular what is the balance between using increased contributions vs reductions in indexation to bridge the gap; and

- What happens if there is a surplus? How much of this should be distributed through higher indexation and/or reductions in contributions, how much should be used as a buffer?

Balance of powers

Whilst the Trustee has a statutory role in valuing the guaranteed benefits under both the scheme rules and under the law, there is more flexibility in roles and responsibilities for both the employers and members in valuing target benefits.

This balance of powers as well as the overall decision-making structure would need to dovetail with the overall approach to granting increases and funding. This might include:

- Who has the power to agree the funding basis for target benefits;
- Who has the power to define the various tests;
- The extent to which the approach is entirely mechanical vs the ability for discretion to be exercised in awarding increases;
- How this fits alongside the Trustee statutory duties; and
- We intend to explore this in more detail as part of work for the October report.

Conclusions

- The approach to be used for determining whether the annual increases are granted is a key design question for CI;
- Assessing the funding and level of sustainable increases under CI separately from the statutory requirements (i.e. using two separate tests) may help maximise the flexibility available which in turn could help achieve greater stability;
- The Trustee will need to be comfortable that its fiduciary duties are carried out (in particular with respect to the guaranteed benefits);
- A shared understanding and clear articulation of the motivations for CI and the associated benefit design are important;
- Clear communications, transparency and trust are critical for membership and stakeholder decision making;
- The approach to funding, valuation methodology and granting increases will need to dovetail to ensure stability; and
- There are a number of trade-offs within any design of test and funding approach that need to be carefully considered.

Appendix C – Conditional Indexation Outcome Modelling

Overview

As explored earlier in this paper, a key feature of CI is that members can experience a range of potential outcomes depending on actual experience each year, rather than receiving guaranteed increases on accrued benefits.

Of course, recent history has illustrated that even without CI, benefits (and costs) can change reflecting valuation outcomes and the financial health of the scheme.

As such, alongside considering how CI would fare in a given scenario, it is also important to consider how the existing structure may have fared and what this would mean for members.

Key outcomes to understand are:

- In what proportion of cases do we expect members to achieve better outcomes from CI than the status quo (and how much better)
- In what proportion of cases do we expect members to achieve worse outcomes from CI than the status quo (and how much worse)
- How might the existing benefit structure have fared in these scenarios

The following sections of this report explore three illustrative designs that target higher benefits than the existing structure and show potential outcomes and trade-offs.

We set out:

Appendix D: A high-level overview of the modelling approach taken for this report

Appendix E: The output of the modelling and conclusions

Appendix F: Areas for potential further exploration in the October report

Appendix G: A more detailed overview of the modelling approach and assumptions

Overview of modelling conclusions:

In short, the key conclusions from the modelling are as follows:

- The illustrated CI designs are expected to deliver 10-20% higher benefits than the existing benefit structure on average.
- There is a range of possible outcomes. In around 10% of scenarios, CI is expected to deliver worse outcomes than the existing benefit structure (i.e. compared to a baseline where existing DB benefits are unchanged).
- However, in the vast majority of these scenarios, the existing benefit structure would be under funding pressure which would likely lead to higher costs.
- In scenarios where CI delivers higher benefits than the existing structure, members can still experience volatility in indexation from year-to-year. On average, around 1 in every 7 years is paid below target (although this can vary significantly).

Appendix D – High Level Overview of Modelling Approach

Core approach modelled

As set out in Appendix F there are a broad range of features that should be considered as part of designing and agreeing CI structures, as well as considering how these structures would fare under different conditions and at different points in the scheme lifecycle.

For the purposes of this initial exploration, we have modelled various key aspects of the Target Benefit Design (namely target indexation and accrual rate). Importantly, we have not sought to explore all potential features of CI and instead illustrated a simplified core approach to CI.

A detailed description of the approach taken to this modelling is contained in Appendix G, but the key assumptions we have made are:

- Fixed contribution rate at 20%.
- Fixed investment strategy[3].
- Indexation pre and post-retirement is conditional on funding (subject to statutory minimums)[4].
- Removal of the "soft-cap" of indexation on all CI benefits.
- Cross-subsidy allowed between accrued benefits and future CI benefits, with entirety of existing surplus available to support CI.
- 2 test approach for determining level of CI payments (more detail provided below).
- A "catch-up mechanism" that awards additional indexation in later years (when affordable) in scenarios where indexation has been awarded below target.
- No distribution of surplus, or indexation above target.

This approach has been adopted, in part, for ease of modelling and exploration at this stage. It in no way suggests that it is an optimal approach and it would be for the stakeholders to decide the ultimate design and contribution structure. We intend to explore the impact of varying these assumptions and design features as part of the October report. We also discuss, in broad terms, the potential impact of key features of the simplified elements later in the paper.

Illustrative Target Benefit Designs

The modelling within this paper explores three alternative target design structures (colour coded throughout for ease):

Benefit Design Lever	**Design 1**	**Design 2**	**Design 3**
Target Pre-retirement indexation	**CPI + 1%**	CPI	CPI
Target Post-retirement indexation	CPI	**CPI + 1%**	CPI
Accrual rate	1/75 pension 3/75 Lump sum	1/75 pension 3/75 Lump sum	**1/65 pension** **3/65 Lump sum**

In practice, a CI design could seek to vary these either in isolation or in combination, or target higher or lower benefit levels than suggested here.

[3] Based on the VIS as at 31 March 2023 – Further details in Appendix.

[4] When benefits are in payment, UK legislation requires that they are increased annually by CPI up to a maximum of 2.5%. This is allowed for within the CI modelling as an unconditional increase, i.e. regardless of the scheme's funding position. There are separate requirements in order for schemes to be auto enrolment compliant that are not considered or modelled in this analysis.

Scenario modelled

The modelling in this report considers how CI might behave from a 'standing start', and how quickly CI liabilities would build up based on the funding position and financial conditions as at 31 March 2023. In practice, it is also important to consider how CI would fare:

- Once the scheme was "steady state" in CI, i.e. when the majority of liabilities within the scheme are CI rather than traditional DB.
- In a variety of surplus and deficit scenarios, rather than just the existing funding position.

We intend to explore these dynamics further in the October report.

Modelled approach to determining CI payment level: 2 Test Approach

As described in Appendix B of this report, the modelling uses a "2 test approach" that considers the affordability and sustainability of the targeted level of indexation. More specifically:

- **The Affordability Test:** assesses if members' guaranteed benefits are sufficiently well-funded after applying the next target increase. Within the modelling, this is considered as a prudent assessment of the accrued guaranteed benefits, compared against the asset value at the time of the test.

- **The Sustainability Test:** assesses if the level of proposed increase is supportable now and into the future. Within the modelling, this is considered as a best-estimate assessment of the accrued and future target benefits, compared against the asset value at the time of the test plus the value of future expected contributions.

Side by side:

	Affordability Test	**Sustainability Test**
Benefits considered	Guaranteed	Target
Indexation period	Single year	Perpetuity
Assumptions	Prudent	Best estimate
Liabilities	Accrued benefits only	Accrued plus future benefits
Assets assessed	Current assets	Current assets + Future contributions

For the purposes of this modelling, a test is deemed to be "passed" in a given year if it would permit full indexation at target in that year. Further detail on the modelling approach of these tests can be found in Section D.

Stochastic modelling

To consider the likelihood and spread of potential outcomes, we start with the results of the latest completed triennial valuation as at 31 March 2023, and project 5,000 simulations of future economic scenarios from this point.

The results in absolute terms are sensitive to initial conditions and assumptions, but relative comparisons between different benefit structures would be less sensitive to these changes.

As such, whilst stochastic modelling can be a useful illustrative tool to consider the viability (or otherwise) of CI, it is important that it is considered alongside other modelling (e.g. scenario modelling) and softer considerations. For the avoidance of doubt, it is not suggested that stochastic modelling is used as the formal basis of the CI indexation tests.

Appendix E – Modelling: Outcomes and Conclusions

The three illustrative designs are considered through two lenses:

- **Member level outcomes:** How outcomes could vary under CI vs the existing benefit structure for two example members, and how this might "feel" for those members.

- **Scheme wide outcomes:** Taking members together, on average, across a range of scenarios, how do member and scheme outcomes vary under CI vs the existing benefit structure.

Member level outcomes

The two example members are:

- **Member 1:** A 36 year-old active member with 5 years' service accrued under the current structure
- **Member 2:** A 56 year-old active member with 25 years' service accrued under the current structure

The example member analysis aims to show the potential range of outcomes for these members relative to the existing benefit structure [1].

The charts show the distribution of the ratio between the pension p.a. under the given CI benefit structure over the pension p.a. under the existing benefit structure in each simulation. This can be thought of as the accrued pension an active member will see on their benefit statement each year, or the pension a retired member will receive in each year.

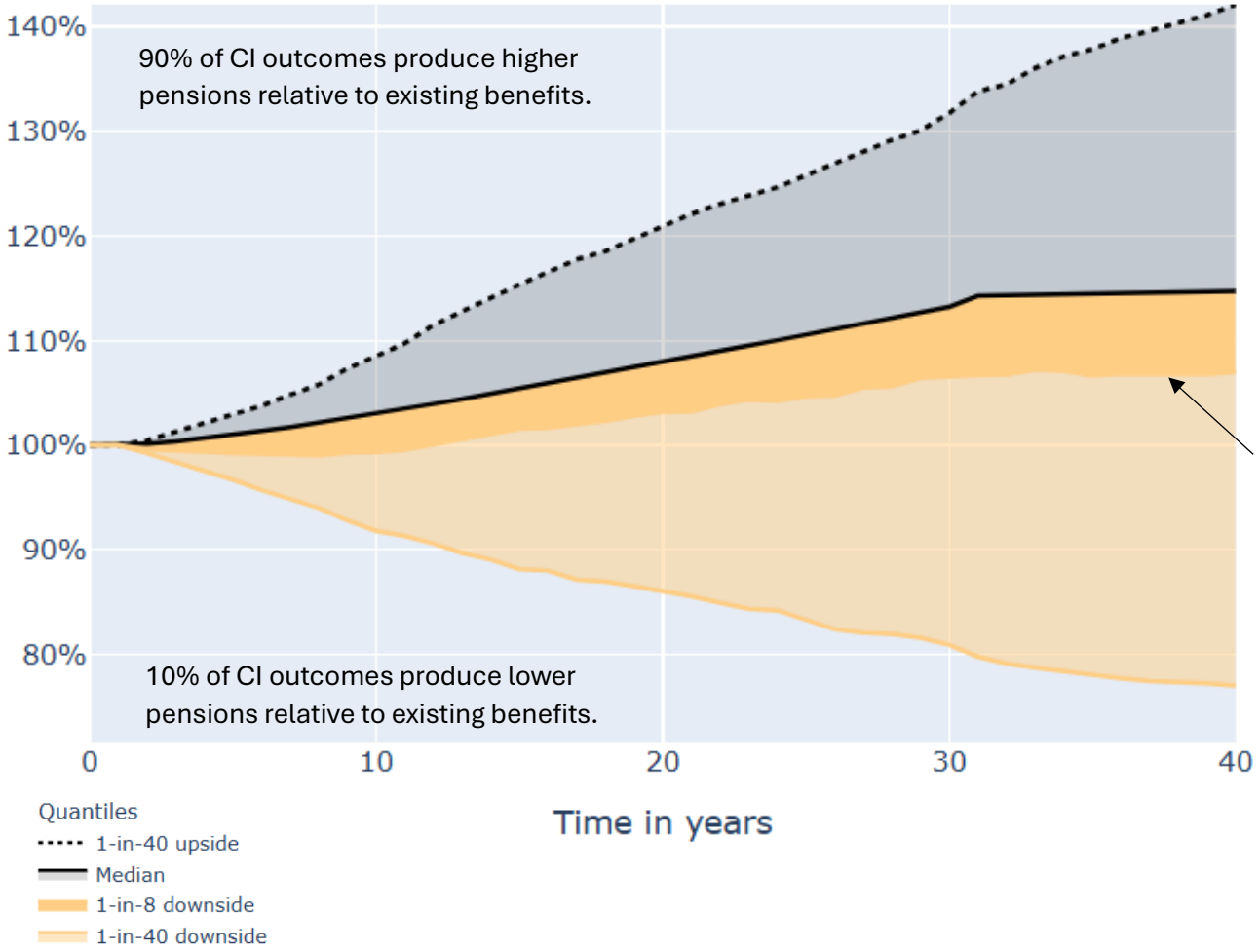
A value of 100% on the y-axis signifies the 'breakeven point' where this member's pension p.a. would be equivalent under CI and the existing benefit structure. We can use the proportion of scenarios in which the ratio is less than 100% as an indication of how likely the member is to be worse off under CI. The analysis shows that Members 1 and 2 would be expected to receive higher benefits under CI, but there are a range of possible outcomes with the risk that benefits could be lower.

We provide a detailed explanation of Member 1 under Design 1, before expanding the analysis to Member 2 and each of Design 1, 2 and 3.

[1] Existing benefit structure of 75ths accrual, unconditional soft-cap pension increases both pre and post retirement. The example members are assumed to have different levels of benefits already accrued at the inception of the CI arrangement, with Member 1 and Member 2 assumed to have broadly 5 and 25 years' worth of accrued benefits respectively.

36-year-old active member under CI Design 1

Pension p.a. relative to existing benefit



1-in-40 upside = 142%

This dashed line shows the potential benefit of uncapped inflation protection under CI in scenarios with extreme realised inflation (where the soft cap in the existing benefit structure can result in significantly lower increases than th CI target). This does not include any further distribution of surplus beyond target increases.

Median = 115%

This black line shows the expectation of higher benefits ur CI. The slope of this line reflects the CPI+1% target for pre retirement increases, with no further proportionate chang once the benefit comes into payment.

1-in-8 downside = 107%

Even in a reasonably significant downside event, a higher benefit would be expected under CI.

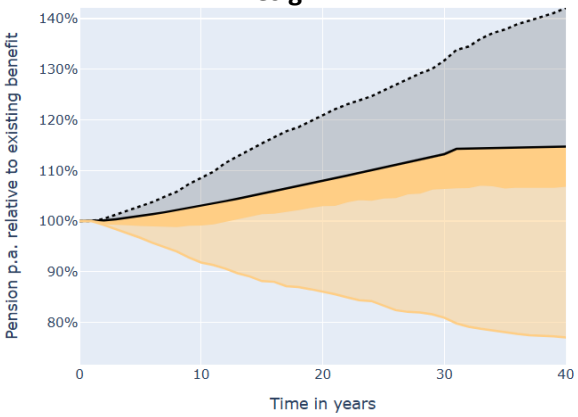
1-in-40 downside = 77%

In extreme downside cases, the member can be materially worse off under CI – compared to a baseline where existing DB is effectively unchanged.

A significant majority of the time, this member's pension would be expected to be higher under CI Design 1

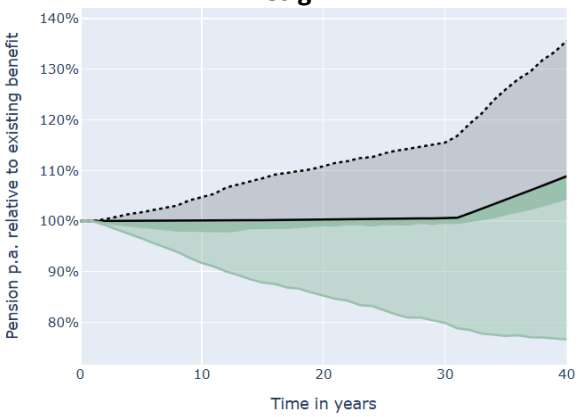
Example Member 1 – 36 Years Old

Design 1



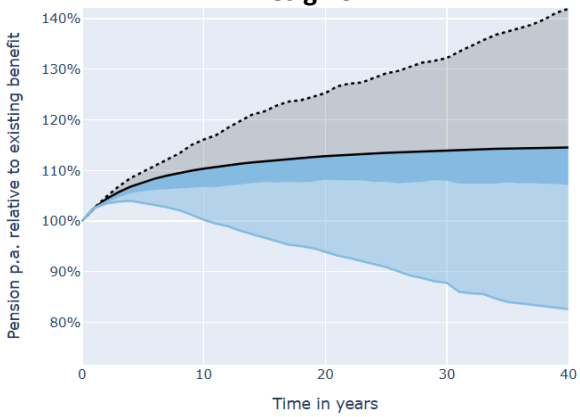
A significant majority of the time, this member's pension would be expected to be higher under CI Design 1.

Design 2



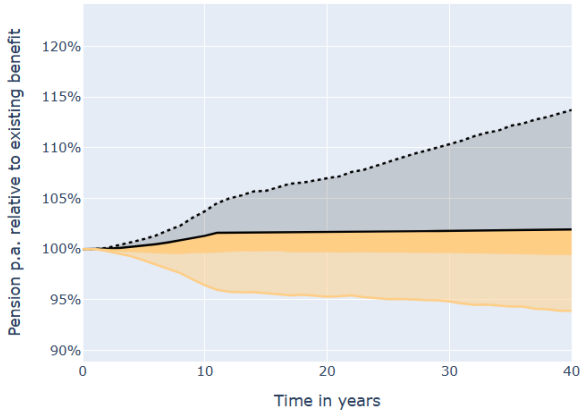
The improvement from CI under this structure comes after the pension is in payment, when target indexation is higher leading to better overall outcomes expected. The extent to which members benefit from this will depend on how long they live during retirement.

Design 3

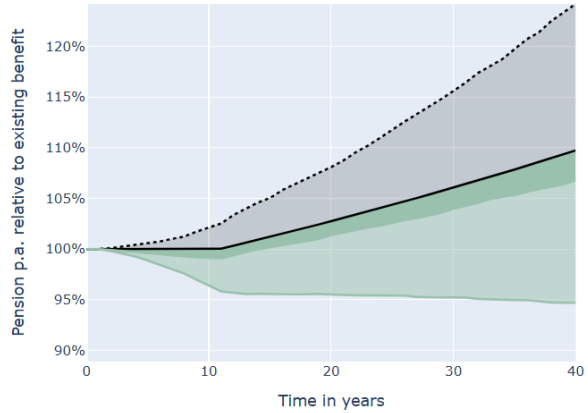


The improved accrual rate under this structure gives this member an earlier increase to their expected pension, with similar long term outcomes to CI Design 1.

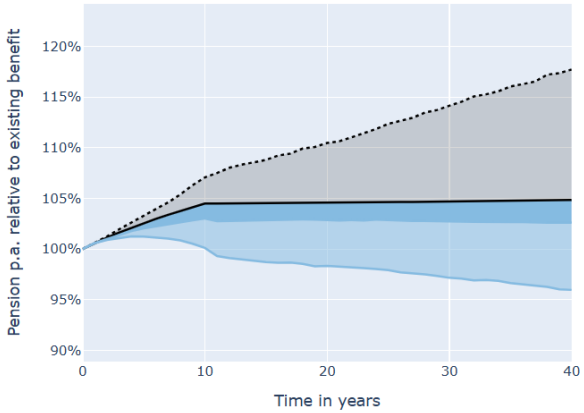
Example Member 2 – 56 Years Old



The narrower cone for this member reflects a higher amount of benefits already accrued, and less CI accrual before their retirement



The narrower cone for this member again reflects less CI accrual before their retirement. The expected improvement from CI continues to grow during the member's retirement due to more generous post retirement indexation under CI.



This member is expected to receive a higher pension under this design than CI Design 1, because with a relatively short period to retirement, the more generous accrual rate is more valuable than higher pre-retirement increases.

Member examples

General Observations

- In all three benefit designs, the expected[2] pension for both example members is higher under CI than the pension that would be received under the current benefit structure.
- Even if experience is worse than expected, CI outcomes are still likely to be higher. The CI pensions are at least the level of the existing pensions in all cases at the 1-in-8 downside level (i.e. the level which would expect to be bettered more than 85% of the time).

- However, there is a spread of outcomes. There are scenarios where pensions under CI would be worse than existing benefits, and these downsides can be material.
- This results from difficult financial conditions, and in these cases maintaining DB for future benefits may also be challenging. This is considered further below in the "Scheme wide outcomes" section. However these downside scenarios play out differently under CI vs the existing structure:
    - Under the current structure, once a benefit is built up, it is guaranteed. The risk and cost of downside scenarios is ultimately placed on the sector and future generations of members.
    - Under CI, absent additional contributions, the risk and cost of downside scenarios would be borne by members, with indexation reduced vs target. Only if funding were to fall below guaranteed levels would additional contributions be required under statute.

- In most scenarios, surplus would be expected to build up over time, which could be used or "spent" in multiple ways in practice (e.g. reducing contributions, increasing benefits, or used to manage/mitigate risk). This modelling does not allow for surplus to be used directly, i.e. implicitly it is held as buffer against bad experience.
- Even in scenarios where CI provides similar or better outcomes compared with the current structure, CI can lead to variability in what increases are granted year-on-year. A worked example which demonstrates this using a particular scenario within the modelling is set out below. Variability does not have to mean worse outcomes than existing benefits however, because of the higher target levels of benefit compared to the current structure and the application of "catch up" indexation. This is explored further in the next example.

[2] Expected pension measured by median outcomes

Differences between designs

The three designs each change an element of the target benefits compared with the current benefits (as well as not applying the "soft cap" when CPI is above 5%). These elements affect the benefits in different ways, leading to expected impacts which vary for different members, as well as affecting the range of potential outcomes. In practice the actual outcomes experienced by members would depend on their own circumstances.

Benefit Design 1 provides higher target **pre-retirement** indexation:

- This has a greater effect on younger members than older members, (who have a longer period to retirement and therefore a longer period over which the higher target could apply).
- The higher indexation target means that there will be some circumstances in which the target is missed but a higher level of indexation is granted than would have been the case for existing benefits.

Benefit Design 2 provides higher target **post-retirement** indexation:

- This means the additional indexation members receive is sensitive to how long members live in retirement (noting that this is always the case within a DB scheme; the longer a member lives, the more they will receive)
- This could be perceived as being more generous to the post-retirement period relative to pre-retirement, as statutory guarantees mean that these benefits would attract some indexation regardless of scheme funding.

Benefit Design 3 increases the **accrual rate**. This can lead to similar expected benefit outcomes to Design 1 (in particular, with younger members benefitting more than older members), but member experience could vary:

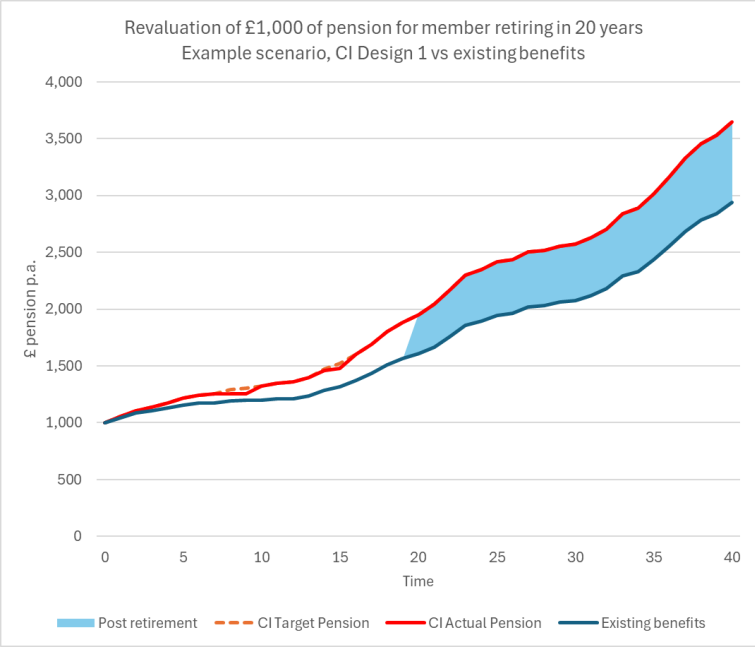
- The accrual rate affects the guaranteed benefits; i.e. members would accrue a higher guaranteed amount with lower variability after this, compared with Design 1 which has higher variability in outcomes due to the greater conditionality.
- The higher accrual rate means that members could still be better off under CI relative to the existing benefits, even if lower indexation is granted than the existing benefits would have had. Members are likely to compare the indexation actually granted year-on-year with increases paid in respect of their existing benefits however.

Example member scenario

The stochastic modelling considers a spread of 5,000 scenarios. To understand how this might feel to members, we consider a single scenario[3].

The chart below compares the indexation and payment of £1,000 p.a. under Design 1 versus the existing benefit approach under 1 of the 5,000 future scenarios modelled. This illustrates that although there are periods where target indexation is not granted, CI can still lead to higher overall benefits.

In this scenario, target indexation is not granted in several years between year 8 and year 15. This is shown on the chart below as the gap between the dotted line (CI Target Benefit) and the solid red line (CI actual benefit). The gap in this example is small and so we have examined the key period more closely in the table below (nb indexation and pensions shown in the table are rounded).



Year	CPI	Indexation for existing benefits	Target CI indexation	Actual CI indexation	Variation from target	CI benefit	Existing benefit
7	-0.2%	0.0%	0.8%	0.8%	*n/a*	£1,253	£1,172
8	1.9%	1.9%	2.9%	0.0%	**-2.9%**	£1,253	£1,194
9	0.2%	0.2%	1.2%	0.0%	**-1.2%**	£1,253	£1,196
10	0.4%	0.4%	1.4%	5.5%	**+4.1%**	£1,322	£1,201
11	0.9%	0.9%	1.9%	1.9%	*n/a*	£1,347	£1,211
12	0.2%	0.2%	1.2%	1.2%	*n/a*	£1,363	£1,214
13	1.6%	1.6%	2.6%	2.6%	*n/a*	£1,398	£1,233
14	4.2%	4.2%	5.2%	4.3%	**-0.9%**	£1,458	£1,285
15	2.7%	2.7%	3.7%	1.3%	**-2.4%**	£1,477	£1,319
16	4.0%	4.0%	5.0%	8.4%	**+3.4%**	£1,601	£1,372
17	4.7%	4.7%	5.7%	5.7%	*n/a*	£1,692	£1,436

The blue highlighted area illustrates the additional amount the member would receive in retirement under CI in this scenario. By time 40 this totals c£10,000 (equivalent to around £500 p.a. over twenty years in retirement).

[3] Scheme wide median outcome for Design 1 is CI providing 117% of existing DB. Across 817 scenarios at median level, the mean number of fails is 3 per sim, the median is 0, with 85% of sims having 4 fails or fewer.

Example member scenario - Commentary

This example scenario demonstrates instances where indexation is missed entirely (in years 8 and 9), as well as instances where partial indexation is granted in years 14 and 15. Note that in year 14, even though target indexation is not granted, the CI indexation granted is still above CPI (and therefore higher than the existing benefit indexation would be).

In this scenario, where target indexations are missed, catch-up is granted shortly afterwards. The periods of missed target indexation are during the member's pre-retirement period, and so it would not have caused them to lose out in £ terms because the pension at retirement had increased back to the target level.

Had conditional indexation not been granted during the member's retirement, the actual pension received might not have kept pace with inflation (noting that during retirement legislation requires that members would receive statutory increases of CPI up to a maximum of 2.5%, which provides some level of guaranteed indexation).

Scheme wide outcomes

One approach to measure outcomes is to consider the total amount expected to be paid out to members over a fixed period of time[4] and see how this compares to what members might expect under the current benefit structure.

This can help illustrate:

- The total expected benefit provision vs the status quo
- The likelihood that members receive more than they expect currently (and how much more)
- The likelihood that members receive less than they expect currently (and how much less)

We also explore:

- How frequently CI pays out at less than target – this gives a sense of volatility along the CI journey and how this impacts member outcomes.
- How the current design of DB might fare under scenarios where CI results in reduced benefits vs the existing structure.

This modelling does not consider any actions that might be taken in practice, by the trustee or the stakeholders and instead assumes the structures are allowed to continue indefinitely.

[4] Modelling considers payments over 60 years in real terms

The following table considers the likelihood that members receive more or less than current benefits, and explores what happens in each of those situations. The narrative in blue is designed to help the reader interpret the table for Design 1, before we draw comparison to the other designs.

	CI Design 1 Pre-retirement: CPI + 1%	
Member outcomes		
Likelihood of members receiving less/more than current benefits	Less than current benefits	More than current benefits
	8%	92%
Expected level of benefit provision	84%	120%
Overall average level of benefits	117%	
CI Outcomes		
Likelihood that catch-up indexation required at some point	100%	57%
Likelihood that indexation below target in any given year	88%	15%
Funding Outcomes		
Existing structure: Likelihood average funding < 80%	93%	2%
CI structure: Likelihood average funding < 80%	54%	<1%

"There is a 92% chance, that members receive more from CI than they might expect from current benefit structure"

"In the 92% of circumstances where members get more than current benefits, members get 120% of their current entitlement, on average"

"Across all scenarios, members might expect to receive 117% of current benefits, on average"

"Even when members receive more than current expectations, there is a c57% chance that members will receive less than target indexation in at least one year and require a catch-up payment"

"Even when members receive more than current expectations, there is a c15% chance in any given year that CI pays out less than full target"

"In the 8% of situations where CI delivers less than current expectations, Current DB benefits have an average funding level below 80% in 93% of scenarios"

"In the 8% of situations where CI delivers less than current expectation, CI would have had an average funding level below 80% in 54% of scenarios"

Design 1 Observations

- Over a 60 year period, Design 1 delivers c17% higher benefits to members than the existing benefit structure.
- Whilst there is a high probability (>90%) that members get more than their existing promise, there is a risk that members get less. We consider each of these scenarios in turn below:

Design 1: In the 8% of scenarios where members get less from CI than the existing DB benefits:

- **There would have been pressure and/or additional cost associated with the existing DB benefit structure**.
  The modelling suggests that in scenarios where members get less from CI, in the vast majority of cases (93%), the average funding for a scheme providing the existing DB benefits would be less than 80%.

- **The pressure on CI funding would be less severe in these scenarios, as indexation can be flexed**.
  In around half of the scenarios where members get less from CI, the average funding of CI benefits is less than 80%.
- These scenarios can look and feel severe to members. The modelling suggests that in the 8% of scenarios where members are getting less from CI than under the current benefits, indexation is paid below target c88% of the time.
    - In other words, in these 8% of scenarios, on average members get less than target indexation 9 out of every 10 years.

Design 1: In the 92% of scenarios where members get more from CI than the existing DB benefits:

- Members do not always receive full indexation at target, with around 57% of scenarios having at least one year where CI indexation is less than target, with catch-up indexation required.
- On average members would receive less than full indexation around 15% of the time (around 1 in every 7 years). This varies by scenario:
    - In around 40% of scenarios members receive full indexation every year.
    - In around 10% of scenarios, members receive full indexation less than half the time – but still receive higher total benefits than they would have received from DB (clearly there would be separate communication and member expectation challenges here).

  This is higher than the 10% of scenarios where members receive less than current benefits (i.e. in around 5% of scenarios, members receive less than target, but higher than current benefits).

	CI Design 1 Pre-retirement: CPI + 1%		CI Design 2 Post retirement: CPI +1%		CI Design 3 Accrual rate: 1/65	
Benefit provision						
Likelihood of members receiving less/more than current benefits	Less than current benefits	More than current benefits	Less than current benefits	More than current benefits	Less than current benefits	More than current benefits
	8%	92%	9%	91%	7%	93%
Expected level of benefit provision	84%	120%	84%	114%	87%	120%
Overall average level of benefits	117%		111%		117%	
CI Test Outcomes						
Likelihood of at least 1 year indexation granted below target	100%	57%	100%	54%	100%	59%
Likelihood that indexation below target in any given year	88%	15%	86%	12%	90%	16%
Funding Outcomes						
Existing structure: Likelihood average funding < 80%	93%	2%	90%	1%	94%	2%
CI structure: Likelihood average funding < 80%	54%	<1%	43%	<1%	65%	1%

Scheme Wide Modelling Observations – themes across all three designs

There are a number of key themes across the three illustrative designs:

- Over a 60 year period, all three designs are expected to deliver around 10%-20% higher benefits to members than the existing benefit structure.
- The risk that members get less than the existing promise still exists with a spread of outcomes in all cases.
- Similar conclusions can be drawn that in these cases, there would have been pressure and/or additional cost associated with the existing DB structure

Comments on differences between Designs

On average, Design 2 (enhanced post-retirement indexation) pays out lower benefits than Designs 1 and Design 3.
Compared with Design 1 and 2, Design 3 (enhanced accrual) has less flexibility in future funding because:

- Under Designs 1 and 2, indexation is enhanced but when funding is poor, the scheme may not actually grant the enhancement.
- Under Design 3, the enhanced accrual is always granted (irrespective of funding) – which puts pressure on CI funding in downside scenarios.

Broader observations

1. The modelling suggests that over the long term, failing one (or both) of the CI tests around 50% of the time is (on average) a break-even point vs the existing benefit structure (i.e. in these cases, members on average receive the same level of total benefit as they would have under DB.) Of course, the indexation under CI would have been far more volatile year to year, and outcomes will differ from member to member.

2. There is a general pattern that where CI pays less than existing DB, there would have been funding challenges had DB been maintained. The above table parametrises this by considering scenarios where average funding is below 80%, but similar patterns can be seen at other funding levels.

   Excluding situations where DB funding is (on average) less than 80%, would suggest that CI could provide better outcomes in 99% of situations. However, this misses an important point. In these downside scenarios, accrued indexation on DB benefits would still be guaranteed, whereas under CI, they would not, and members could receive materially worse benefits absent additional cash contributions.

3. Although the average chance of failing a CI test in any given year is on average c20%, the nature of the failure of these tests differs over time:

   - In early years, the scheme is more likely to fail the affordability test. This is because at this point in time, the vast majority of liabilities within the scheme are still related to the existing benefit structure in the early years.
   - In later years, the likelihood of failing the sustainability test increases, as the proportion of CI benefits within the scheme increases.

   In part, this is a function of the fact that the modelling assumes the ability to cross subsidise between current accrued benefits and future CI benefits. In practice this is a double-edged sword:

   - It allows CI to benefit from the material surplus currently within the scheme
   - It means that CI outcomes in the early years are dominated by funding volatility associated with non-CI benefits.

4. This gives rise to a number of important areas that would need to be explored as part of CI design work that we will consider in the October report:

   - The extent to which funding of existing benefits can and/or should be used to cross subsidise future CI outcomes
   - How CI behaves once it reaches “steady state” – i.e. once CI benefits make up the vast majority of scheme liabilities.
   - How to maximise the chance of a smooth journey to ‘steady state’ from the point at which CI accrual begins.

Appendix F – Further areas to explore for October report

Overview

There are many decisions that would need to be made when designing a CI scheme, which can broadly be broken down into the following categories:

- **Target benefit design**: the rate at which benefits build up, and the target level(s) of indexation
- **Financing strategy**: financing features which drive the level of the scheme's assets, such as what contributions are paid and how the assets are invested, as well as the interaction with the existing arrangements
- **CI mechanics**: the framework for operating CI, including the tests to grant indexation (see Appendix B) and any agreed response to their failure, how "catch up" indexation could operate, how surplus could be distributed, and the governance of the arrangement

Broadly speaking, the higher the target benefits, the greater the burden on the finances of the scheme – which means:

- A lower probability of attaining target benefits; and/or
- Higher contributions are required; and/or
- More investment returns are needed.

There are pros and cons associated with each of the above and these areas will be explored further in the October report as well as considering the effect of the maturity of the CI arrangement (i.e. to what extent the expected outcomes change as CI arrangements mature towards a steady state).

Key features

Of these initial decisions, the key features of a CI scheme are arguably the following:

- Accrual rate
- Target increases
- Contribution rate
- Investment strategy

For each of these features there are a range of values and approaches that could be adopted. The choices made will influence the ability to deliver the target benefits and the potential of 'surplus' to build-up within the arrangement as well as the overall expected stability of the arrangement (ie the potential need to revisit one or more of these features).

The design features affect different aspects of the scheme. The contribution rate and investment strategy affect the level and pace of build-up of assets and therefore ultimately the level and certainty of benefits that can be provided. The accrual rate and target increases affect the level and pace of the build-up of liabilities (and payout of benefits). For a given contribution rate and investment strategy it could be possible to pay the same ultimate benefits to members under different combinations of accrual rate and target increases, depending on how surplus is used.

These key features listed above will need to be explored to develop any CI proposition and will be discussed in detail in the October report. Careful consideration will need to be given between the interaction between new CI benefits and existing benefits.

Several high-level observations are provided below.

Accrual rate

The accrual rate drives the level of guaranteed benefits provided, and therefore all else equal a more generous accrual rate increases members' guaranteed benefits but reduces the level of flexibility, in the overall structure. For a given level of target increases, contribution rates and investment strategy, the higher the accrual rate the lower the probability of being able to deliver the target increases, and the lower the surplus that can be expected to emerge. Higher accrual rates also increase the probability of the contribution rate for future accrual needing to be revisited to ensure that the guaranteed benefits are adequately covered.

Target indexation

Higher target indexation does not affect the level of guaranteed benefits (until the higher increases are granted in practice), and therefore do not affect the minimum contribution requirement for new accrual of guaranteed benefits. For a given accrual rate, contribution rate and investment strategy the higher the target increases the lower the probability of being able to deliver these and a lower level of surplus can be expected to emerge. The target increases could be different for pre-retirement and post-retirement periods.

All else equal, the lower the target benefit, the less generous to members but the more stable the outcome and the more likely that surpluses emerge.

Contribution rate

There is a range of contribution rates that could support a structure with a given accrual rate and given target increases, for a particular investment strategy. The contribution rate could range between a best estimate rate to one with a high level of prudence. The greater the level of prudence within the contribution rate the more likely target increases will be granted each year and the greater the surplus will be built up. Further, the greater the prudence in the contribution rate the greater stability in the structure, with less likelihood of the need to revisit the contribution rate and/or benefits.

All else equal, the higher the contribution rate, the more stable the outcome and the greater the certainty over the ability to grant and pay target benefits.

Investment strategy

Relative to a defined benefit scheme where all benefits are guaranteed, a CI scheme with the same target benefits has greater investment flexibility and more ability to invest in return seeking assets. In the long-term investing in a greater proportion of returning seeking assets should lead to better investment returns and support higher benefits. Being invested in a greater proportion of return seeking assets does lead to greater short-term volatility of the value of the scheme's assets.

Whilst holding a higher proportion of return seeking assets in the long-term would ultimately be expected to be able to deliver better benefits, the higher volatility could lead to a higher probability of not being able to provide target increases, particularly in the short-term.

Greater investment returns could support the ability to pay out higher target benefits, but introduces more potential volatility in member outcomes.

Other areas to consider

There are also several other areas that need to be considered, including the following, some of which will also be explored further in the October report:

- The detailed approach for the CI tests and sensitivity to the basis used
- Approaches to help manage/mitigate the impact of downside scenarios on members and scheme financing.
- Whether CI benefits are provided in the same section as the current defined benefits
- Whether an existing surplus can be used by the CI section
- The planned response to failure of the target increases test
- The process for catch-up of target increases missed
- How and when surplus is used
- Circumstances in which contributions are reviewed and changed
- Valuation methodology and frequency of valuations (see Appendix B)
- Salary threshold
- Post-retirement guarantee on increases
- Death in service and ill health benefits
- Detailed approach to compliance with Auto enrolment regulations

Appendix G – Method and assumptions

Modelling assumptions and approach

The modelling results shown in this paper have been provided by USS, who have provided the following notes accompanying the results.

Overall approach

The modelling is based on 31/3/23 market conditions, in line with the 2023 valuation and using the same central assumptions for investment returns over time. A set of 5,000 simulations, representing different paths of financial markets (modelled for up to 60 years from 31/3/23, in annual timesteps) have been used.

Assumptions

- Key risk and return statistics from the modelling are set out below:

Year	Real Return, Years 1-10	Real Return, Years 11-30	Real Return, Years 1-30	Standard Deviation (10 Year Horizon, Annualised)
Equities	3.9%	4.9%	4.5%	18.5%
Property	1.9%	2.1%	2.0%	17.8%
Other Fixed Income	2.2%	2.5%	2.4%	3.4%
LDI	0.8%	0.5%	0.6%	10.3%
Cash	1.1%	0.6%	0.8%	2.7%

The returns shown are the means of the annualised return over CPI (geometric excess) for each asset for each period. The standard deviations are the standard deviation of the 10-year annualised absolute return. These figures are outputs from the modelling, and differ slightly from the expected returns quoted as part of the 2023 valuation due to this modelling using annual, rather than monthly, timesteps. The underlying assumptions are the same however.

The dynamics which drive returns and other economic conditions in the simulations are state and time-dependent, so that each of the 5000 scenarios effectively has its own observable covariance matrix over a particular simulation horizon. This allows the model to capture complex path-dependent behaviours and more extreme tail conditions than would be the case with a conventional log-normal model of returns. As such, there is no single specified covariance matrix from which the return simulations are generated.

- The investment strategy is based on the asset allocations used in USS's Valuation Investment Strategy as at 31 March 2023, with these allocations held constant across the simulations and through time. This is slightly different from the actual Valuation Investment Strategy, which maintains a particular hedge ratio.
- The financial assumptions used to determine the scheme's liabilities in the various tests vary according to the projected market conditions. They are set as follows (nb "Gilts" here refers to the gilt yield curve in force at the projection point under the simulation in question):
    - Best Estimate discount rates:
        - Pre-retirement: Gilts+4.38% initially, with changes to reflect market conditions as each simulation evolves
        - Post-retirement: Gilts+1.29%

      These rates are slightly different from the 2023 valuation best estimate discount rate assumptions, as they exclude the 'illiquidity risk premium' for consistency with the asset modelling.
    - Self-sufficiency discount rate: Gilts+0.5% initially, varying with a formulaic adjustment based on prevailing credit spreads
    - Best Estimate CPI inflation: 3% p.a. initially, varying with changes in market-implied RPI inflation
    - Self-sufficiency CPI inflation: market-implied RPI inflation less a wedge of 1% pa until 2030 and 0.1% pa thereafter
    - Statutory minimum indexation is allowed for using an inflation volatility assumption consistent with the 2023 valuation, other than in the Sustainability test where a simplified approach has been used by applying a cap to the CPI spot yield curve at 2.5%.
- A proxy for Technical Provisions liabilities has been used based on self-sufficiency liabilities less the value of 5% of total salary for 30 years (here, total salary includes amounts above the threshold, and is assumed to increase at CPI+1% pa). The discount rate used for the 5% of salary for 30 years value is Gilts+0.7% initially, varying with credit spreads (in line with USS's Affordable Risk Capacity discount rate). Approximate analysis currently being developed suggests limited sensitivity to the use of this proxy in overall member outcomes compared with an alternative approach based on changes in expected return. This will be explored in more detail as part of the October report.
- All indexation within the Scheme is based on CPI, so where the term "inflation" is used, this refers to CPI inflation unless otherwise noted. Indexation is assumed to apply at each 1 April, with indexation to all accrued benefits granted (subject to conditionality where appropriate) based on CPI to the previous September under each simulation, and indexation to the salary roll using CPI to the current date.
- Demographic assumptions (including mortality) are based on the 2023 USS valuation.
- In the strawman analysis, all existing benefits assumed to be subject to the "soft cap" on inflation applicable to current benefits. Salary growth for these members is assumed to be CPI+1% pa.

Notes on methodology

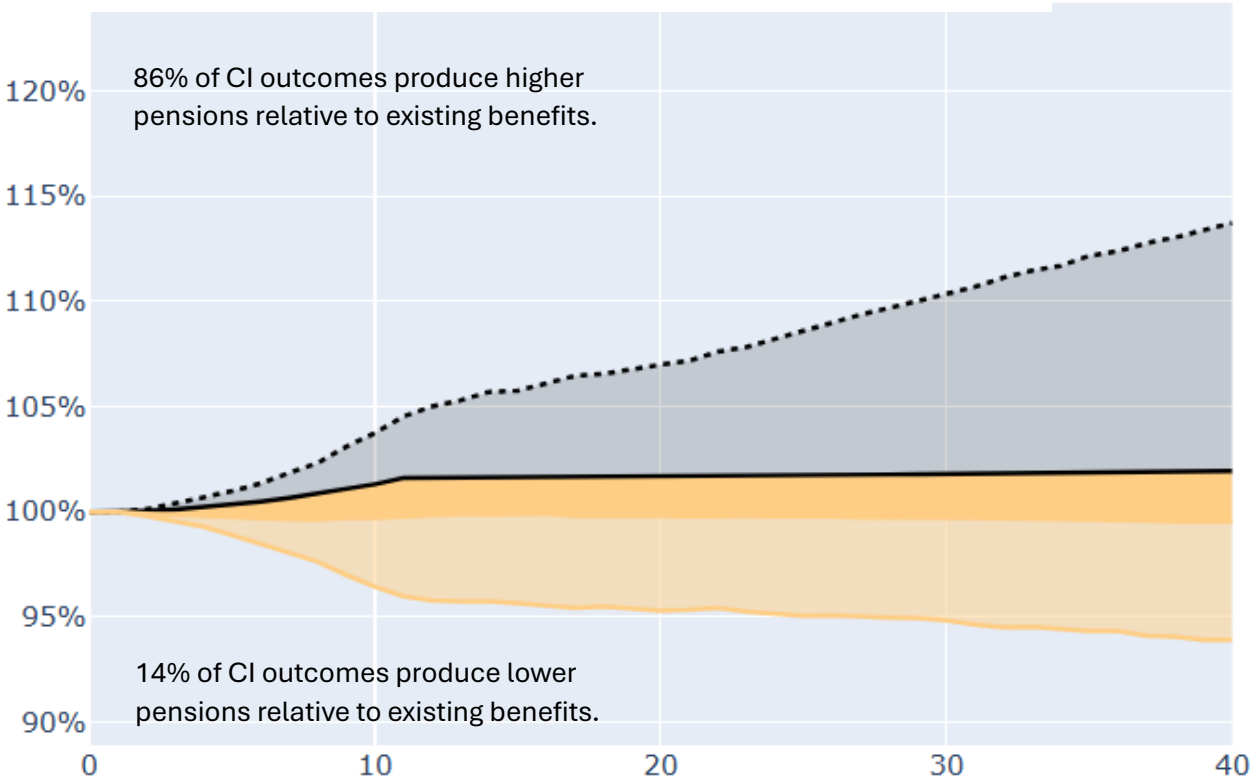
- The calculations are based on the data underlying the 2023 valuation (summarised in the valuation report). The expected benefit cash flows published by USS relating to the 2023 valuation can be found here.

- Some simplifications have been made for the purpose of the modelling, including in the allowance for the salary threshold (where only benefits and contributions on salary up to the threshold have been considered).
- The active membership profile is assumed to remain stable over time, with new entrants implicitly replacing those who retire / leave.
- The potential CI valuation methodology considers only the cashflows in respect of the expected membership at the applicable point in time. This means that at any given projected valuation date, only the contributions and benefits relating to the expected membership at that time are considered.
- Years where one or both of the tests are failing while the target increase is zero (because realised inflation over the year was negative) are counted as being years where the increase provided was below target.
- The catch-up mechanism employed to backdate increases foregone first grants increases to the pre-retirement cohort up to those received by the post-retirement cohort (i.e. inflation up to 2.5%, in years where pre-retirement benefits received less than this). This is for parity between the cohorts. It then uplifts both cohorts back to the target level. The mechanism applies to all benefits in a particular cohort at the point in time which it is applied, rather than relating specifically to the benefits when the indexation was missed.
- The results quoted for the strawmen correspond to the following quantiles of the distribution:
    - 1-in-40 upside: 97.5%
    - Median: 50%
    - 1-in-8 downside: 12.5%
    - 1-in-40 downside: 2.5%

Appendix H – Modelling further examples

56-year-old active member under CI Design 1

Pension p.a. relative to existing benefit



1-in-40 upside = 114%

Median = 102%

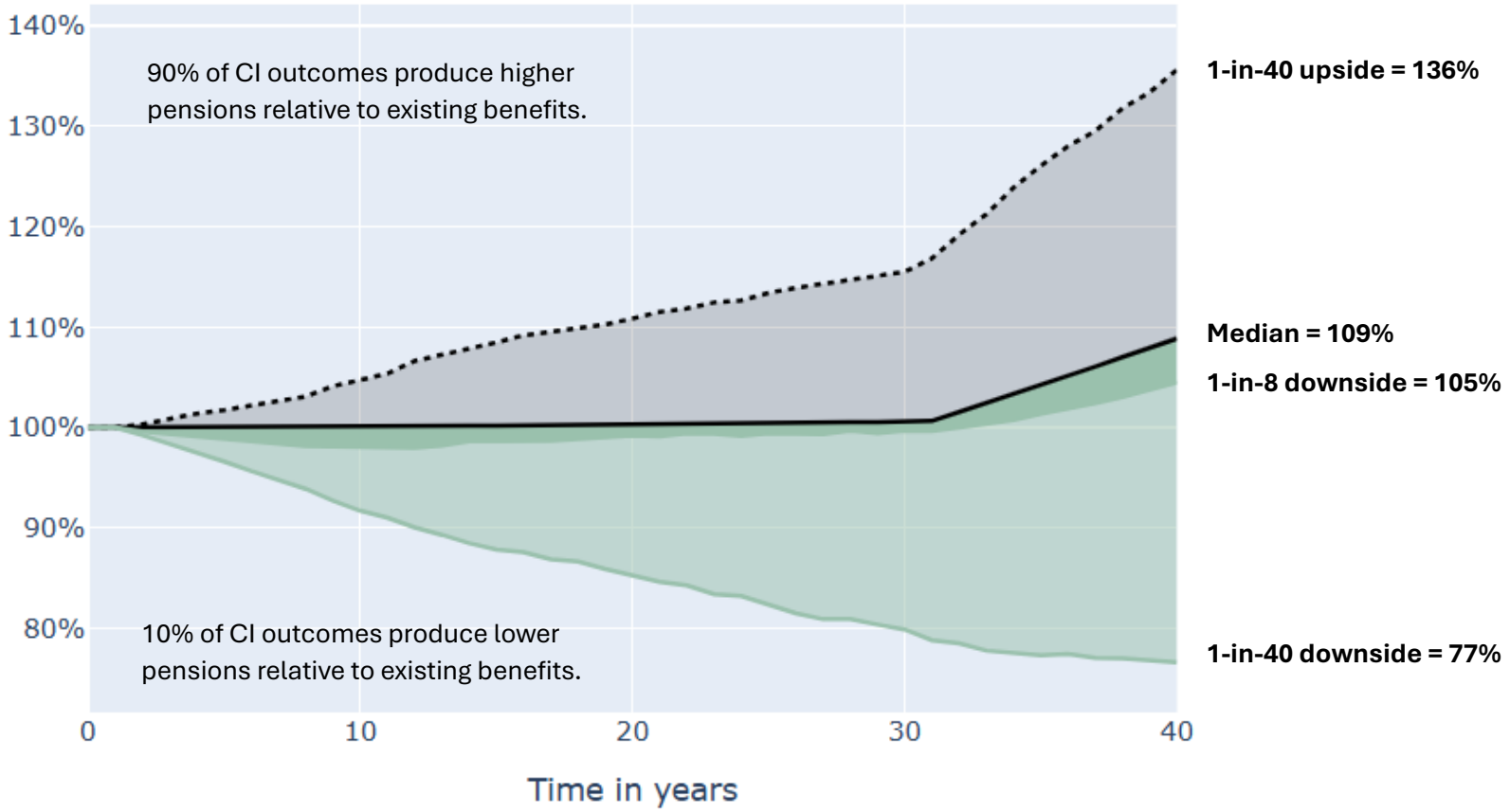
1-in-8 downside = 100%

1-in-40 downside = 94%

The narrower cone for this member relative to the 36-year-old reflects a higher amount of benefits already accrued, and less CI accrual before their retirement

36-year-old active member under CI Design 2

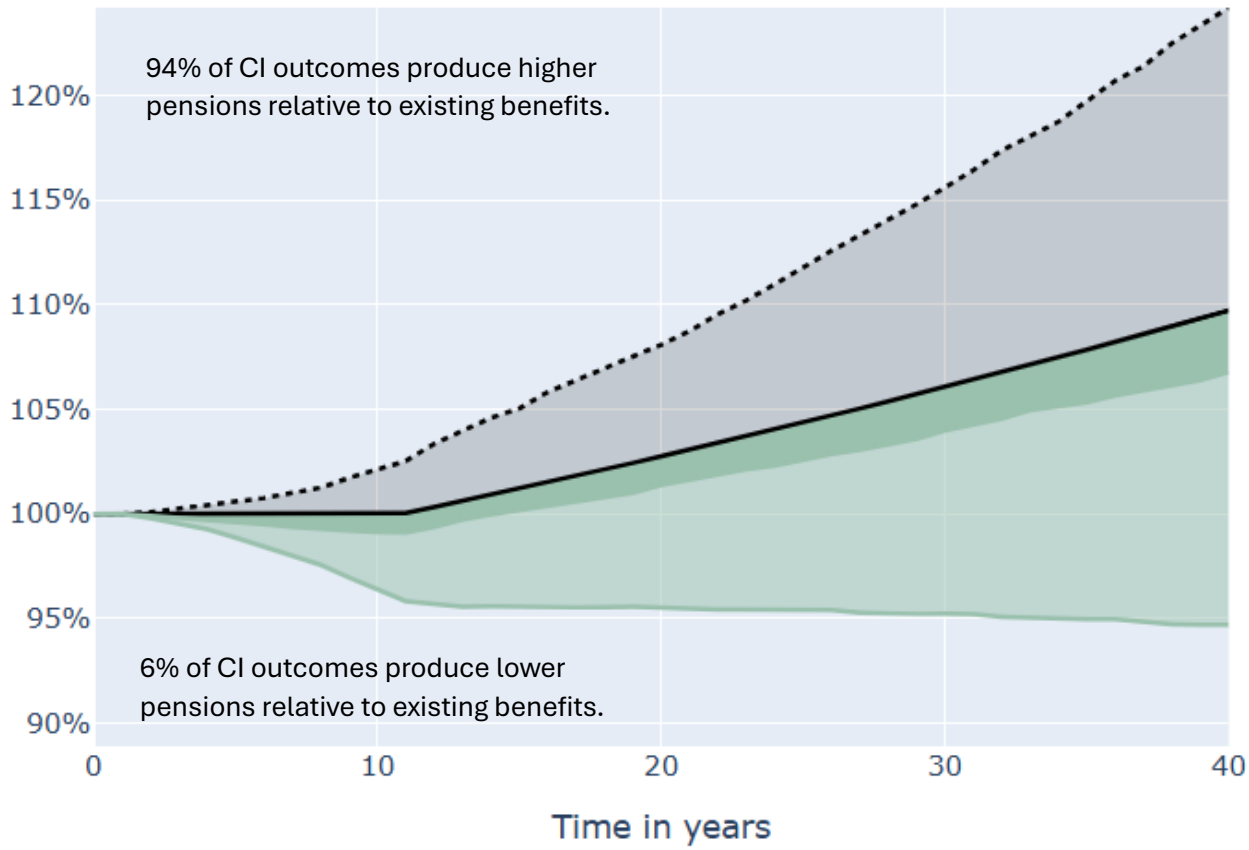
Pension p.a. relative to existing benefit



The improvement from CI under this structure comes after the pension is in payment, when target indexation is higher leading to better overall outcomes expected. The extent to which members benefit from this will depend on how long they live during retirement.

56-year-old active member under CI Design 2

Pension p.a. relative to existing benefit



1-in-40 upside = 124%

Median = 110%

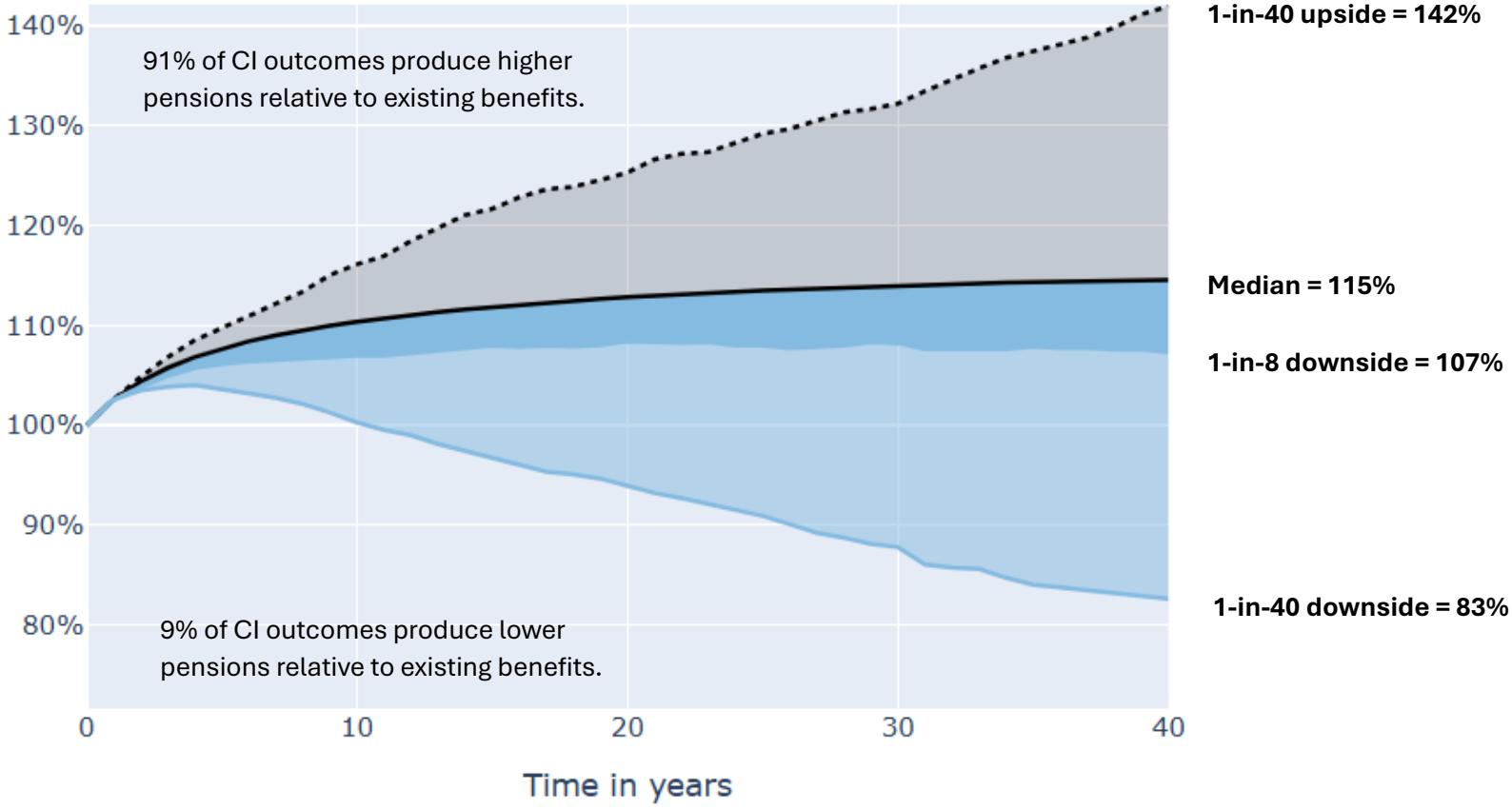
1-in-8 downside = 107%

1-in-40 downside =95%

The narrower cone for this member again reflects a higher amount of benefits already accrued, and less CI accrual before their retirement. The expected improvement from CI continues to grow during the member's retirement.

36-year-old active member under CI Design 3

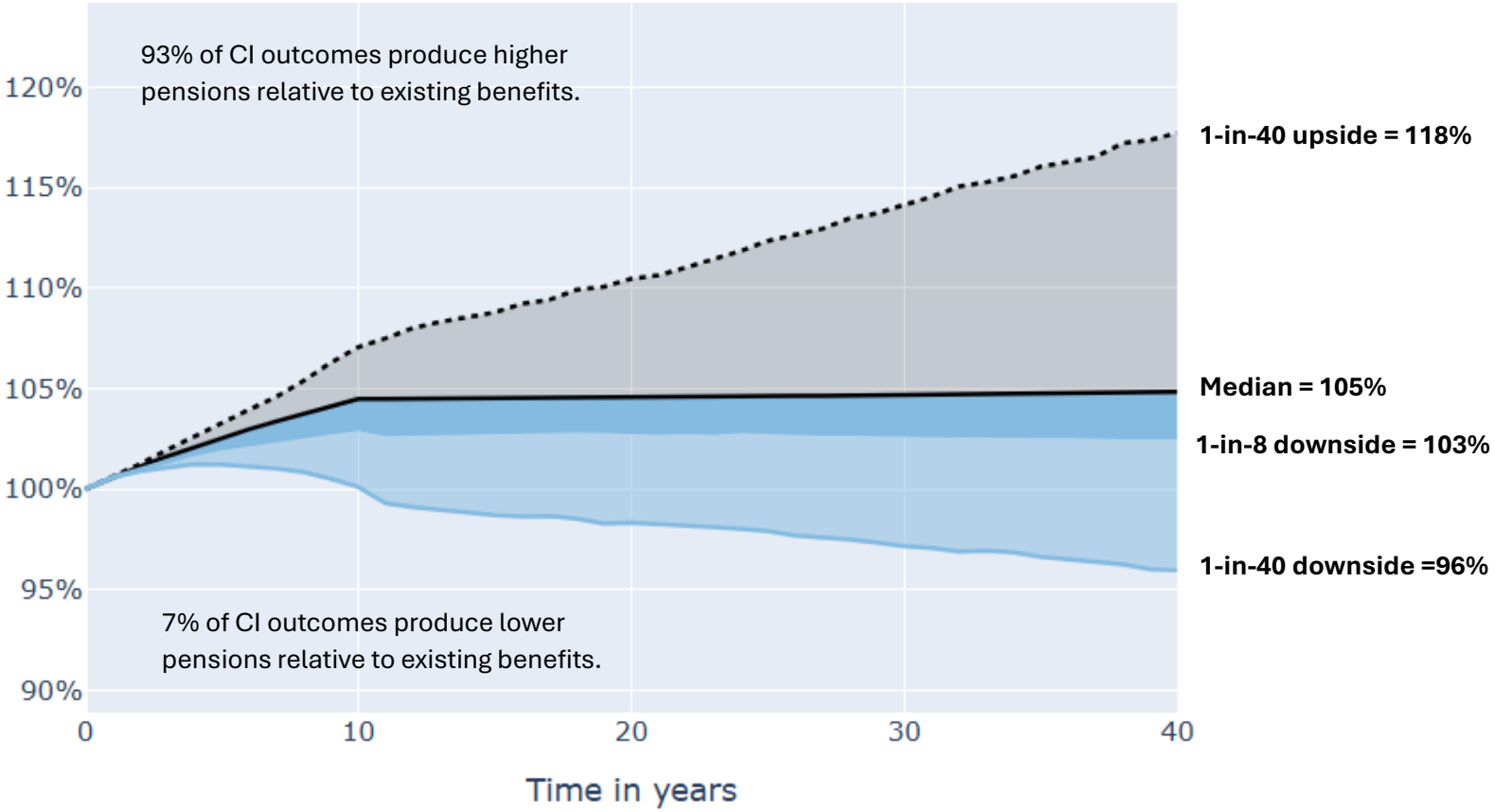
Pension p.a. relative to existing benefit



The improved accrual rate under this structure gives this member an earlier increase to their expected pension, with similar long term outcomes to CI Design 1.

56-year-old active member under CI Design 3

Pension p.a. relative to existing benefit



This member is expected to receive a higher pension under this design than CI Design 1, because with a relatively short period to retirement, the more generous accrual rate is more valuable than higher pre-retirement increases.

Appendix I – CISG Terms of reference

Purpose and Scope

This terms of reference is for a sub-group of the Stability Working Group (StWG) of the Joint Negotiating Committee (JNC) to explore conditional indexation (CI) with the objective to identify if CI could improve USS member expected outcomes and/or deliver improved contribution and benefit stability within an affordable cost envelope for members and employers compared to the current benefit design. The Group will report into the StWG and explore whether a CI benefit design would support the objective set out above. Upon completion of the work of the Group and reporting its findings into the StWG, the StWG can make a recommendation / recommendations to the JNC for its consideration in respect of core CI benefit design.

Considerations of the Group include:

- Benefit design - including exploring benefit design and contribution structures that could improve member expected outcomes and provide greater stability, and considering the practical implementability of any CI solution
- CI decision making and Governance
- CI valuation methodology and funding risk
- Sector support and engagement
- Understanding member impacts including fairness and equality aspects of any designs

In undertaking the review the Group will:

- Respect the responsibilities of different parties in matters of benefit change, scheme funding and investment
- Recognise the legal and regulatory boundaries that frame benefit change, scheme funding and investment, and ensure that all relevant pensions legislation and law will be upheld

Regular updates will be provided to the JNC within the reporting from the StWG. The Group will identify checkpoints to review and report key findings to the StWG and JNC and to ensure that it remains appropriate to continue the exploration of CI. An interim report is to be scheduled for May 2025 and a findings report will be submitted to the JNC via the Stability Working Group in October 2025 to give a view as to whether CI would be a viable

solution to support the objective set out in the purpose and scope. The timetable will be kept under review with a formal review in late January 2025/early February 2025.

Context

CI is a defined benefit pension like the USS Retirement Income Builder except that future annual "cost of living" increases (revaluation and indexation) ordinarily applied to the future benefits members build up are instead conditional on the scheme's funding position. CI has the potential to deliver improved member expected outcomes and greater benefit and contribution stability but does replace guaranteed indexation within the rules with a partly conditional increase based on scheme funding. The Group will consider this balance of better expected member outcomes and improved stability, against the reduced certainty around indexation as it progresses the exploration of CI.

Structure

The Group will consider and agree the programme of work, matters to be considered and resource requirements at an initiation meeting (or 'Meeting Zero') of the Group. The programme timetable will be considered and agreed at meeting zero noting that it will remain under review and can be adjusted if required.

Group members: UCU and UCEA will each appoint three representatives to the Group (with the option for the UCU/UCEA officer to be a fourth representative); to attend meetings and to consider and discuss CI. Advisers are invited to attend meetings and participate in the discussions.

Chair: The Trustee will facilitate the CI meetings as is the case for the StWG. There will be no formal chair however UCU and UCEA can appoint one.

Secretariat: USS

Meetings: A meeting quorum will be three members each from UCU and UCEA. UCU and UCEA can decide a different quorum requirement for meetings where that is jointly approved by them in advance. Meetings will be held in a format which allows either attendance in person or via remote access. The USS executive will assist with meeting arrangements, agendas and notes, supported by UCEA and UCU as appropriate.

Communications and engagement with employers and members:

- The work of the Group will include clear and regular communications with members and employers and updates on findings and progress at regular intervals
- The work of the Group will be exploratory, and the information shared with it from the Trustee or advisors may at times be confidential. The Group will identify key pieces of information which would be useful to share publicly and agree if and when that information can be made public (seeking permission from the Trustee in advance where it relates to confidential information).