Scheme funding report

Actuarial valuation of the University of Oxford Staff Pension Scheme at 31 March 2022

Prepared for: OSPS Trustee Limited
Prepared by: J M Harvey FIA
Date: 27 June 2023

QAS Institute and Faculty of Actuaries ® Quality Assurance Scheme

AON

Introduction

Why bring you this report?

Section 224(2)a of the Pensions Act 2004 requires the Trustee to receive this formal report from me (as Scheme Actuary) setting out the results and conclusions from the actuarial valuation of your Scheme at 31 March 2022.

My report summarises the key aspects of the valuation process, including:

- The funding objectives and background details
- The technical provisions
- The corresponding future service costs
- The agreed contributions
- The results on the solvency basis.

It also includes the results of the section 179 ('PPF') valuation at the same date.

Some further information is provided for compliance purposes.

In the main part of this report, defined contribution (DC) benefits (including DC AVCs) have been **excluded** from the valuation results because in my view this provides a clearer picture. In order to comply formally with the legislation, an alternative presentation of the valuation results (which includes DC benefits) is provided as an appendix.

Next steps

Some key deadlines are highlighted on the right.

The valuation process is complete when all the following have been agreed and are in place:

- This scheme funding report, including my certification of the technical provisions
- The updated statement of funding principles
- The new schedule of contributions, including my actuarial certification of the adequacy of the contributions payable.

DocuSigned by:
Jay Harvey
A6D47AEB59834E0...

Signature

27 June 2023

Date

Key deadlines

A copy of this report must be provided to the Employers within 7 days of the Trustee receiving it.

By 30 June 2023: The details from the section 179 valuation certificate must be submitted to the PPF via Exchange to meet the statutory deadline.

By 11 July 2023: The valuation summary must be submitted to The Pensions Regulator via Exchange within a "reasonable period" (generally 10 working days).

By 30 September 2023: A summary funding statement must be provided to members within 18 months of the valuation date.

By 31 March 2025: The next actuarial valuation and section 179 valuation must be carried out at an effective date no later three years after the effective date of this valuation.

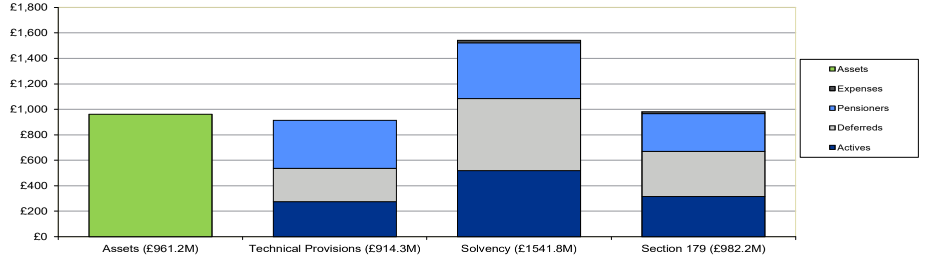
The terms in this report

A summary of any 'shorthand' legal references and a glossary of key valuation terms can be found at the back of this report.

At a glance…

As your Scheme Actuary, I have carried out an actuarial valuation of the Scheme at 31 March 2022.

Funding summary



Technical provisions

£46.9M

surplus

Solvency estimate

£580.6M

deficit

Section 179 ('PPF')

£21.0M

deficit

Contributions

Following discussions, it has been agreed that the Employers will pay (with effect from 1 October 2023):

- In respect of DB members, 16.5% of Pensionable Salaries for the future accrual of benefits; and
- In respect of DC members, 10%/12%/14% of Pensionable Salaries into members' Retirement Accounts in relation to 4%/6%/8% Cost Plan Members respectively.

It has also been agreed that (with effect from 1 October 2023) the Scheme will meet its own running costs from the Scheme's assets, including expenses relating to both the DB and DC Sections and the cost of Pension Protection Fund and other statutory levies. The cost of providing ill-health and death-in-service benefits for DC members will also be met from the Scheme's assets.

As part of the valuation discussions, it was also agreed that the contribution rates paid by members of the DB Section would be reduced with effect from 1 April 2024, and the 5% pa cap on indexation for benefits accrued from 1 April 2018 increased to 8% pa. Please refer to pages 15 and 16 of this report for further details.

Important

The report concentrates on the Scheme's financial position at the valuation date. As time moves on, the Scheme's finances will fluctuate.

Please refer to page 15 of this report for details of how the position has changed at the time of writing. However, if you are reading this report some time after it was produced, the Scheme's financial position is likely to have changed further.

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Background to your actuarial valuation

Data and benefits valued

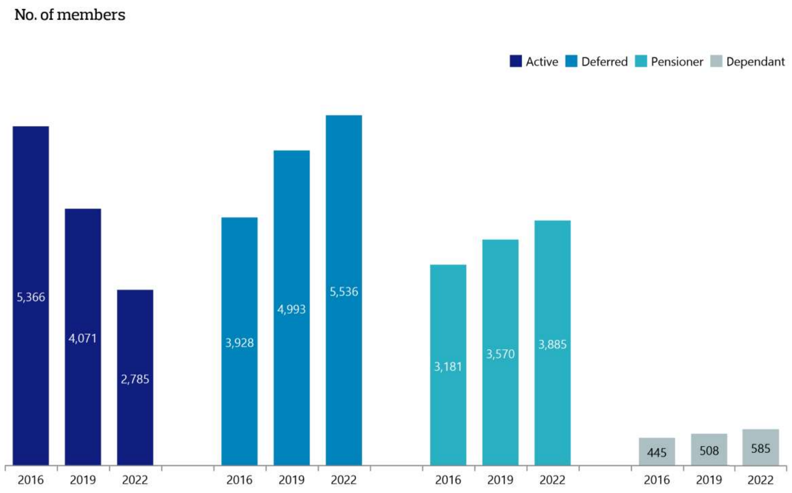
Your actuarial valuation was based on a snapshot of member data and my understanding of the Scheme's benefits.

Member data (DB Section)

The DB Section of the Scheme has continued to mature with the proportion of pensioners increasing.

The membership numbers are shown graphically below. In addition, there were 1,329 'suspended' members at the valuation date (i.e. undecided leavers with between 3 and 24 months' service with an entitlement to either a refund of contributions or a transfer to another pensions arrangement) in respect of whom approximate allowance has been made within the valuation calculations.

Further details of the membership data used for the actuarial valuation calculations are provided in an appendix.



Benefits

Members are entitled to the benefits defined in the Rules. A summary of the benefits is included in an appendix.

In valuing these benefits, I have applied some judgment in the following key areas:

GMP equalisation

Schemes (like this one) that contracted-out of the State Earnings Related Scheme at any point during the period from 17 May 1990 to 5 April 1997 need to equalise benefits for the effects (if any) of unequal Guaranteed Minimum Pensions. I have not made an explicit allowance for GMP equalisation in this valuation as the impact on the Scheme is expected to be negligible.

Discretionary benefits

The Scheme has a history of allowing active members who joined the Scheme before 1 August 2004 to retire from age 60 on unreduced benefits. Allowance for this discretionary practice was made in the valuation. Further details of the assumptions are set out later in this report. I am not aware of the Scheme having a history of paying any other discretionary benefits and no allowance was made in this valuation for any other discretionary benefits (though please refer to the later section of this report relating to developments since the valuation date).

Funding objectives and investment strategy

The Trustee's funding objective is to hold assets which are at least equal to the technical provisions (i.e. to meet the statutory funding objective).

Your statutory funding target

The Trustee's statutory funding objective is to be fully funded on the technical provisions basis.

Covenant assessment

A key factor in setting the funding objective is the Trustee's assessment of the employer covenant. The Trustee commissioned Ernst & Young to assess the covenant of the University (and the other participating employers) as part of the valuation process. The key conclusion of the review was that the covenant remained rated as "strong" on the Pensions Regulator's 4-point scale. This has been taken into account in setting the assumptions to be adopted for the technical provisions and in considering the contribution rates that were agreed with the University.

Long-Term Funding Target (LTFT)

The Trustee agreed a LTFT with the University as part of the previous valuation, which was reviewed as part of this valuation. The LTFT is to reach 105% funded on a basis consistent with the technical provisions, subject to the following changes:

- A discount rate of 0.5% pa above the gilt yield curve both pre and post-retirement; and
- No deduction for the assumed inflation risk premium in the assumption for RPI inflation.

The aim was to reach the LTFT within a period of 15-25 years from the effective date of the previous valuation (i.e. by 2044 at the latest). However, as a result of the material improvement in the Scheme's funding position since the valuation date (see later section of this report), the Scheme is now estimated to be significantly ahead of this target. The Trustee and University will continue to work together to keep the LTFT (and investment strategy) under review.

Secondary targets

Many schemes, like this one, also set secondary (or 'long-term') funding targets to aid in their longer-term planning and decision making.

Over time, there is expected to be an increased focus on such long-term funding targets and how they interact with the technical provisions measure.

Investment strategy

The assets held at the valuation date are described in an appendix to this report and the Trustee's investment strategy is set out in its statement of investment principles.

At the valuation date, the strategy was to hold 67.5% of the Scheme's assets in a diversified range of growth assets to generate investment returns. 12.5% was to be invested mainly in index-linked gilts that aim to offer protection against movements in long-term interest rates or inflation. The remaining 20% was to be invested in liquid credit (including corporate bonds and other inflation-linked assets).

The Trustee's intention is to de-risk the Scheme's investment strategy by reducing its exposure to growth assets (and increasing its exposure to index-linked gilts) over the long-term as the Scheme matures. Given the material improvement in the Scheme's financial position since the valuation date, the Trustee (in consultation with the University) has taken steps to accelerate this de-risking.

At the time of writing this report, the Trustee's investment strategy was to hold 37.5% of the Scheme's assets in growth assets, with 37.5% invested in index-linked gilts and the remaining 25% invested in liquid credit. The Trustee continues to keep the investment strategy under review, in consultation with the University.

A prudent allowance for the expected returns of the investment strategy in force at the valuation date was included in the discount rate used for the valuation results at 31 March 2022. With effect from 31 March 2023, a commensurate reduction will be made to the discount rate to allow for the de-risking that has taken place since the valuation date.

The Scheme's assets of £961.2M (excluding AVCs and other DC assets) are described in more detail in an appendix.

Method & assumptions

The Trustee and University have agreed the method and assumptions used to calculate the technical provisions and the cost of future benefit accrual.

Method

As for the previous valuation, the technical provisions have been calculated using the projected unit method.

This method, with a three-year control period, has also been used to calculate the cost of future benefit accrual. (As there was a deficit at the last valuation, a control period equal to the length of the recovery plan was adopted for the previous valuation.)

The assets are valued at the audited value contained in the Trustee Report and Accounts for the year ended 31 March 2022. All DC assets have been excluded in the main body of this report as the assets exactly match the Scheme's liability in this respect (an alternative presentation of the results including the DC assets is in included as an appendix).

Further information

Your Actuarial valuations handbook contains further information on valuation methods and Aon's approach to assumption setting.

Assumptions

The table below summarises the key assumptions used to calculate the valuation results at 31 March 2022, together with those used for the previous valuation, and the reasons for any change.

Further details of all the assumptions are set out in the statement of funding principles dated 27 June 2023. This document also sets out how the assumptions will change for calculations with effective dates on or after 31 March 2023 (to reflect the de-risking of the Scheme's investment strategy that has taken place since the valuation date).

Assumption	Previous valuation	This valuation	Rationale for change
Pre-retirement discount rate	Gilt yield curve plus 2.25% pa	Gilt yield curve plus 2.25% pa	Updated for market conditions only
Pre-retirement discount rate	Gilt yield curve plus 0.5% pa	Gilt yield curve plus 0.5% pa	Updated for market conditions only
RPI	Break-even RPI curve less 0.3% pa	Break-even RPI curve less 0.5% pa pre-2030 and 1.0% pa post-2030	Updated for market conditions and to reflect the significant change in the observed inflation risk premium since the last valuation
CPI	RPI inflation assumption less 1.0% pa	RPI inflation assumption less 1% pa pre-2030 and 0.1% pa post-2030	Updated for market conditions and to reflect the change in Aon's best estimate of the future long-term difference between RPI and CPI in light of the planned RPI reform

Assumption	Previous valuation	This valuation	Rationale for change
Pensionable Salary increases	RPI inflation assumption	RPI inflation assumption	Updated for market conditions and related inflationary changes summarised above
Post-retirement mortality - base table	Non-Pensioners: 105% (males) / 100% (females) of standard S3PxA medium tables Pensioners: 100% (males) / 95% (females) of standard S3PxA medium tables	Non-Pensioners: 105% of standard S3PxA medium tables for both males and females Pensioners: 105% of standard S3PxA medium tables for both males and females	Updated for the results of the Scheme's latest postcode and experience analysis and Aon's best estimate of the likely impact of COVID-19
Post-retirement mortality - improvements	CMI 2018 core projections with Sk=7.0, A=0.5% and long-term improvement rate of 1.5% pa for men and women	CMI 2021 core projections with Sk=7.0, A=0.5% and long-term improvement rate of 1.5% pa for men and women	Updated for latest CMI mortality projections model

Valuation results

Past service results

The Scheme's technical provisions and resulting funding position have been calculated at 31 March 2022.

Results

	Technical provisions (£M)
Value of past service benefits for:	
Actives	275.5
Deferreds	261.2
Pensioners and dependants	377.6
Total past service liabilities	914.3
Assets	961.2
Surplus / (deficit)	46.9
Funding ratio	105%

My formal certificate of your technical provisions is included in this report.

Sensitivity of the funding level

The key assumptions are the discount and inflation rates and the Scheme membership's mortality rates. The approximate sensitivity of the funding level to these key assumptions is as follows (ignoring any changes to the value of the assets):

Discount rate decreases by 0.25%

A 0.25% pa decrease in the discount rate (pre and post-retirement) reduces the funding level to around 100%.

RPI inflation increases by 0.25%

A 0.25% pa increase in the RPI inflation assumption (and the knock-on impact on the other assumptions derived from it) reduces the funding level to around 101%.

Mortality scaling factors reduce by 10%

A 10% reduction to the scaling factors that are applied to the base mortality tables (vey broadly equivalent to an increase in life expectancies of around 1 year) reduces the funding level to around 102%.

Since the valuation date, market conditions have changed significantly. The Trustee has had regard to post-valuation date experience when agreeing the valuation outcome with the University, further details of which are set out in a later section of this report.

Future service results

I have valued the benefits that DB members will earn in the Scheme in future, at 31 March 2022.

Results

	% Pensionable Salary
Accruing benefits	27.7%
Death in service lump sum	0.8%
Less member contributions	(8.4%)
Net cost to the Employers	20.1%

Sensitivity of the cost of future benefit accrual

The key assumptions are the discount and inflation rates and the Scheme membership's mortality rates. The sensitivity of the cost of future benefit accrual to these key assumptions is as follows:

Discount rate decreases by 0.25%

A 0.25% pa decrease in the discount rate increases the cost of future benefit accrual by around 2% of Pensionable Salaries.

RPI inflation increases by 0.25%

A 0.25% pa increase in the RPI inflation assumption (and the knock-on impact on the other assumptions derived from it) increases the cost of future benefit accrual by around 1.5% of Pensionable Salaries.

Mortality scaling factors reduce by 10%

A 10% reduction to the scaling factors that are applied to the base mortality tables (vey broadly equivalent to an increase in life expectancies of around 1 year) increases the cost of future benefit accrual by around 1% of Pensionable Salaries.

Developments since the valuation date

Since the valuation date, the Scheme's funding position has improved significantly, to the extent that the Scheme is currently estimated to be comfortably in surplus relative to both its technical provisions and Long-Term Funding Target (LTFT).

This improvement has mainly arisen due to the significant rise in gilt yields since the valuation date, as a result of which the value placed on the Scheme's liabilities has fallen significantly. At the same time, the Scheme's assets have also fallen in value, but to a much lesser extent. Overall, this means that both the funding level and the technical provisions surplus have increased since the valuation date.

Implications for funding and investment strategy

Given the material nature of this funding improvement, the Trustee (in consultation with the University) has taken steps to de-risk the Scheme's investment strategy (as explained earlier in this report on page 9). The two most notable changes are that the Scheme is now targeting to hold 37.5% in index-linked gilts (compared to 12.5% at the valuation date) to better match the Scheme's inflation-linked liabilities and the Scheme has reduced its exposure to equities from 40% to 10%.

The changes to the Scheme's investment strategy mean that the expected return on the Scheme's assets will have reduced (relative to gilt yields) since the valuation date. To reflect this, and to reflect the much higher proportion of assets held in index-linked gilts, the Trustee and the University have agreed to strengthen the technical provisions assumptions for calculations on and after 31 March 2023 by:

- Reducing the pre-retirement discount rate from 2.25% pa in excess of gilt yields to 1.75% pa in excess of gilt yields; and
- Removing the assumed inflation risk premium when deriving the RPI inflation assumption (i.e. setting the RPI inflation assumption in line with the break-even RPI curve to fully reflect the cost of hedging inflation).

Had these changes been made at the valuation date, it would have resulted in an increase to the technical provisions of around 20%. However, allowing for market conditions at the end of May 2023, the Scheme is now estimated to have a funding level of in excess of 120% on this basis, equivalent to a surplus of over £100M.

Changes to contributions and benefits

The significant improvement in the funding position, together with the strength of the covenant supporting the Scheme, has allowed the Trustee and University to agree a package of contribution rate and benefit improvements that are to the benefit of both DB and DC members.

In summary, it has been agreed that:

- DB member benefit improvements:
  - Benefits that have been earned since 1 April 2018 attract increases linked to CPI inflation capped at 5% pa (both before and after retirement). It has been agreed that a discretionary increase of 3% will be applied to these benefits with effect from April 2023 to partly reflect the high levels of inflation experienced in late 2022/early 2023. As such, these benefits will be increased by 8% with effect from April 2023.
  - It has also been agreed to amend the Rules relating to these post April 2018 benefits going forward such that the cap on increases will be permanently increased from 5% pa to 8% pa.
- DB member contribution rates:
  - With effect from 1 April 2024 (the earliest implementable date from an administrative perspective), member contribution rates for Lower/Standard/Higher Cost Plan Members will reduce from 6.6%/8.0%/9.6% of Pensionable Salary to 5.6%/6.6%/7.8% of Pensionable Salary respectively.
- DC employer contribution rates:
  - With effect from 1 October 2023, the employer contributions paid to DC Section members' Retirement Accounts will increase by 4% of Pensionable Salary to 10%/12%/14% of Pensionable Salary in relation to 4%/6%/8% Cost Plan Members respectively.

Solvency position

I have estimated the Scheme's statutory solvency position at 31 March 2022.

Results

	Solvency (£M)
Value of past service benefits for:	
Actives	519.4
Deferreds	565.9
Pensioners and dependants	435.2
Expenses	21.3
Total past service liabilities	1,541.8
Assets	961.2
Surplus / (deficit)	(580.6)
Funding ratio	62%

This solvency estimate represents the estimated cost of purchasing annuities at the valuation date from an insurance company to meet the Scheme's benefits, together with an allowance for the estimated cost of winding-up the Scheme.

The assumptions used in the solvency estimate are summarised in an appendix.

In practice

Supply and demand factors mean that the actual cost of purchasing annuities may be different to the above solvency estimate. There may also be some practical barriers to voluntarily winding up the Scheme.

If the Scheme were to be discontinued with no solvent employer, at the valuation date, the assets were unlikely to be sufficient to provide the benefits in full. If this were the case then:

- Benefits corresponding to those covered by the PPF would be met first (either through the PPF or, if there were sufficient funds, by securing these benefits with an insurance company).
- Any remaining assets would be used to secure part of the remaining benefits with an insurance company.

The proportion of full benefits provided will vary from member to member and may be higher or lower than the statutory estimate of solvency quoted above.

Since the valuation date the solvency position has improved significantly, however as at the end of May 2023 a small deficit was estimated to remain.

Why higher?

The solvency estimate is higher than the technical provisions.

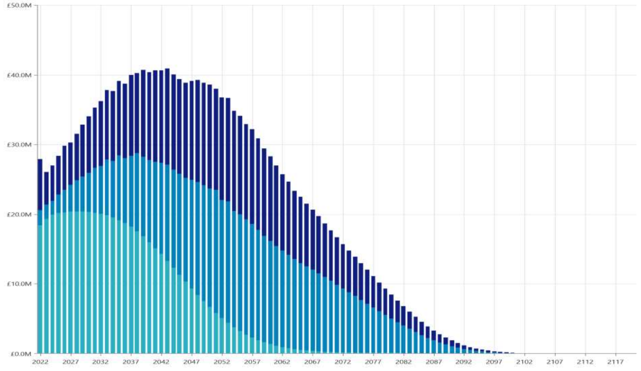
Broadly, this is for the following reasons:

- Insurers will typically hold less risky assets which provide **lower investment returns** than are expected to be achieved on the Scheme's assets
- Insurers typically hold **larger margins**, for example by assuming that members will live longer than is assumed in calculating the technical provisions
- Insurers need to cover **costs**, including administering the benefits, and also make a **profit**, and
- Allowance is made for the **cost of winding up** the Scheme.

Funding and investment risks

The Scheme's funding level is likely to exhibit volatility.

The benefit payments from the Scheme are expected to be made for a very long period. The chart below shows the projected estimated cashflows on the technical provisions basis for the Scheme.



Key risks

The Scheme faces a number of key risks which could affect its future cashflows and funding position, including:

Funding risk

The risk that the technical provisions are set too low and prove insufficient to meet the liabilities (e.g. in the event of unexpected discontinuance).

Investment risk

The risk that investment returns are lower than assumed in the valuation, and also that the assets are volatile and move out of line with the liabilities, so the funding position is volatile.

Liquidity risk

The risk that cashflows are higher than expected as members commute more than is assumed or take transfer values, possibly leading to the sale of assets at inopportune times.

Longevity risk

The risk that Scheme members live for longer than assumed and that pensions would therefore need to be paid for longer.

Inflation risk

The risk that the relevant inflation metric is higher than assumed, increasing the pensions that need to be paid.

Sponsor risk

The risk that the sponsor is no longer willing or able to support the Scheme and fund any future losses that arise.

Other risks

Issues relating to climate change and other environmental risks as well as long-term uncertainty around geo-political, societal and technological shifts may also impact funding, investments and sponsor covenant of the Scheme.

Risk mitigation

The Trustee takes an integrated approach to managing the Scheme's risks. The key actions taken to mitigate the risks include:

Investment

- Material de-risking of the Scheme’s investment strategy has taken place during the valuation process as described earlier in this report. The Scheme holds a diversified investment strategy with an increased allocation to index-linked gilts to better match changes in the value of the Scheme’s liabilities, thus reducing funding volatility.

Covenant

- The Trustee commissions an independent third-party assessment of the covenant supporting the Scheme as part of each valuation. The Trustee also monitors the covenant between valuation dates. The Trustee sets its funding and investment strategy to be consistent with its view that the Scheme is supported by a strong covenant.

Future contributions

Agreed contributions

As a result of this valuation, the Trustee and the University have agreed a new contribution schedule. The recovery plan agreed at the last valuation is no longer required as the Scheme was in surplus at the valuation date.

Employer contributions

Following discussions, it has been agreed that the Employers will pay (with effect from 1 October 2023):

- In respect of DB members, 16.5% of Pensionable Salaries for the future accrual of benefits; and
- In respect of DC members, 10%/12%/14% of Pensionable Salaries into members' Retirement Accounts in relation to 4%/6%/8% Cost Plan Members respectively.

The above contributions take account of the benefit improvements and changes to member contributions agreed since the valuation date and are expected to be sufficient to meet the cost of accruing benefits on the revised technical provisions basis based on market conditions at the end of May 2023.

It has also been agreed that (with effect from 1 October 2023) the Scheme will meet its own running costs from the Scheme's assets, including expenses relating to both the DB and DC Sections and the cost of Pension Protection Fund/other statutory levies. The cost of providing ill-health and death-in-service benefits for DC members will also be met from the Scheme's assets.

Contributions are payable monthly, with the contributions due in respect of a particular month payable within 7 days of the end of the calendar month to which they relate.

Member contributions

In respect of DB members, for Lower/Standard/Higher Cost Plan Members, member contribution rates will reduce from 6.6%/8.0%/9.6% of Pensionable Salaries to 5.6%/6.6%/7.8% respectively, with effect from 1 April 2024 (the earliest implementable date from an administration perspective), with any AVCs payable in addition.

In respect of DC members, member contributions will continue at the current rates (which vary depending on the tier that members elect to be in), with AVCs payable in addition.

Schedule of contributions

These contributions are set out in the schedule of contributions.

Although the valuation outcome has regard to the significant improvement in the Scheme's funding position since the valuation date, my certification of the schedule is based on the position at the valuation date.

A full review of the Employers' contributions will be completed no later than following the next valuation, which is due to take place at 31 March 2025.

Projections

I have illustrated below how I expect the Scheme's funding position to develop in the future.

Projected future funding levels

I estimate that, by the next valuation, which will be due with an effective date of 31 March 2025:

- The Scheme will continue to be comfortably in surplus relative to both its **technical provisions** and Long-Term Funding Target (LTFT), and
- The **solvency** level will be approaching 100%.

Assumptions

These estimates allow for the estimated improvement in the Scheme's funding position over the period to the end of May 2023 and assume that:

- The experience of the Scheme for the remainder of the period until the next valuation date is in line with the assumptions underlying the revised technical provisions.
- The assumptions underlying the technical provisions and solvency bases remain unchanged (but the changes to the technical provisions assumptions as detailed in the Statement of Funding Principles for calculations with effective dates on or after 31 March 2023 have been reflected).
- The contributions on the previous page are received.

Section 179 valuation

Background and method

I have also carried out a section 179 valuation of the Scheme at 31 March 2022, at the request of the Trustee.

By law, pension schemes must submit a section 179 valuation to the Pension Protection Fund (PPF) at least once every 3 years. The PPF uses the information to calculate the Pension Protection Levy.

The section 179 valuation has been conducted in line with:

- The Pension Protection Fund (Valuation) Regulations 2005;
- Section 179 of the Pensions Act 2004; and
- Version number G9 of the section 179 guidance and version number A10 of the section 179 assumptions issued by the Board of the PPF.

For PPF purposes only

This section 179 valuation should not be used for other purposes, such as determining future contribution levels, assessing the overall solvency position of the Scheme or deriving pension costs for company accounting.

Benefits valued

The benefits that are protected under the PPF are restricted below the full Scheme benefit levels, and the section 179 valuation requires a proxy of the PPF benefits to be valued. The details are described in an appendix.

The section 179 valuation results are therefore not representative of the cost of buying out the full benefits of the Scheme with annuity providers.

Valuation date

The valuation date of 31 March 2022 reflects the date of the Scheme's latest audited Trustee Report & Accounts.

Assets

I have used the same value of the assets as in the rest of this report.

This asset value does not reflect any reduction to allow for potential sale costs of assets on discontinuance.

Gilt yields vs assets held

For a section 179 valuation, the Scheme's liabilities are valued with reference to gilt yields.

Because the Scheme holds non-gilt assets too, the section 179 funding position may be volatile. For example, equity and property asset values are not directly affected by bond yield movements.

Approximations

It is common to make some approximations in a section 179 valuation to avoid disproportionate calculation complexity. The approximations used for this valuation are described in an appendix.

Please note that the PPF require that any approximations should be expected to **overstate** the liabilities. Accordingly, the PPF levies based on the results of this valuation are likely to be slightly higher than if no approximations were made. I believe that the additional cost of valuing the benefits without these approximations would not be offset by the reduction in levies.

These approximations do not prevent me from certifying the valuation results for the PPF, as I am only required to confirm that the PPF liabilities have not, in my opinion, been understated.

Assumptions

The assumptions adopted for a section 179 valuation are prescribed by the PPF and the assumptions used for this valuation are provided in an appendix.

The key assumptions used are the discount rates (which are derived based on prevailing gilt yields) and the mortality rates.

Legal requirements

Legislation requires the liabilities to be valued as the estimated cost of securing the PPF level of benefits by means of an annuity purchased at the market rate at the valuation date.

Results and next steps

Results

	PPF section 179 (£M)
Liabilities for active members (excluding expenses)	317.3
Liabilities for deferred members (excluding expenses)	352.1
Liabilities for pensioner and dependant members (excluding expenses)	298.1
Estimated expenses of winding up	3.0
Estimated expenses of benefit installation/payment	11.7
Total PPF protected liabilities	982.2
Total assets	**961.2**
PPF surplus/(deficit)	(21.0)
PPF funding ratio (%)	98%

30 June 2023

The Trustee will need to submit the information shown on the section 179 valuation certificate to the PPF, using the Scheme Return section of The Pensions Regulator's Exchange system, within 15 months of the valuation date, i.e. by 30 June 2023. I will carry this out on the Trustee's behalf.

Compared with last valuation date

The Scheme's PPF section 179 funding ratio at the last valation at 31 March 2019 was 74%. The funding ratio has therefore improved by 24% at 31 March 2022.

I am not aware of any 'external liabilities' of the Scheme. (These are liabilities which 'do not fall due to the members of the scheme'.)

Key date for the Trustee

The information shown on the section 179 valuation certificate must be submitted to the PPF, using the Scheme Return section of The Pensions Regulator's Exchange system, within 15 months of the valuation date, i.e. by 30 June 2023. I will submit this information on the Trustee's behalf.

Certificates

Certificate of technical provisions

Actuarial certificate given for the purposes of Regulation 7(4)(a) of the Occupational Pension Schemes (Scheme Funding) Regulations 2005

University of Oxford Staff Pension Scheme

Calculation of technical provisions

I certify that, in my opinion, the calculation of the Scheme's technical provisions as at 31 March 2022 is made in accordance with regulations under section 222 of the Pensions Act 2004.

The calculation uses a method and assumptions determined by the Trustee of the Scheme and set out in the Statement of Funding Principles dated 27 June 2023.

DocuSigned by:
Jay Harvey
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Signature

27 June 2023

Date

Name	J M Harvey
Employer	Aon Solutions UK Limited
Qualification	Fellow of the Institute and Faculty of Actuaries
Address	Aon 1 Redcliff Street Bristol BS1 6NP

Section 179 valuation certificate

Scheme / Section details

Full name of scheme	University of Oxford Staff Pension Scheme
Name of section, if applicable	Not applicable
Pension Scheme Registration Number	10009029
Address of scheme (or section, where applicable)	University Offices, University of Oxford, Wellington Square, Oxford
Postcode	OX1 2JD

Section 179 valuation

Effective date of this valuation (dd/mm/yyyy)	31/03/2022

Guidance and assumptions

s179 guidance used for this valuation	G9
s179 assumptions used for this valuation	A10

Assets

Total assets (this figure should not be reduced by the amount of any external liabilities and should include the insurance policies referred to below)	£961,153,000
Date of relevant accounts (dd/mm/yyyy)	31/03/2022
Percentage of the assets shown above held in the form of a contract of insurance where this is not included in the asset value recorded in the relevant scheme accounts	0%

NOTE: This entry should reflect any difference between the value placed on contracts of insurance within the overall asset value above, and the value placed on them within the relevant scheme accounts. The entry will be positive if the value of the contracts within the overall asset value above is greater than the value shown in the relevant scheme accounts, and negative if the converse applies.

Liabilities

Please show liabilities for:

Active members (excluding expenses)	£317,337,862
Deferred members (excluding expenses)	£352,041,213
Pensioner members (excluding expenses)	£298,069,934
Estimated expenses of winding up	£3,000,000
Estimated expenses of benefit installation/payment	£11,714,050
External liabilities	£ NIL
Total protected liabilities	£982,163,059

Please provide the percentage of the liabilities shown above that are fully matched by insured annuity contracts for:

Active members	0%
Deferred members	0%
Pensioner members	0%

Proportion of liabilities

Please show the percentage of liabilities which relate to each period of service for:

	Before 6 April 1997	6 April 1997 to 5 April 2009 (inclusive)	After 5 April 2009
Active members	5%	25%	70%
Deferred members	21%	38%	41%
	Before 6 April 1997	After 5 April 1997	
Pensioner members	27%	73%	

Number of members and average ages

For each member type, please show the number of members and the average age (weighted by protected liabilities) as at the effective date of this valuation. Average ages should be rounded to the nearest whole year.

	Number	Average age
Active members	2,785	52
Deferred members	5,536	48
Pensioner members	4,470	70

I certify that this valuation has been carried out in accordance with the Pension Protection Fund (Valuation) Regulations 2005 and with the appropriate section 179 guidance and assumptions issued by the Board of the Pension Protection Fund. I also certify that the calculated value of the protected liabilities is, in my opinion, unlikely to have been understated.

DocuSigned by:

Signature: Jay Harvey
A6D47AEB59834E0...

Date: 27 June 2023

Name: JM Harvey

Employer: Aon Solutions UK Limited

Qualification: Fellow of the Institute and Faculty of Actuaries

Further information

Reference appendices and glossary

Membership data

The results in this report are based on the membership data summarised below.

I have conducted high level checks on the membership data provided and I am satisfied with its adequacy for the purpose of this actuarial valuation.

The average ages shown in these tables are unweighted.

Active members	Number	Average age	Total Pensionable Salaries (£000 pa)	Average Pensionable Salaries (£ pa)	Average Pensionable Service (years)
2016	5,366	43.3	123,500	23,015	6.3
2019	4,071	46.1	92,988	22,842	8.5
2022	2,785	49.6	69,951	25,117	11.8

Note: Average service includes transferred-in service.

Deferred members	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2016	3,928	45.7	6,056	1,542
2019	4,993	45.5	8,051	1,612
2022	5,536	46.6	9,792	1,768

Note: The deferred pension amounts include revaluations up to the valuation date and exclude ‘suspended’ members; an approximate allowance for whom has been included in the liabilities.

Pensioners	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2016	3,181	70.7	12,083	3,798
2019	3,570	72.0	14,186	3,974
2022	3,885	73.2	16,049	4,131

Dependants	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2016	445	70.1	1,247	2,802
2019	508	71.8	1,463	2,880
2022	585	74.3	1,785	3,052

Note (pensioners and dependants): The pension amounts shown above include the increase awarded on 1 April following the valuation date.

Benefits valued

A Summary of the main benefits of the DB Section of the Scheme considered in this valuation is set out below. Further details of the benefits valued can be found in the Scheme's Trust Deed and Rules.

Normal Pension Age	Pre 2013 pension: 31 July immediately preceding 66th birthday. Post 2013 pension: The later of the member's 65th birthday and the member's birthday immediately preceding their State Pension Age.
Pensionable Salary	Basic salary or wages from the Employer, including regular overtime and any other pensionable recurrent additions, but excluding other overtime and fluctuating emoluments.
Member Contributions	Member contributions up to 31 March 2024/with effect from 1 April 2024: ▪ 6.6%/5.6% for Lower Cost Plan Members; ▪ 8.0%/6.6% for Standard Cost Plan Members; and ▪ 9.6%/7.8% for Higher Cost Plan Members.
Final Pensionable Salary	The highest Pensionable Salary in any period of 12 consecutive months in the 5 years before membership ceases (or 31 March 2018 if earlier).
Normal Retirement Benefits	▪ Pre 2013 pension: A pension of 1/80 of a member's Final Pensionable Salary for each year of Pensionable Service, plus a lump sum of 3/80 of Final Pensionable Salary for each year of Pensionable Service. ▪ Post 2013 pension: A CARE pension of either 1/80, 1/85 or 1/90 of a member's Pensionable Salary for each year of Pensionable Service, plus a lump sum of 3 times the CARE pension. The accrued pension calculated as above is increased each year over the period to retirement in line with the pension increase requirements described below.
Early Retirement Pension	With the Employer's consent a pension and lump sum is provided on retirement after the age of 55. For members who joined the Scheme prior to 1 August 2004, this pension is payable unreduced if retirement is after age 60.

Incapacity and Ill Health Pensions

In the event of premature retirement due to serious ill health or incapacity, an immediate pension may be paid based on prospective Pensionable Service to Normal Pension Age plus a lump sum of three times the pension with no reduction being applied due to early payment.

Leaving Service

- A deferred pension payable from Normal Pension Age; or
- A transfer payment to either another employer's scheme or a suitable insurance policy, equivalent in value to the deferred pension; or
- Members with less than three months of Pensionable Service are entitled to a return of their contributions; or
- Members with between three months and two years of Pensionable Service are entitled to either a return of their contributions, or a cash lump sum.

Pension increases

Pensions are increased both before and after retirement on an annual basis in line with the following:

- Pre 2013 pension: The average of the RPI and the CPI.
- Post 2013 pension: The average of the RPI and the CPI capped at 8% per annum (with the exception of members who joined OSPS before 1 February 2013, where pensions are increased in line with RPI capped at 8% over the period to retirement)
- Post 2018 pension: CPI capped at 5% per annum (although, as agreed as part of the 2022 valuation, the Rules are to be amended to reflect an increase in the cap from 5% pa to 8% pa The liabilities shown in this report are before allowing for this benefit change).

Death Benefits

If a member dies in service, the following benefits may be paid:

- Pre 2013 pension: A dependant's pension of two-thirds of the member's pension at date of death, or revalued to date of death if the member is in deferment, plus the member's revalued lump sum.
- Post 2013 pension: A dependant's pension of half of the member's pension at the date of death, or revalued to date of death if the member is in deferment, plus the member's revalued lump sum.

If a member dies after retiring, the following benefits may be paid:

- Pre 2013 pension: If the member dies within five years of retiring, a lump sum equal to the balance of five years' pension payments, plus a dependant's pension of two-thirds of the member's pension (before any commutation for an additional lump sum).
- Post 2013 pension: If the member dies within five years of retiring, a lump sum equal to the balance of five years' pension payments, plus a dependant's pension of half of the member's pension (before any commutation for an additional lump sum).

Children Benefits

Children's allowance of 25% of prospective pension for each child, up to a maximum of two at any one time. Allowances are paid until the attainment of age 17, or a higher age if the child remains in full-time education.

Assets

Information on the assets used in this valuation is covered here.

The audited accounts for the Scheme for the year ended 31 March 2022 show the assets of the DB Section were £963,528K, of which £2,375K related to the value of Money Purchase and AVC investments.

This results in a net DB Section asset value of £961.2M being reflected in the valuation (rounded up from £961,153K).

The audited accounts also show that the Scheme held £24,471K of net assets in the DC Section at 31 March 2022.

If DC benefits were included…

The results shown in this report **exclude** all DC-related benefits. On this page, I present the results if they had been **included**.

Defined contribution benefits (including DC Section assets and the value of Money Purchase and AVC investments held in the DB Section) amounted to £26.8M at the valuation date. If these benefits are included in the valuation:

- The value of the assets is £988.0M.
- The technical provisions are £941.1M (funding level of 105%).
- The value of the solvency liabilities is £1,568.6M (solvency ratio 63%).

Previous valuation results

This page sets out the results and conclusions of the previous actuarial valuation of the Scheme at 31 March 2019.

Key results

The key results from the previous valuation at 31 March 2019 were:

- There was a deficit of £112.8M relative to the **technical provisions**, which corresponded to a funding level of 87%.
- There was an estimated deficit of £498.7M relative to the **solvency** liabilities, which corresponded to a funding level of 60%.

Recovery plan and contributions

Following discussions at the last valuation, it was agreed that the Employers would continue to pay 19.0% of Pensionable Salaries in respect of both DB and DC members of the Scheme, with the excess contributions above those needed to provide for DC members being used to help eliminate the deficit relative to the technical provisions.

The resulting recovery plan was designed to restore the technical provisions funding level to 100% by 31 January 2028 through a combination of:

- Excess contributions as described above, and
- Investment returns on the Scheme's assets of 2.5% pa above the gilt yields.

In addition, the Employers agreed to continue e to reimburse the Scheme in respect of Pension Protection Fund (PPF) and other levies collected by the Pensions Regulator.

Member contributions for members of the DB Section were agreed to continue as follows:

- Lower Cost Plan Members - 6.6% of Pensionable Salaries
- Standard Cost Plan Members – 8.0% of Pensionable Salaries
- Higher Cost Plan Members – 9.6% of Pensionable Salaries

Notable changes since the previous valuation

There have been some significant changes to the Scheme since the previous valuation, which have impacted the funding assessment.

Benefit changes

In October 2018, the Lloyds Bank Court Judgement established that pension schemes cannot provide unequal benefits in respect of post 17 May 1990 service to men and women as a consequence of the Guaranteed Minimum Pension ('GMP') element of the pension being unequal. A subsequent judgement in November 2020 established that the October 2018 ruling extends to the calculation of transfer values paid since 17 May 1990.

I have not made an explicit allowance for these rulings in the valuation as the impact on the Scheme is expected to be negligible.

As set out on page 16, a small change to the benefits for DB members who have accrued/are accruing benefits from 1 April 2018 has been agreed as part of the 2022 valuation.

Contingent assets

At the previous valuation, the Scheme benefited from a contingent asset from the University in the form of a charge over certain property assets capped at £100M (or the technical provisions deficit if lower). Under the terms of the agreement when the contingent asset was put in place, as the Scheme is now in surplus relative to the technical provisions, the contingent asset has expired.

The Trustee and the University have agreed to keep the need for a contingent asset under review in future (for example, in response to a material deterioration of the Scheme's funding position or as a result of significantly re-risking the Scheme's investment strategy).

Investment strategy

As set out on page 9, there have been some material changes to the Scheme's investment strategy since the last valuation.

Analysis of the change since the previous valuation

I have analysed the change in the technical provisions (past service) and future service results from the previous valuation to this new one.

Technical provisions changes

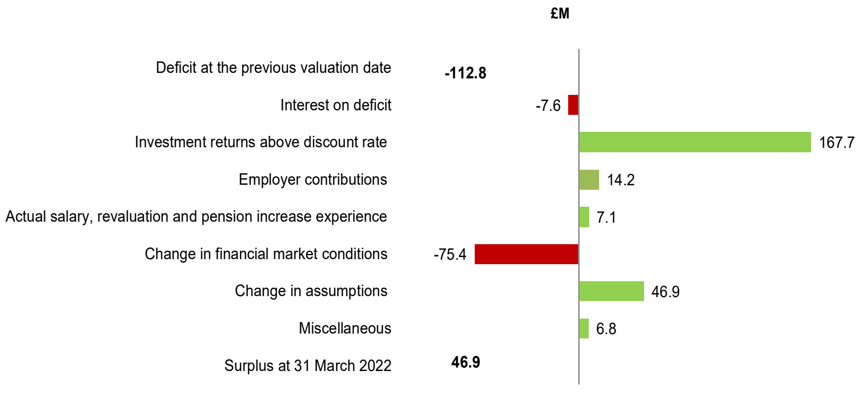
The technical provisions results show that the deficit of £112.8M in the Scheme at the previous valuation has become a surplus of £46.9M at this valuation.

The chart below quantifies the key reasons for this change:

Key factors

The primary reason for the improvement in the funding position since the last valuation is the significantly better than expected investment returns over the period, which more than offset the increase in the technical provisions due to changing market conditions.

Other factors contributing to the improvement in the position included the deficit contributions paid by the Employers, inflation over the period being less than expected and the changes to the assumptions for this valuation.



Future service changes

The future service results show that the net cost of future benefits to the Employers (excluding expenses) increased since the previous valuation from 18.3% of Pensionable Salary to 20.1% of Pensionable Salary.

Key factors

The main factors leading to the increased cost of future benefit accrual between the two valuation dates have been:

- The ageing of the closed DB active population over the 3-year period; and
- A reduction in net discount rates over the inter-valuation period (a small increase in gilt yields has been more than offset by higher inflation expectations).

Solvency estimate: assumptions

The key assumptions used in calculating the solvency estimate are summarised below.

Statutory solvency estimate

The solvency estimate has been calculated in line with statutory requirements. I have taken into account the investment strategies that an insurer is likely to use to back its annuity business and the resulting pricing I would expect to see under the market conditions at the valuation date, taking into account the size of the Scheme.

The solvency estimate considers the position if:

- The Scheme were discontinued on the valuation date.
- Discretionary benefits were suspended permanently.
- The assets were used to buy immediate and deferred annuities from an insurer.

The solvency estimate is a regulatory requirement and also provides a useful benchmark against which the Trustee and others can assess the relative prudence of other funding measures.

The basis used is described below.

Estimate vs actual cost

This estimate is only a guide. The true position can only be established by conducting a competitive buy-out auction and fully defining the scope and likely cost of a wind-up process for the Scheme.

Assumption	Solvency
Pensioner discount rate	Aon Bulk Annuity Market Monitor yield curve for pensioners, which is constructed from swap and UK corporate bond market curves
Non-pensioner discount rate (before and after retirement)	Aon Bulk Annuity Market Monitor yield curve for non-pensioners, which is constructed from swap and UK corporate bond market curves
RPI	Swap RPI Curve
CPI	RPI inflation assumption less 0.75% pa for pre-2030 and 0.1% pa thereafter
Post-retirement mortality - base table	Standard tables S3PMA medium and S3PFA Medium tables with a scaling factor of 100%
Post-retirement mortality - improvements	CMI 2021 core projections with Sk=7.0, A=0.5% and a long-term improvement rate of 1.75% p.a. for men and women
Pre-retirement mortality	100% of AMC00 for men and 100% of AFC00 for women
Withdrawal	All members are assumed to leave active service immediately
Early retirements	Members are assumed to retire at Normal Pension Age

Assumption	Solvency
Family Details	A man is assumed to be 3 years older than his wife/dependant and a woman is 1 year younger than her husband/dependant. Proportion married (% assumed to have an eligible dependant at retirement age or earlier death): Pensioners - 85% for males and 70% for females. Non-pensioners - 80% for males and 75% for females.
Commutation	No allowance made
Expenses	Allowance made to cover expenses and insurance company charges associated with winding-up and estimated PPF levies for the next two years.

Section 179 valuation: benefits, approximations and assumptions

The benefits that are valued in the section 179 valuation are summarised below, along with any approximations made and the assumptions used.

Benefits valued for section 179 purposes

Normal Retirement Pension

I have valued **100%** of pension for members who:

- have reached the Scheme's NPA for section 179 purposes (as described on the right), or
- are receiving a dependant's pension, or
- retired due to ill-health.

For other members, I have valued **90%** of the pension payable.

Normal Pension Age

Normal Pension Age (NPA) for section 179 purposes is determined as prescribed in paragraph 34 of Schedule 7 to the Pensions Act 2004, and is broadly the earliest age at which the pension normally becomes payable without actuarial reduction.

Different NPAs may apply to different parts of a member's pension.

Pension increases in payment

I have only allowed for future increases in payment on benefits accrued after 5 April 1997. The allowance reflects increases in line with CPI price inflation capped at 2.5% pa. Actual past pension increases for pensioners have been allowed for in the benefits valued.

Pension increases in deferment

For members who have not yet retired, I have implicitly allowed for revaluation of benefits between the valuation date and NPA in line with CPI price inflation capped at 5% pa for service prior to 6 April 2009, and capped at 2.5% pa for service after that date. Past revaluation (up until the valuation date) has been allowed for at the levels that apply under the provisions of the Scheme, which differ in the treatment of GMP and non-GMP pension.

Note that GMP revaluation is applied from the date of leaving up to the valuation date, even though in practice this would not apply in the Scheme until GMP age. This is a change from the previous section 179 valuation where no GMP revaluation was applied prior to the valuation date. This change will result in an increase in section 179 liabilities.

Death after retirement

I have allowed for contingent spouses' pensions on death in retirement based on 50% of the pension in payment for current pensioners, rather than the level of spouses' pensions that would actually be payable under the Scheme, which are based on the member's pre-commutation pension.

GMP equalisation

I have made an approximate allowance for the additional liabilities that would arise in the Scheme as a result of GMP equalisation. This is in line with the PPF's requirements and in particular its Information Note published in January 2021. This includes an allowance for equalising benefits paid prior to the valuation date as these are not included in the net asset value shown in your audited accounts used for this section 179 valuation.

Death after leaving but before retirement

I have allowed for contingent spouses' pensions on death before retirement based on 50% of the pension revalued with CPI price inflation from 31 March 2022 to the member's date of death, rather than the level of spouses' pensions that would actually be payable under the Scheme.

AVCs and other money purchase benefits in payment

Benefits in respect of the conversion on retirement of AVCs and other money purchase benefits into a pension payable by the Scheme have been included in the assets and liabilities.

AVCs and other money purchase benefits not in payment

Assets in respect of money purchase benefits (including AVC funds not yet in payment and all benefits in the DC Section) are not included within the assets or liabilities for a section 179 valuation.

Approximations

In carrying out the section 179 valuation I made the following approximations. The approximations are similar to the ones I made for the previous section 179 valuation.

- Where information was not provided in respect of members with an entitlement to a short service refund from the Scheme, I made a prudent estimate of their entitlement at the valuation date.
- As the scheme is yet to undertake detailed calculations in respect of GMP equalisation, I have made a prudent allowance for this in the calculations (see below).

Assumptions

I have summarised below the assumptions used in the section 179 valuation.

Financial assumptions

Post-retirement discount rate – current pensioners	1.95% pa, for non-increasing pensions (this is the pension accrued before 6 April 1997). -0.25% pa net of increase, for increasing pensions (this is the pension accrued after 5 April 1997, and the assumption allows for increases in payment in line with CPI price inflation limited to 2.5% pa).
Post-retirement discount rate – current non-pensioners	1.65% pa, for non-increasing pensions (this is the pension accrued before 6 April 1997). -0.65% pa net of increase, for increasing pensions (this is the pension accrued after 5 April 1997, and the assumption allows for increases in payment in line with CPI price inflation limited to 2.5% pa).
Pre-retirement discount rate	-2.39% pa net of increases in deferment, for benefits accrued before 6 April 2009 (this allows for increases in deferment in line with CPI price inflation limited to 5% pa). -0.68% pa net of increases in deferment, for benefits accrued after 5 April 2009 (this allows for increases in deferment in line with CPI price inflation limited to 2.5% pa).

Demographic assumptions

Mortality before and after retirement	For members: Standard tables S3PMA and S3PFA applicable for the member's year of birth. For contingent lives/dependants: Standard tables S3DMA and S3DFA applicable for the contingent life's assumed year of birth/the dependant's actual year of birth. In all cases: a scaling factor of 100% and an allowance for improvements in mortality from 2013 in line with the CMI_2019 projections with the smoothing parameter S_K=7.5, the A parameter = 0 and a long-term improvement rate of 1.5% p.a. for males and 1.25% p.a. for females.

Demographic assumptions	
Family details	Age difference between member and dependant: males are assumed to be three years older than females. 85% of male members and 75% of female members are assumed to be married at retirement or earlier death. Children's pensions in payment are assumed to cease at age 18, or age 23 if currently aged over 17.

Expenses	
Estimated wind-up expenses	4% of liabilities (excluding benefit installation / payment expenses) up to £5M; plus 1% of liabilities (excluding benefit installation / payment expenses) between £5M and £25M; plus 0.5% of liabilities (excluding benefit installation / payment expenses) between £25M and £545M. (The estimated wind-up expenses will be no more than £3 million.)
Benefit installation / payment expenses	Non-pensioners: an allowance of £950 per member. Pensioners:

Age	Expense allowance per member
< 60	£800
60-70	£650
70-80	£550
80+	£450

GMP equalisation

I have made an approximate allowance for the additional liabilities that will arise in the Scheme as a result of GMP equalisation. In doing so I have taken account of the 'Information note to assist schemes preparing to submit s179 valuations and certify Deficit-Reduction Contributions (DRCs)' published by the Board of the PPF in January 2021. This states that

- where, having regard to the 2018 judgment of the High Court in the case of 'Lloyds Banking Group Pensions Trustees Limited vs Lloyds Bank Plc and others', a s179 valuation includes an interim allowance for GMP equalisation, such allowance may be calculated using a best estimate basis rather than applying the principle of prudence;
- no allowance need be made in respect of impacts arising from the 2020 judgment of the High Court in the case of 'Lloyds Banking Group Pensions Trustees Limited vs Lloyds Bank Plc and others' if the trustees have not yet decided what action they will take in response to the judgment, or if the trustees are uncertain what impact (if any) it will have on the scheme assets and/or liabilities; and
- the principle of prudence applies to all other elements of the protected liabilities.

It would have been disproportionate to calculate a best estimate adjustment for the Scheme. I have therefore assumed that the additional liabilities will be 1% of the unequalised total section 179 liabilities, which I believe to be prudent based on the Scheme's benefit structure.

The increase in the total section 179 liabilities as a result of allowing for GMP equalisation is around **£10M**.

These additional liabilities include an allowance for equalising benefits paid prior to the valuation date as these are not included in the net asset value shown in the audited accounts used for this section 179 valuation.

In line with the PPF's guidance note, this section 179 valuation does not include an allowance for the impact of the November 2020 Lloyds judgment, in relation to GMP equalisation for past transfers out.

Legal framework and compliance

Legal framework

This report is produced in compliance with:

- Clause 22 of the Scheme's Rules;
- Section 224 of the Pensions Act 2004; and
- The terms of the Scheme Actuary Agreement between the Trustee and me, on the understanding that it is solely for the benefit of the addressee.

TAS compliance

This document, and the work relating to it, complies with 'Technical Actuarial Standard 100: Principles for Technical Actuarial Work' ('TAS 100') and 'Technical Actuarial Standard 300: Pensions' ('TAS 300').

The compliance is on the basis that the Trustee of the University of Oxford Staff Pension Scheme is the addressee and the only user and that the document is only to be used as a summary of the outcome of the valuation and to submit the section 179 valuation information to the PPF, using the Scheme Return section of the Pensions Regulator's Exchange system. If you intend to make any decisions after reviewing this document, please let me know and I will consider what further information I need to provide to help you make those decisions.

This document should be read in conjunction with:

- My terms of reference paper, dated 25 October 2021
- My "Assumptions advice and initial results" paper, dated 22 September 2022 (and the Aon document "Actuarial valuations handbook", provided alongside this paper)
- My updated initial results paper, dated 29 September 2022
- My 'Valuation update' paper, dated 10 January 2023,
- My advice email dated 2 April 2023 and corresponding 'Valuation update' paper, dated 18 April 2023
- My advice email dated 24 May 2023
- The Statement of Funding Principles, dated 27 June 2023.

If you require further copies of any of these documents, please let me know.

Shorthand in this report

Scheme: The University of Oxford Staff Pension Scheme

Trustee: OSPS Trustee Limited

University: University of Oxford

Employers: The University of Oxford and the other participating employers

Rules: The Scheme's Trust Deed and Rules dated 25 April 2014, and amending legal documents

Pensionable Salary: As defined in the Rules

Pensionable Service: As defined in the Rules

Glossary

This glossary explains some common terms from the actuarial valuation process. Not all of them may be used in your report.

Attained age method

This is one of the methods historically used by actuaries to calculate actuarial liabilities and contribution rates. It is similar to using the projected unit method but with a control period equal to the average future working lifetime of the active membership.

Best estimate assumption

It is equally likely that actual experience will be better-than or worse-than such an assumption. Best estimate assumptions are subjective and therefore those referenced in one report may differ from best estimate assumptions derived elsewhere.

Cash transfer sum

This is a benefit available to early leavers who have between three months and two years of pensionable service. It is calculated in the same way as the cash equivalent transfer value payable to longer-serving early leavers and is calculated at the date of leaving pensionable service.

Consumer Prices Index (CPI)

Measure of UK price inflation published monthly by the Office of National Statistics. It is the Government's preferred measure of inflation. It is based on different items and weightings to the Retail Prices Index (RPI) and is also calculated using a different formula.

Control period

This is the period of time from the valuation date that is considered when calculating the future service cost for schemes which are still open to accrual. The control period is commonly set to cover the next year, the 3-year period to the next valuation or the expected future working lifetime of the active membership.

Current unit method

This is one of the possible methods used by actuaries to calculate actuarial liabilities and contribution rates. This method only allows for increases applicable to deferred pensioners beyond the effective valuation date (when calculating liabilities) or the end of the control period (when calculating contribution rates) and so does not allow for any further projected future increases to pay.

Deficit

This is the funding target less the value of assets. If the value of assets is greater than the funding target, then the difference is called the surplus.

Defined accrued benefits method

This is one of the possible methods used by actuaries to calculate actuarial liabilities and contribution rates. This method assumes that the scheme will be discontinued at the effective valuation date (when calculating liabilities) or at the end of the control period (when calculating contribution rates) and so does not allow for any further projected future increases to pay or any other terms applicable to active members. This method may be appropriate for schemes which anticipate winding up.

Discount rate

This is used to place a present value on a future payment. A 'risk-free' discount rate is usually derived from the investment return achievable by investing in government gilt-edged stock. A discount rate higher than the 'risk-free' rate is often used to allow for some of the extra investment return that is expected from investing in assets other than gilts.

Discretionary benefits

These are benefits which are not guaranteed under a scheme's rules and which are only granted to members at the discretion of the trustees and/or the sponsor.

Duration of liabilities

The duration of a scheme's liabilities represents the average term to payment of the liabilities. In broad terms, if a scheme has a duration of 20 years, then it will respond to changes in discount rate in the same way that a single cashflow which is payable in 20 years' time would. In practice, there are several different technical definitions of duration.

Formula effect (in calculation of RPI and CPI)

The difference between measures of inflation arising from the use of different formulae to construct the RPI and CPI indices at the first stage of aggregation – the RPI uses a (simple) arithmetic average whereas the CPI uses a (compound) geometric average.

Forward rate

A forward rate is a rate which is expected to apply over a future time period. For example, to discount a single payment from one future date (say, five years from now) back to a closer future date (say, three years from now).

Funding level (or funding ratio)

This is the ratio of the value of assets to the funding target.

Funding target

An assessment of the present value of the benefits that will be paid from the scheme in the future, normally based on pensionable service prior to the valuation date. Often, the funding target is equal to the technical provisions.

Future service contribution rate (FSCR)

Only relevant for schemes still open to accrual; this is the cost of benefits accruing expressed as a percentage of the members' pensionable pay. It considers the present value of the benefits expected to accrue to members and the pensionable pay expected to be paid to members over a given period (referred to as the control period). Provided that the distribution of members remains stable, with new members joining to take the place of older leavers, and if all the other assumptions are borne out, the calculated contribution rate can be expected to remain stable. If there are no new members, however, the average age will increase and the contribution rate can be expected to rise or fall depending respectively upon whether the discount rate is higher or lower than the salary increase assumption.

Gilt yield curve

The term-dependent yields on gilts derived from fixed-interest gilts published by the Bank of England, which are extended by Aon for years beyond those published.

Guaranteed Minimum Pension (GMP)

Most schemes that were contracted out of the State Earnings Related Pension Scheme (SERPS) before April 1997 have to provide a pension for service before that date at least equal to the Guaranteed Minimum Pension (GMP). This is approximately equal to the SERPS pension that the member would have earned had the scheme not been contracted out. GMPs ceased to build up on 6 April 1997, when the legislation changed.

Hedging

A liability is said to be hedged if a scheme holds investments which respond in the same way as it does to changes in the risk being hedged (e.g. interest rates or inflation). Gilts and swaps are examples of investments which are commonly used to hedge liabilities.

Inflation risk premium (IRP)

The difference between the best estimate of future inflation and its market price.

Inflation uncertainty

Whilst, over the medium to long term, inflation is often considered to be reasonably stable, and a simple single assumption is often used for projections, in reality inflation can vary up and down significantly from one year to the next. This variation is sometimes referred to as inflation uncertainty.

Limited Price Indexation (LPI)

The Pensions Act 1995 required schemes to provide a minimum level of annual increase to pensions in payment. The minimum level is the smaller of 5% and the increase in inflation* and applies to the pension earned from 6 April 1997 to 5 April 2005. With effect from 6 April 2005, the cap for statutorily-required LPI for future service was reduced from 5% to 2.5%.

*Until 2010, inflation for the purpose of this minimum was defined with reference to changes in the Retail Prices Index. From 2011, inflation was defined with reference to changes in the Consumer Prices Index.

Longevity risk

This is the risk that life expectancies exceed those assumed and the pension scheme's liabilities are therefore higher than expected.

Mortality future improvements

This is the assumption about how the number of people dying each year will reduce in the future. A higher rate of improvement will lead to a higher life expectancy. Also referred to as future longevity improvements.

Mortality rate

A mortality rate measures the likelihood that an individual will die between one birthday and the next.

Mortality table

Mortality tables summarise mortality rates across all ages.

Ongoing best estimate

This is the present value of the benefits members are entitled to, should the scheme continue without being wound up early, assessed using a set of assumptions whereby the key assumptions are best estimates. Best estimate assumptions are subjective and therefore the figure provided in one report may differ from other best estimate valuations.

Partly projected unit method

This is one of the possible methods used by actuaries to calculate actuarial liabilities and contribution rates. This method allows for some, but not full, projected future increases to pay between the valuation date and retirement or date of leaving service. This method may be appropriate for schemes which anticipate ending the link to future salary increases at a future date.

Pension increase exchange (PIE)

An option that may be offered to members on or after retirement whereby members are granted a higher initial pension but must give up future inflationary increases in return. This can only be done with pension increases that are in excess of statutory minimum increases.

Pension Protection Fund (PPF)

The PPF was established with effect from 6 April 2005. The PPF will normally take over the assets of a pension scheme in the event of its sponsor becoming insolvent and the scheme having insufficient assets to provide the PPF benefits. The PPF will not provide the scheme benefits in full. The PPF is financed by a levy on most defined benefit pension schemes. The PPF benefits are broadly 100% of benefits for pensioners over normal retirement age and 90% of benefits up to a cap for all other members. Pension increases granted on benefits are at lower levels than apply in many schemes, in particular, benefits earned before 6 April 1997 would not be given any pension increases within the PPF.

Present value

Actuarial valuations involve projections of pay, pensions and other benefits into the future. To express the value of the projected benefits in terms of a cash amount at the valuation date, the projected amounts are discounted back to the valuation date by a discount rate. This value is known as the present value. For example, if the discount rate was 6% a year and if we had to pay a lump sum of £1,060 in one year's time the present value would be £1,000.

Projected unit method

This is one of the common methods used by actuaries to calculate actuarial liabilities and contribution rates. This method allows for full projected future increases to pay through to retirement or withdrawal.

Protected Rights

Prior to April 2012, schemes could contract out of SERPS/S2P on a 'Protected Rights' basis. The accumulated National Insurance rebates in respect of each member as a result of being contracted out (known as Protected Rights) must be applied as an underpin to the member's benefits. Schemes that were contracted out on this basis before 6 April 1997 provided this underpin instead of GMPs.

Prudent assumption

It is more likely that actual experience will be better than a prudent assumption than that it will be worse. The value of the liabilities will be higher when measured using prudent assumptions than using best estimate assumptions.

Recovery plan

Where a valuation shows a funding shortfall against the technical provisions, trustees must prepare a recovery plan setting out how they plan to meet the statutory funding objective.

Retail Prices Index (RPI)

Measure of UK price inflation published monthly by the Office of National Statistics. It is no longer the Government's preferred measure of inflation. As well as being based on different items and weightings to the Consumer Prices Index (CPI), it is also calculated using a different formula. However, it is the index that pension benefits have historically tended to be linked to and is the index used to determine increases in index-linked gilt coupons.

RPI inflation curve

The term-dependent RPI inflation expectations derived from fixed-interest and index-linked gilts published by the Bank of England which are extended by Aon for years beyond those published.

Scaling factor

Differences in life expectancy between schemes are typically allowed for by multiplying the chance of dying at each age by a scaling factor. Scaling factors of less than 100% mean that people are assumed to live longer than under the standard tables. For example, a scaling factor of 90% means that a member has a 10% less chance of dying each year than is assumed in the standard mortality tables. Similarly, scaling factors of more than 100% mean that people are assumed to live for less time than under the standard tables.

Schedule of contributions

Trustees of pension schemes must prepare and maintain a schedule of contributions. This shows the dates and amounts of contributions due from the sponsor and members. Under the Pensions Act 2004, the schedule must be put in place within 15 months of the valuation date.

Section 179 valuation

An actuarial valuation of a pension scheme in accordance with section 179 of the Pensions Act 2004. The Pension Protection Fund will take the results of a section 179 valuation into account when calculating a scheme's PPF levy.

Solvency estimate

This represents an estimate of the cost of buying out a scheme's benefits with an insurance company at the valuation date. Supply and demand factors also mean that no single solvency estimate can be relied on and so this estimate is unlikely to be the same as the actual cost of buying out the benefits. Assumptions are set by the Scheme Actuary.

Solvency ratio

This is the ratio of the market value of a scheme's assets to the estimated cost of securing a scheme's liabilities in the event of the discontinuance of the scheme.

Sponsor covenant

A sponsoring employer's 'covenant' is their legal obligation and financial ability to support the pension scheme, both now and in the future.

Spot rate

A rate which is expected to apply between now and a future date. For example, to discount a single payment at a future date (say, five years from now) all the way back to time 0.

Statement of funding principles

The Pensions Act 2004 requires trustees to prepare (and from time to time review and, if necessary, revise) a written statement of their policy for securing that the statutory funding objective is met. This is referred to as a statement of funding principles.

Statutory funding objective

Under the Pensions Act 2004, every scheme is subject to the statutory funding objective, which is to have sufficient and appropriate assets to cover its technical provisions.

Surplus

This is the value of assets less the funding target. If the funding target is greater than the value of assets, then the difference is called a deficit.

Swap yield curve

The term-dependent yields on fixed-interest swaps derived by Aon from market data.

Technical provisions

This is the present value of the benefits members are entitled to, based on their pensionable service to the valuation date and assessed using the assumptions agreed between a scheme's trustees and the sponsor. It generally allows for projected future increases to pay through to retirement or date of leaving service.

Transfer value

Members generally have a legal right to transfer their benefits to another pension arrangement before they retire. In taking a transfer, members give up their benefits in a scheme, and a sum of money (called the transfer value) is paid into another approved pension scheme; this is used to provide pension benefits on the terms offered in that scheme.

Withdrawal

Members may leave a pension scheme before their normal retirement age (typically because they leave employment with the sponsor). When they do so, their accrued benefits will no longer be linked to future salary increases (where applicable), and will instead be linked to future inflation. Benefits will still be payable at normal retirement age.

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