DocuSign Envelope ID: DA587878-E4FC-4917-B714-F32571D91C43

Actuarial Valuation Report at 31 March 2023

Universities Superannuation Scheme

20 December 2023

As instructed, I have carried out an actuarial valuation of the Universities Superannuation Scheme ("the Scheme") as at 31 March 2023. I now present my report which is addressed to the Trustee of the Scheme.

The main purpose of the report, required by the Pensions Act 2004, is to set out the results of and outcomes from the valuation. Scheme members will receive a Summary Funding Statement relating to the valuation in due course.

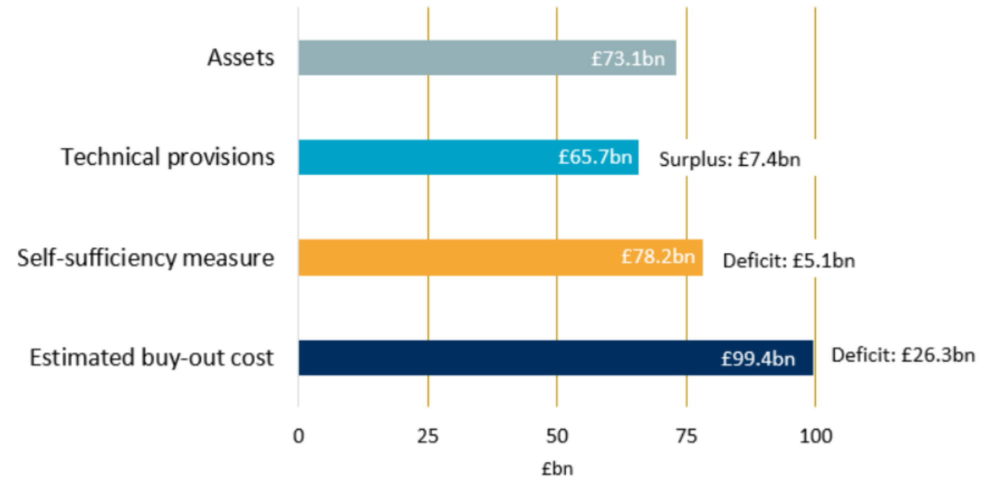
The Trustee is responsible for the choice of assumptions for the valuation and for then setting an appropriate level of future contributions (having taken actuarial advice from me), in consultation with Universities UK ("UUK"), the body nominated for these purposes under the Scheme rules to act as the representative of the employers who sponsor the Scheme. The Joint Negotiating Committee ("JNC") is responsible for deciding how any change to the required overall contribution rate will be addressed, whether by way of change to member and employer contributions, changes to the benefit structure, or both.

The JNC has recommended changes to future service benefits to apply from April 2024. Following the conclusion of a consultation by employers with affected employees[1], the Trustee is taking steps to implement these changes, which will be formalised by a deed of amendment in due course. This report takes these changes into account.

The JNC has also recommended changes to benefits accrued before the valuation date (in relation to pension increases on post-April 2022 benefits) and a benefit uplift applicable to certain members with service between April 2022 and March 2024. As these changes will be implemented after the valuation date, they do not affect the headline technical provisions figure at 31 March 2023, but I have commented on their impact in the section of this report on experience after the valuation date.

[1]Consultation with affected employees and representatives for two institutions started later than the main consultation period (which closed on 24 November 2023), so decisions that are subject to consultation in relation to those employees are not expected until January / February 2024.

The main results of the valuation are summarised here, with further detail in the following sections, appendices and the attached Statement of Funding Principles and Schedule of Contributions. The valuation and this report relate solely to the defined benefits section of the Scheme in respect of benefits accrued up to the valuation date. Contribution requirements relate to both the defined benefit and defined contribution sections of the Scheme.



Summary of agreed contributions	Employer contributions	Member contributions
From 1 January 2024	14.5% of Salary	6.1% of Salary

DocuSign Envelope ID: DA587878-E4FC-4917-B714-F32571D91C43

Contents

- Funding objective and method
- Assumptions
- Technical provisions and future service contribution rate
- Reconciliation of experience to 31 March 2023
- Buy-out and self-sufficiency measures
- Experience since the valuation date
- Contributions and future projections

Appendix

- 1 Key risks faced in funding the Scheme
- 2 Membership data and benefits
- 3 Assets and investment strategy
- 4 Sensitivity to assumptions
- 5 Assumptions used for assessing solvency

Key documents

- Certification of the calculation of the technical provisions
- Statement of Funding Principles
- Schedule of Contributions and certificate
- Certification of Section 179 valuation

Professional standards

This report is part of the work in connection with the valuation of the Scheme. The report has been produced for the information of interested readers and not with the intention that it should support any decision that they may make. Our work in preparing this report complies with Technical Actuarial Standard 100: General Actuarial Standards, together with Technical Actuarial Standard 300: Pensions.

The use of our work

This work has been produced by Lane Clark & Peacock LLP under the terms of our written agreement with the Trustee of the Universities Superannuation Scheme ("Our Client").

This work is only appropriate for the purposes described and should not be used for anything else. It is subject to any stated limitations (eg regarding accuracy or completeness). Unless otherwise stated, it is confidential and is for your sole use. You may not provide this work, in whole or in part, to anyone else without first obtaining our permission in writing, although we acknowledge that you are required to pass it to the employers sponsoring the Scheme and that you may make it available to Scheme members. We accept no liability to anyone, including but not limited to employers and Scheme members, who is not Our Client.

If the purpose of this work is to assist you in supplying information to someone else and you acknowledge our assistance in your communication to that person, please make it clear that we accept no liability towards them.

Calculations

Calculations of the technical provisions, other liability measures, and contribution rates have been performed by USSL's Funding Strategy Team using PFaroe, the Trustee's third-party valuation tool. We have reviewed the output and are satisfied that it is suitable for the purposes of this report. The PFaroe calculations are based on the membership data and benefits as set out in the appendices.

About Lane Clark & Peacock LLP

We are a limited liability partnership registered in England and Wales with registered number OC301436. LCP is a registered trademark in the UK and in the EU. All partners are members of Lane Clark & Peacock LLP. A list of members' names is available for inspection at 95 Wigmore Street, London, W1U 1DQ, the firm's principal place of business and registered office.

Lane Clark & Peacock LLP is authorised and regulated by the Financial Conduct Authority and is licensed by the Institute and Faculty of Actuaries for a range of investment business activities. Locations in Cambridge, Edinburgh, London, Paris, Winchester and Ireland.

© Lane Clark & Peacock LLP 2023

https://www.lcp.uk.com/emails-important-information contains important information about this communication from LCP, including limitations as to its use.

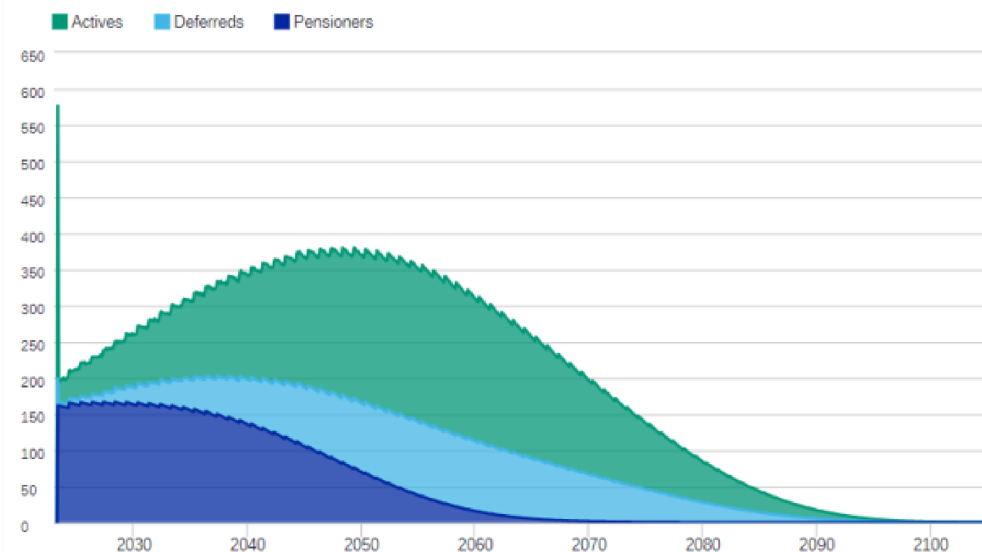
LCP powering possibility

Funding objective and method

Principles in setting objective and method

- The Scheme's statutory funding objective is to hold sufficient and appropriate assets to cover its technical provisions.
- The Trustee took advice from me to determine the method and assumptions to use for this valuation, in consultation with UUK.
- The valuation adopted the "projected unit method" with a one-year control period, under which the technical provisions are calculated as the amount of assets required as at the valuation date to meet the projected benefit cash flows, based on benefits accrued to the valuation date and the assumptions made, and the future service contribution rate is determined to be sufficient to reflect the expected increase in technical provisions from an additional year's accrual of benefits.
- The technical provisions are not intended to be sufficient to enable the Scheme to meet benefits in all circumstances without further support from employers, or to be wound up and its benefits secured in full with an insurance company.
- After considering the strength of the employers' covenant, and having regard to its Integrated Risk Management Framework, the Trustee has set assumptions as documented in the Scheme's Statement of Funding Principles, a copy of which is attached. In particular, the Trustee took account of the employers' likely ability to pay additional contributions in the future if experience proves to be less favourable than implied by the assumptions.
- There is a risk that the assumptions are not borne out in practice and that the future progression of the funding position is materially different from that expected. Further details on the risks the Scheme faces are set out in Appendix 1.

Projected benefit cash flows as at the valuation date



Source: PFaroe

- The chart above shows projected monthly benefit payments from the Scheme based on the demographic and inflation assumptions adopted for the 2023 actuarial valuation, based on benefits earned by members up to 31 March 2023[1].
- In practice benefit payments from the Scheme are expected to be higher as a result of additional benefits that members will earn for service after the valuation date.
- The majority of benefits are linked to CPI inflation.

[1]The spike in month 1 on the chart reflects the assumption that non-pensioner members over their normal pension age will retire immediately on the valuation date.

DocuSign Envelope ID: DA587878-E4FC-4917-B714-F32571D91C43

LCP powering possibility

Assumptions

Key financial assumptions

- The investment model is an important financial assumption, the Trustee has:
  - Chosen an investment model that assumes that the Scheme adopts a notional portfolio in respect of benefits in payment (with a lower risk / more closely matched investment strategy post-retirement) and a different notional portfolio in respect of benefits not yet in payment (with a higher return-oriented strategy pre-retirement). This approach is often known as a "dual discount rate" model.
  - Taken advance credit for future returns on the post-retirement portfolio that are 0.9% pa over the return from gilts (net of investment management expenses);
  - Taken advance credit for an additional return on the pre-retirement portfolio over the return from gilts of 2.5% pa (net of investment management expenses).
- A summary of the key financial assumptions for the technical provisions is shown in the table below.

	% pa
Price inflation	
CPI	3.0
RPI	3.4
Return from gilts	3.7
Return above gilts	
Pre-retirement portfolio	2.5
Post-retirement portfolio	0.9

- The above rates are illustrative single-equivalent rates at 31 March 2023. In practice the full yield curve for gilts has been used in the calculations.
- The CPI assumption is a flat rate based on a long-term average expected level of CPI, broadly consistent with long term market expectations. The RPI assumption allows for an assumed gap between RPI and CPI of 1.0% pa pre-2030 and 0.1% pa post-2030. Assumed pension increases are derived from the relevant inflation assumption with allowance for applicable caps and collars.

Key assumptions differences compared with the previous valuation

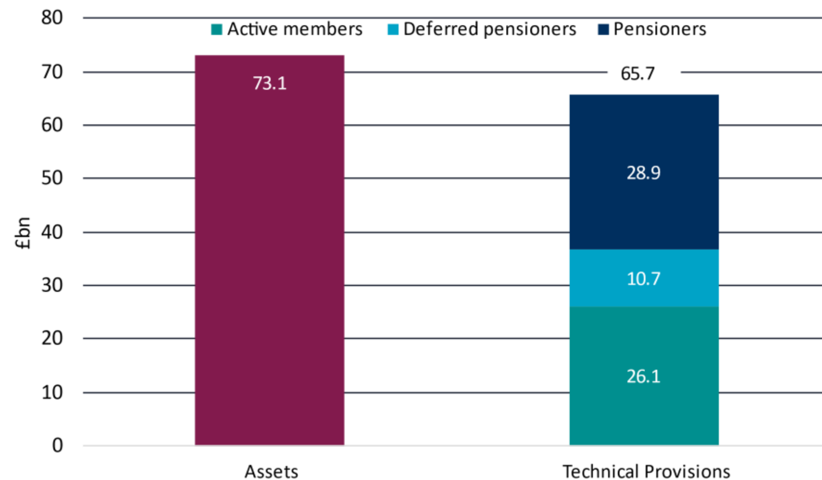
- The Trustee has adopted the same main elements of the approach to setting assumptions as used at the previous valuation, in particular:
  - using a dual discount rate model for determining the technical provisions and future service contribution requirements;
  - deriving the discount rates by reference to investment return expectations for the assets the Trustee expects to hold based on the Valuation Investment Strategy, notionally decomposed into pre- and post-retirement strategies, and then applying a margin for prudence (details of the Valuation Investment Strategy are set out in Appendix 3); and
  - using the Trustee's Integrated Risk Management Framework (IRMF) to assess whether the overall outcome is within the employers' risk capacity and the Trustee's risk appetite.
- There has been a significant rise in fixed interest and index-linked gilt yields between 31 March 2020 and 31 March 2023, and an increase in expected returns on other asset classes, which results in discount rates being materially higher than at the previous valuation.
- Expectations for CPI price inflation have also increased since the 2020 valuation.
- The mortality assumption has been updated to use more recent future projections prepared by the Continuous Mortality Investigation (the "CMI 2021" future projection tables), and makes some allowance for heavier mortality to persist given the ramifications of the coronavirus pandemic, leading to slightly shorter assumed life expectancies than at the previous valuation.

Appendix 4 shows the effect on the valuation of changing some of the key assumptions.

LCP powering possibility

Technical provisions and future service contribution rate

Technical provisions as at 31 March 2023



As at the valuation date the technical provisions calculated using the assumptions set out in the Statement of Funding Principles were £65.7bn and there was therefore a technical provisions surplus of £7.4bn.

The calculations are based on the membership data, benefits and assets as summarised in Appendix 2 and 3.

Future service contribution rate

The future service contribution rate calculated using the same assumptions as adopted for the technical provisions as at 31 March 2023 is as follows. I have shown rates for both the current benefit structure (which applies until 31 March 2024) and the benefit structure which is to be effective from 1 April 2024 (subject to completion of the relevant deed of amendment).

% of Salary	Current benefit scale	Benefit scale from 1 April 2024
Future service rate for DB benefits	10.0%	18.3%
Total cost of DC benefits	5.7%	1.8%
Allowance for non-investment expenses	0.5%	0.5%
Future service contribution rate	**16.2%**	**20.6%**

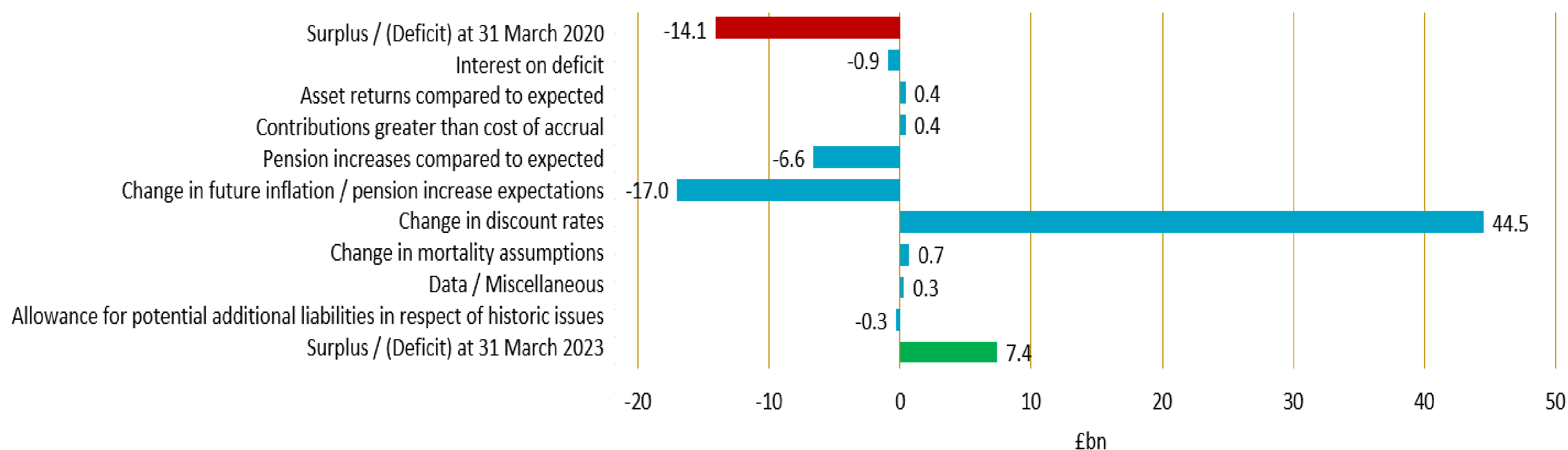
The total cost of DC benefits includes allowance for investment management costs relating to the DC section of 0.1% of salaries.

Certification of technical provisions

Under the Pensions Act 2004, I am required to certify that the technical provisions have been calculated in accordance with the legislation. My certificate is attached.

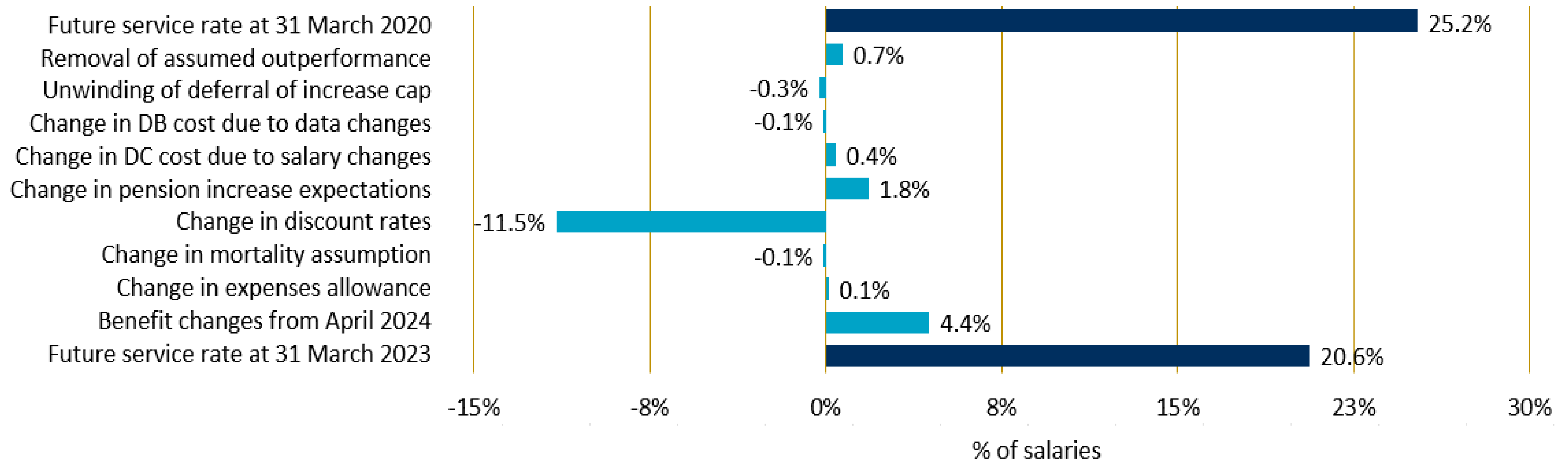
Reconciliation of experience to 31 March 2023

Explanation of movement in technical provisions surplus / (deficit) from previous valuation



- As at the valuation date the surplus was £7.4bn on the assumptions adopted for the calculation of the Technical Provisions.
- Had experience since the previous valuation been in line with the assumptions adopted for that valuation, and allowing for contributions paid over the period, the Scheme would have been expected to have a deficit of £14.6bn at this valuation date – broadly similar to the position at 31 March 2020.
- The actual position is therefore materially better than expected and the reasons for this are shown in the chart.
- The contributions paid to the defined benefit section since the previous valuation are allowed for in the "contributions greater than cost of accrual" item. These were £2,574m in 2020/21, £2,670m in 2021/22 and £2,586m in 2022/23.

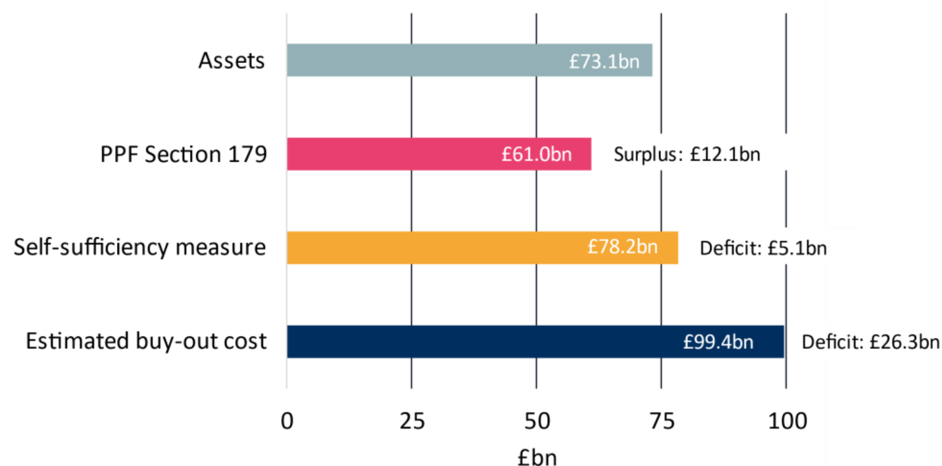
Explanation of movement in required future service contribution rate from previous valuation



- Following the preliminary results of the actuarial valuation as at 31 March 2020 the JNC proposed benefit changes which were implemented from 1 April 2022. The future service rate at 31 March 2020 shown above reflects the benefit structure applying for service from 1 April 2022.
- The key reason for the decrease in the required future service contribution rate is the changes in financial conditions, reflected in higher discount rates relative to assumed future inflation.

Buy-out and self-sufficiency measures

The position were the employers to have ceased sponsoring the Scheme on the valuation date



Derivation of the solvency position

- The buy-out or solvency position has been calculated by estimating the cost of securing all benefits by purchasing annuities with an insurance company and winding up the Scheme. In this situation, active members' pensionable service would cease and they would become deferred pensioners. We have also included an allowance for the expenses that would be incurred in winding up the Scheme. This measure of solvency is referred to as the "buy-out cost". It represents my statutory estimate of solvency as at the valuation date.
- We have not obtained quotations but have produced our estimate using the assumptions described in Appendix 5. In practice, the actual cost can be determined only by completing a buy-out. In our experience, actual insurer pricing can frequently vary by +/-5% compared to our solvency estimates for a given scheme due to variations in insurer appetite. The solvency estimate shown is intended to represent a central figure within this range. However, there are also cases where actual pricing is outside such a range, for example due to scheme characteristics, or general supply and demand mechanics in the market. Further, given the size of the Scheme it is not likely to be possible to secure all benefits with one or more insurers in a short space of time and so in practice a series of transactions over many years would be needed. The actual cost for the Scheme could therefore be very different from the estimate shown.
- The estimated buy-out deficit at the valuation date was c£26bn. This corresponds to an estimated buy-out funding level of 74%, which compares with 51% as at the previous valuation. The key reason for the change is the very significant increase in gilt, swap and corporate bond yields since the previous valuation, which are major drivers of insurance pricing.

Self-sufficiency measure

- The self-sufficiency measure represents the minimum level of assets the Trustee would wish to hold in order that it could follow an investment strategy that would give a very high level of confidence of being able to pay all benefits when they fall due without the need for any additional contributions, while maintaining a high funding ratio.
- In practice, the self-sufficiency measure is used primarily as an indicator of the level of reliance on the employer covenant under the Trustee's IRMF.
- The assumptions adopted for the self-sufficiency measure at the valuation date are included in the Statement of Funding Principles.

Interaction with the PPF

- Where a pension scheme is discontinued because of the insolvency of the employers, the Pension Protection Fund ("PPF") is required to assess whether the scheme is eligible to enter the PPF. This includes assessing whether the scheme is insufficiently funded.
- In broad terms, if the PPF is satisfied that the scheme's assets are insufficient to buy out benefits equal to PPF compensation with an insurance company, then the assets would be transferred to the PPF to pay members PPF compensation in place of scheme benefits.
- If the assets are sufficient, the scheme can be wound up outside the PPF with the assets first used to secure benefits equal in value to PPF compensation, and the balance applied to secure benefits above that level in accordance with the scheme's rules. If it is not possible to secure benefits with an insurer or insurers, eg because of the size of the scheme, the Trustee can apply to the PPF to continue as a closed scheme.
- As a proxy for the financial assessment required by the PPF in these circumstances, we consider a statutory "Section 179" valuation. The

assumptions for this are set by the PPF and not by the Trustee. On this basis, there was an estimated surplus in the Scheme of £12.1bn as at 31 March 2023.

- This indicates that, had the employers become insolvent at the valuation date, with no other sponsor to succeed them and no additional funding, it is likely the Scheme would not have entered the PPF, and benefits could have been provided at greater than the level of PPF compensation but less than in full. In practice, on insolvency of an employer, a debt equal to their share of the solvency (buy-out) deficit would be triggered, and the extent to which such debts are recovered would determine the ultimate level of benefits that could be provided.
- I have provided a certificate setting out the required details of the Section 179 valuation as at 31 March 2023 for the Trustee.

LCP powering possibility

Experience since the valuation date

Development of position since 31 March 2023

- Since 31 March 2023 fixed interest and index-linked gilt yields, and the modelled expected returns on scheme assets, have increased. While I have not undertaken any detailed analysis of post-valuation experience, I would expect that post-valuation experience is likely to have increased the surplus and reduced the future service contribution rate.
- In addition, contributions paid since the valuation date have been in excess of the future service contribution requirement under the recommended assumptions. This will tend to have increased the surplus on the recommended assumptions, all else being equal.
- This is borne out by the interim monitoring undertaken by the Trustee as part of its financial management plan at the June and September 2023 quarter ends.
- As noted previously, the JNC has recommended changes to benefits accrued before the valuation date (in relation to pension increases / revaluation on benefits accrued from 1 April 2022 – also applying to benefits earned after the valuation date up to 31 March 2024) and a benefit uplift applicable to certain members with service between April 2022 and March 2024. The JNC recommended that these changes take effect on 1 April 2024 and the Trustee is taking steps to implement them (including completion of the relevant deed of amendment). The aggregate estimated impact of these changes is to increase the technical provisions (and thereby reduce the surplus) by £1.4bn-£1.5bn, on the technical provisions assumptions as at 31 March 2023.
- At the current time it is estimated that there will remain a technical provisions surplus following implementation of these benefit improvements / uplifts.

LCP powering possibility

Contributions and future projections

Contributions

The Trustee has determined in consultation with UUK that contributions will be paid at the rate of 20.6% of salaries from 1 January 2024. This is equal to the required future service contribution rate for benefits being earned from 1 April 2024.

It has been agreed by the JNC that contributions will be split so that 14.5% of salaries is payable by employers and 6.1% of salaries is payable by members.

Projected funding levels at the next valuation

The projected funding levels three years after the valuation date are shown below.

These projections are made on the basis that:

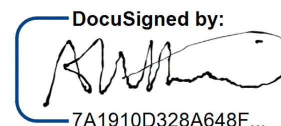
- the Scheme remains open to new members and the profile of the active membership remains broadly stable;
- experience from the valuation date is in line with the assumptions underlying the technical provisions, as set out in the Statement of Funding Principles;
- contributions are paid as set out in the Schedule of Contributions; and,
- there is no change in the insurers' buy-out pricing.

The projections take into account the benefit uplift described on the previous page. Experience from the valuation date is likely to be different from the assumptions made. Therefore, the position at the next valuation is likely to be different to that illustrated.

Measure	31 March 2023	31 March 2026
Technical provisions	111%	113%
Buy-out	74%	71%

Certification of contributions

Under the Pensions Act 2004, I am required to certify that the Schedule of Contributions is consistent with the Statement of Funding Principles, and that payment of contributions at the agreed rates can be expected to mean that the Scheme will have sufficient assets to cover its technical provisions throughout the period covered by the Schedule of Contributions. My certificate forms part of the Schedule of Contributions.



Aaron Punwani FIA
Partner
Appointed Scheme Actuary

+44 (0)20 7432 6785
Aaron.Punwani@lcp.uk.com

LCP powering possibility

Appendix

- 1 Key risks faced in funding the Scheme
- 2 Membership data and benefits
- 3 Assets and investment strategy
- 4 Sensitivity to assumptions
- 5 Assumptions used for assessing solvency

Appendix 1

Key risks faced in funding the Scheme

Risk	Comment
Employer covenant	The employers may not be able to support the Scheme, and in particular may not be able to pay increased contributions if experience is unfavourable. The Trustee has agreed steps that the Trustee believes have the effect of protecting the covenant, for example by putting debt monitoring provisions in place and a moratorium on employer exits as noted below. The Trustee currently rates the covenant as "strong" and will keep this under review.
Employers exiting the Scheme	Stronger employers may choose to exit the Scheme (after paying their section 75 debt) leaving a weaker remaining covenant. There is currently a rolling 20-year moratorium on employers' exits from the Scheme without Trustee consent.
Investment strategy and discount rates	Changes in asset values may not be matched by changes in the technical provisions. The discount rates used for the technical provisions are based on the anticipated returns on the Scheme assets with a margin for prudence. The Scheme assets include a substantial holding in return-seeking assets, the market value of which can be very volatile, and falls in the asset value would not generally be fully offset by changes in expectations for future returns, so the two may move out of line as investment conditions change. For example, if equity values fall, the funding position would likely worsen.
Investment returns	Future investment returns may be lower than anticipated. The greater the allowance made in the technical provisions for returns on return-seeking assets, the greater the risk that those returns are not achieved. In practice a prudent approach is taken to setting discount rates, to mitigate this risk. We have considered the LCP expected returns, as well as the USSIM expected returns, in developing our advice on discount rates. The LCP expected returns for equities, and other asset classes derived from equities, make an allowance for the possible impacts of climate change on future economic growth. While there are many possible pathways that climate change might follow, both physical changes to the climate and the transition to the low carbon economy (and associated technological and policy changes), and a wide range of potential outcomes, we aim to allow for a reduction in growth expectations that is greater than the cost of an orderly transition to an economy consistent with the Paris Agreement (under the United Nations Framework Convention on Climate Change), but less severe than no transition at all. Otherwise, no allowance is made for specific risks, such as cyber-attacks, geopolitical instability, drug resistance and/or future pandemics, which may have an effect on future investment returns.
Inflation	Actual inflation may be higher, and so benefit payments may be higher, than anticipated. The Trustee mitigates this risk through holding inflation-linked assets. In addition there is a potential mismatching risk if inflation linked liabilities behave differently to the inflation linked assets held to protect against inflation changes – for example where RPI linked assets are used to match CPI linked liabilities

Mortality	Scheme members may live longer, and so benefits may be paid for longer, than anticipated. In particular, no allowance is made for specific risks, such as climate change or antibiotic resistance, so members may live for a different length of time than assumed. To mitigate this risk a prudent approach is taken to the assumptions for life expectancy.
Member options	The incidence of Scheme members exercising benefit options which are potentially not "neutral" to the Scheme's funding position (such as early retirement or commutation) may be different from that anticipated.
Climate change risks	Climate-related risks are systemic and therefore could affect all pension schemes, and may be very financially significant, potentially affecting investment values, life expectancies and the employer covenant. I have commented above about the potential impact on investment returns. Climate risks may become more significant over the next decade than they have been to date.
Size of Scheme	The size of the Scheme is itself a risk insofar as it may not be possible to implement investment decisions quickly eg because there may not be market capacity for a large asset transition, or if there is, the transition may itself move the market.
Regulatory	In future the Scheme may have backdated claims or liabilities arising from equalisation or discrimination issues or from future legislation or court judgments. Future regulatory changes may influence the Scheme's funding plans. I have commented on the potential impact of new funding legislation and regulation in previous advice.
Interaction of risks	More than one of the risks described here may manifest at the same time, and there may be correlation between different risks, for example challenges to economic growth which result in lower investment returns may also have an adverse effect on the employers' covenant. It is important to ensure key metrics such as the funding position and the employer covenant are kept under review.

LCP powering possibility

Appendix 2

Membership data and benefits

Summary as at 31 March 2023 (31 March 2020 in brackets)

	Number		Average age		Total Salaries / Pensions (£'000 pa)	
Active members	214,374	*(200,355)*	45	*(44)*	10,320,000	*(8,962,000)*
Deferred members	227,518	*(188,466)*	46	*(45)*	524,000	*(441,000)*
Pensioners and beneficiaries	101,978	*(90,879)*	73	*(73)*	1,937,000	*(1,617,000)*
Total	**543,870**	***(479,700)***				

Further information on the data

- I have been provided with a full membership data extract as at the valuation date by the USSL Funding Strategy team. I have relied on this data and have no reason to doubt its overall accuracy for the purposes of the valuation. I have been provided with a note by the Funding Strategy Team dated 13 June 2023 setting out the checks they have carried out and details of any approximations in how the data has been adjusted. I am satisfied that the approach taken is reasonable and therefore that overall the data is fit for purpose for carrying out the actuarial valuation.
- The pensionable salary figures for active members have been obtained by totalling uncapped salaries.
- The pension figures for deferred pensioners have been obtained by totalling members' past service pensions as at 31 March 2023, with no allowance for the 1 April 2023 increase. The pension figures for pensioners and beneficiaries have been obtained by totalling members' pensions in payment at the valuation date but including the 1 April 2023 increase.
- Pensions in payment (in excess of GMPs where relevant) were increased since the previous valuation, as required under the Scheme's Rules. There have been no discretionary benefits granted since the previous valuation. The general increases based on CPI over the period were 1.7% in April 2020, 0.5% in April 2021, 3.1% in April 2022 and 10.1% in April 2023. Benefits accrued after 30 September 2011 were increased by 7.55% on 1 April 2023.
- The membership numbers exclude those records with zero salaries / pensions in the data. For members with active records showing zero salary but including an accrued pension, the accrued pension has been valued.
- In addition to the numbers in the table above there were 1,298 (2020: 1,159) children receiving a child dependant's pension.

Benefits in the Scheme

- The calculation of technical provisions for the 31 March 2023 valuation relates solely to the defined benefits section of the Scheme in respect of benefits accrued up to the valuation date. Future service contribution requirements relate to both the defined benefit and defined contribution sections of the Scheme.
- The benefits valued for the current benefit structure are as set out in the Trust Deed and Rules dated 19 November 2015, as subsequently amended. A summary of the Scheme benefits for current active members is available on the USS website. I have made no allowance for discretionary pension increases.
- The JNC has recommended benefit changes effective from 1 April 2024, which the Trustee is now taking steps to implement, and which broadly speaking, subject to completion of the relevant deed of amendment, will restore benefits accrued from that date to the pre-April 2022 position. These benefit changes are reflected in the required future service contribution rate and I have included a high level summary of the changes below.
- Members' benefits are yet to be adjusted to remove inequalities caused by Guaranteed Minimum Pensions (GMPs) earned after 17 May 1990. I have valued the current benefits. I understand from the USS legal team that the Scheme's rules neutralise the vast majority of any inequality arising from GMPs and therefore the impact of GMP equalisation is not expected to be material in the context of the Scheme.
- I understand a number of members with deferred benefits retain a right to a transfer value on a higher short service benefit. The transfer value is potentially greater than the reserve held in the valuation for the deferred benefit. The Funding Strategy Team have estimated an additional liability in relation to this issue of £0.2bn. I have not reviewed the underlying data or calculations, given the materiality in the context of the Scheme's overall funding requirements. I have included a reserve of £0.2bn in the technical provisions and self-sufficiency measure as an allowance for this potentially more valuable benefit.
- I understand certain past benefit calculations in relation to members who started drawing benefits from deferred status at a later date than their earliest Normal Pension Age (NPA) are currently being reviewed, and there may be additional liabilities as a result. Based on Trustee instructions to make certain allowances for potential issues, and calculations carried out by the Funding Strategy Team, I have included a reserve of £0.3bn for these potential liabilities.
- For Scheme benefits earned between 1 April 2022 and 31 March 2024, members are in general entitled to annual increases in line with CPI inflation, subject each year to a cap of 2.5%. For increases in the short term, the 2.5% cap does not apply, with increases instead being consistent with those for service between October 2011 and March 2022. For the purposes of the future service contribution rate for current benefits calculated in this report, no allowance is made for this short-term adjustment. Given the further benefit changes recommended by the JNC and being implemented by the Trustee this 2.5% cap will be removed in any case (subject to completion of the relevant deed of amendment).

Benefits changes from 1 April 2024

- The key elements of the benefit changes which the JNC has recommended to be implemented from 1 April 2024 are:
  - An accrual rate of 1/75 instead of 1/85 (with equivalent adjustment for lump sum benefits) for the defined benefit section
  - The salary threshold up to which defined benefit pensions are based is to be increased to c £70,000 pa
  - Pension increases / revaluation are to be based upon full CPI up to 5% then half of any increase up to 15%, meaning the maximum increase will be capped at 10% (this is sometimes referred to as the 'soft cap').
- In addition, the change to pension increases / revaluation noted in the third bullet point above will apply to benefits accrued between 1 April 2022 and 31 March 2024, and a benefit uplift will be granted in respect of certain members with service between those dates (broadly £215 pa plus 3x lump sum for non-pensioners and £241 pa for pensioners – full details are provided on the USS website).

LCP powering possibility

Appendix 3

Assets and investment strategy: Summary as at 31 March 2023

The value of assets attributable to the defined benefit section of the Scheme was £73.1bn as at 31 March 2023 per the audited report and accounts.

The Valuation Investment Strategy (VIS) as at 31 March 2023 is as follows. For the purposes of setting valuation assumptions it is decomposed into notional pre- and post-retirement portfolios but it is assumed that the VIS would be managed as a single portfolio.

Asset class	Overall VIS
Equity	54.0%
Property	6.0%
Other Fixed Income	25.0%
LDI	33.1%
Fixed interest gilts	-9.6%
Cash	-8.5%
	100%

Breakdown of equity allocation	
UK	20%
Developed ex-UK	65%
Emerging Market	15%
	100%

Breakdown of other fixed income	
UK Credit	40%
Global Credit	20%
Global High Yield	10%
US TIPS	15%
Emerging Market Debt	15%
	100%

The overall portfolio is intended to provide interest rate and inflation hedging of 40% of the self-sufficiency liabilities.

In practice the Scheme does not invest in line with the VIS and the implemented investment strategy contains a significant allocation to illiquid assets. Notwithstanding this, the implemented strategy is intended to have similar characteristics to the VIS.

LCP powering possibility

Appendix 4

Sensitivity to assumptions

- The valuation results are sensitive to the assumptions chosen and we illustrate here the effects of changes to some of the key assumptions.
- The results are particularly sensitive to the advance credit for future investment returns.
- By way of illustration, the effect on the technical provisions and future service contribution rate of changing some of the key financial assumptions is shown in the table.
- In each case the sensitivities shown are independent, ie they allow for a change in the specified assumption only with all other assumptions as set out in the Statement of Funding Principles.
- The sensitivities are shown for information purposes only and do not imply that the Trustee would necessarily be happy to set technical provisions or contributions based on these alternative assumptions.
- In relation to the CPI inflation sensitivity, the calculations are based on an increase of 0.1% pa in each of the assumed rates of future pension increases. This is a broad brush approach as, if the Trustee were actually to adopt a different inflation assumption:
  - The assumptions for future pension increases would differ slightly, reflecting the impact of maximum and minimum rates of increase, which would differ for a different average inflation assumption; and
  - The discount rates would need to be reconsidered for consistency with the different CPI inflation assumption.
- The valuation results are also sensitive to the mortality assumption in terms of both life expectancy at the valuation date and how life expectancy may change in the future. To the extent that the mortality assumption under-estimates life expectancies, the technical provisions will be too low, all other things being equal.
- As an illustration, if it were assumed that life expectancies were one year longer than implied by the mortality assumption adopted, the technical provisions would be broadly 3% higher.

Sensitivity	Technical Provisions	Future service contribution rate (post-April 2024 benefit scale) (% of salaries)
Baseline assumptions	**£65.7bn**	**20.6%**
Pre-retirement discount rate: gilts + 2.0% pa	£67.4bn	22.0%
Pre-retirement discount rate: gilts + 3.0% pa	£64.1bn	19.2%
Post-retirement discount rate: gilts + 0.8% pa	£66.4bn	20.8%
Post-retirement discount rate: gilts + 1.0% pa	£65.0bn	20.4%
Average CPI inflation: 3.1% pa	£66.7bn	21.1%

Appendix 5

Assumptions used for assessing buy-out

- We have based our estimate of the solvency position on our in-house insurer buy-out pricing model. The model is based on similar but simplified principles to those used by insurance companies in setting their prices. It is calibrated against actual quotations and final transaction prices received for other schemes.
- We have not obtained an actual quotation for the Scheme, and there is considerable volatility in prices. Therefore, were the benefits actually to be bought out, the position could be very different from that illustrated.
- These assumptions differ from those set out in the Statement of Funding Principles and they result in an estimated buy-out cost that is higher than the technical provisions.
- All else being equal, non-pensioners are more expensive to insure than pensioners, due to the longer duration of non-pensioners' benefit payments and additional uncertainty eg around the options that can be exercised by members before and at retirement.
- The demographic assumptions we have used are generally the same as those used for the technical provisions (where relevant) except as shown opposite.
- We have calculated our estimate of the solvency position assuming that the insurer's terms for members' options are adopted.
- Additionally, we have included a provision of £0.5bn for the costs that would be incurred by the Trustee in winding up the Scheme, and a per-member allowance for the cost of administration with an insurer. In practice, the actual expenses could be very different.
- The size of the Scheme is such that it would not be possible to secure all benefits in a single transaction with an insurer, and it is likely that a series of transactions over an extended period of time would be required to secure all benefits. We have not applied any loading to the solvency estimate to take account of this extra risk.
- This basis has no relevance beyond establishing an estimate of the hypothetical buy-out cost and my statutory estimate of solvency as at the valuation date.

Main financial assumptions

Assumption	Pensioners	Non-pensioners
Illustrative single equivalent assumptions		
Discount rate	4.3% pa	3.4% pa
Rate of CPI inflation	3.2% pa	3.3% pa
Pension increases in payment	Set consistently with market-based pricing for the relevant minimums and maximums	

Main demographic assumptions

Assumption	
Retirement age	65, with late retirement uplifts (designed to be cost neutral on the solvency basis) applied to reflect the value of benefits that can be taken unreduced at an earlier age
Proportion with dependants	As for 2023 technical provisions
Mortality assumption	As for 2023 technical provisions except for base table scaling factors (base tables used are 103% S2PMA_L / 97% S3PFA for males / females respectively)

DocuSign Envelope ID: DA587878-E4FC-4917-B714-F32571D91C43

Key documents

- Certification of the calculation of the technical provisions
- Statement of Funding Principles
- Schedule of Contributions and certificates
- Certification of Section 179 valuation