



Scheme Funding Report for the 31 March 2019 actuarial valuation

The University of Oxford Staff Pension Scheme

Prepared for OSPS Trustee Limited

Prepared by J M Harvey FIA

Date 19 June 2020

Signed 

Jay Harvey FIA
Scheme Actuary
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Executive Summary

The key results of the valuation at 31 March 2019 are set out below.

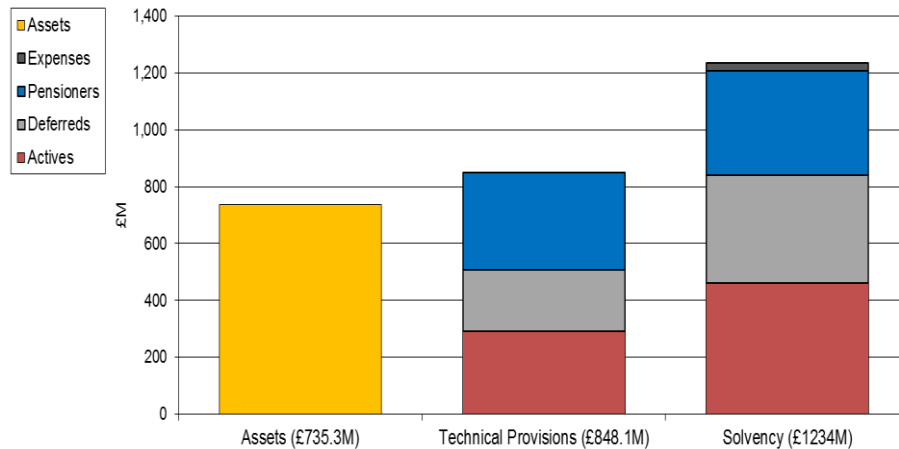
There was a deficit of £112.8M relative to the technical provisions (i.e. the level of assets agreed by the Trustee and the University as being appropriate to meet member benefits, assuming the Scheme continues as a going concern).

There was an estimated deficit of £498.7M relative to the solvency liabilities (i.e. the estimated level of assets needed to buy insurance policies for benefits earned to the valuation date).

Following discussions, the Trustee and University have agreed that the Employers will continue to pay contributions at the rate of 19.0% of Pensionable Salaries in respect of all members.

These contributions, together with investment returns on the Scheme's assets, are expected to be sufficient to eliminate the shortfall relative to the technical provisions by 31 January 2028, as well as meeting the cost of the future accrual of benefits and the expenses of administering the Scheme.

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



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Introduction

This report has been prepared for the Trustee to meet the requirements of Section 224(2)(a) of the Pensions Act 2004. It sets out the results and conclusions of the actuarial valuation of the Scheme at 31 March 2019.

This is a scheme funding report; it summarises the key aspects of the valuation process, including:

- The funding objective and background details;
- The technical provisions;
- The corresponding future service costs;
- The agreed recovery plan and other contributions;
- The results on the solvency basis;
- Further information required for compliance purposes, including:
 - The legal framework within which the valuation has been completed;
 - A summary of the membership and asset data, the benefits valued and details of the assumptions used for the valuation;
 - My statutory certification of the technical provisions; and
 - A glossary of some technical pensions terms.

Throughout the body 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 of the funding position. However, in order to comply formally with the legislation, an alternative presentation of the valuation results is shown in Appendix A which includes DC benefits in both the asset and liability measures.

Shorthand

Scheme

The University of Oxford Staff Pension Scheme

Trustee

OSPS Trustee Limited

University

University of Oxford

Employers

The University 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

The report concentrates on the Scheme's financial position at the valuation date. As time moves on, the Scheme's finances will fluctuate. If you are reading this report some time after it was produced, the Scheme's financial position could have changed significantly.

Previous valuation results

A summary of the results, recovery plan and agreed contributions following the previous valuation is set out below.

The key results from the previous valuation at 31 March 2016 were:

- There was a deficit of £132.9M relative to the technical provisions, which corresponded to a funding level of 80%.
- There was an estimated deficit of £743.0M relative to the solvency liabilities.

Following discussions, the Employers agreed to pay:

- 22.5% of Pensionable Salaries until 31 July 2016;
- 23.0% of Pensionable Salaries for the period from 1 August 2016 to 31 July 2017; followed by
- 19.0% of Pensionable Salaries thereafter.

The above contributions, together with investment returns on the Scheme's assets, were expected to be sufficient to eliminate the shortfall relative to the technical provisions by 30 June 2027, as well as meeting the cost of the future accrual of benefits and the expenses of administering the Scheme.

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

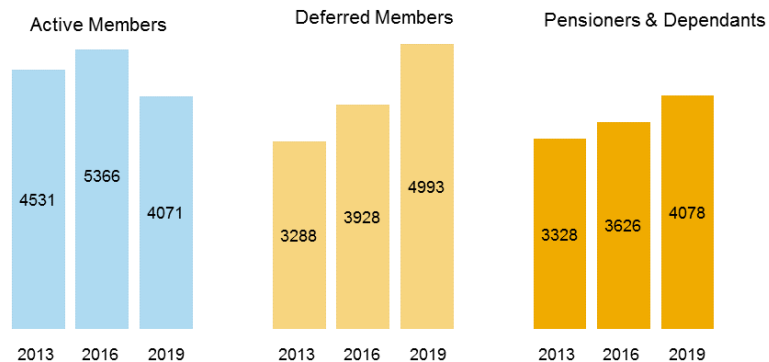
Data and benefits valued

Key information on the membership data used and the benefits valued in the valuation are summarised here.

The chart below shows how the membership profile of the DB Section of the Scheme has changed over the last three valuations. Since the last valuation the total membership has increased, however the number of active members has fallen following the closure to new entrants.

The membership numbers are shown graphically below. Further details can be found in Appendix B.

Membership profile of the DB Section



Members are entitled to benefits defined in the Rules. A summary of the benefits is included in Appendix C.

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 history of paying any other discretionary benefits and no allowance was made in this valuation for any other discretionary benefits.

GMP equalisation

Since the last valuation it has become clear that schemes (like OSPS) that contracted-out of the State Earnings Related Scheme at any point during the period from 17 May 1990 to 5 April 1997 will 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 OSPS is expected to be negligible.

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).

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 conclusions of the review were that the covenant was 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 agreeing the recovery plan.

Long-Term Funding Target (LTFT)

The Trustee has also provisionally agreed a LTFT with the University as part of this valuation. The LTFT is to reach 105% funded on a basis consistent with 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 is to reach the LTFT within a period of 15-25 years from the effective date of this valuation through a combination of the agreed contributions and investment returns on the Scheme's assets.

Investment strategy

The Trustee's investment strategy is set out in its Statement of Investment Principles (SIP). In summary, the Trustee's strategy is to invest around 65% of the Scheme's assets across a range of growth-seeking assets to generate investment returns. 15% is invested mainly in index-linked gilts that aim to offer protection against movements in long-term interest rates or inflation, and cash. The remaining 20% is invested in credit including corporate bonds and inflation-linked assets. The Trustee's intention is to reduce the Scheme's exposure to growth assets over the long-term as the Scheme matures. A prudent allowance for the expected returns of this strategy is included in the discount rate used for this valuation.

The Scheme's assets of £735.3M (excluding AVCs and other DC assets) are described in more detail in Appendix D.

Summary of assumptions

The Trustee and University have agreed the assumptions used to calculate the technical provisions and the cost of future benefit accrual. The table below summarises the key assumptions, together with those used for the previous valuation, and the reasons for any change. Further details of the assumptions are set out in the statement of funding principles dated 19 June 2020.

Assumption	Previous valuation	This valuation	Rationale for change
Pre-retirement discount rate	Gilt yield curve plus 1.2% p.a.	Gilt yield curve plus 2.25% p.a.	Introduces greater consistency with the intention to de-risk over the long-term as the Scheme matures and the provisionally agreed Long-Term Funding Target described in the previous section
Post-retirement discount rate		Gilt yield curve plus 0.5% p.a.	
RPI inflation	"Break-even" RPI curve less 0.15% p.a.	"Break-even" RPI curve less 0.3% p.a.	Allows for the observed increase in the inflation risk premium since the last valuation
CPI inflation	RPI inflation assumption less 1.0% p.a.	RPI inflation assumption less 1.0% p.a.	No change
Pensionable Salary Increases	RPI inflation assumption plus 1.0% p.a.	RPI inflation assumption	Based on historic salary increase data and maturing of DB membership
Post-retirement mortality - base table	S2PXA tables with below scaling factors: Pensioners: 100%(M)/95%(F) Non-Pensioners: 105%(M)/100%(F)	S3PMA Medium and S3PFA Medium tables with below scaling factors: Pensioners: 100%(M)/95%(F) Non-Pensioners: 105%(M)/100%(F)	Updated to reflect latest available mortality tables

Post-retirement mortality - projection	CMI 2016 Proposed 2015 core projections with long-term improvement rate of 1.5% p.a. for men and women	CMI 2018 core projections with $S_k=7.0$, $A=0.5\%$ and long-term improvement rate of 1.5% p.a. for men and women	Updated for the latest CMI mortality projection model
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As for the previous valuation, the technical provisions have been calculated using the projected unit method. This method, with a control period equal to the length of the recovery plan, has also been used to calculate the cost of future benefit accrual.

Past service results

The Trustee's technical provisions and resulting funding position are shown below.

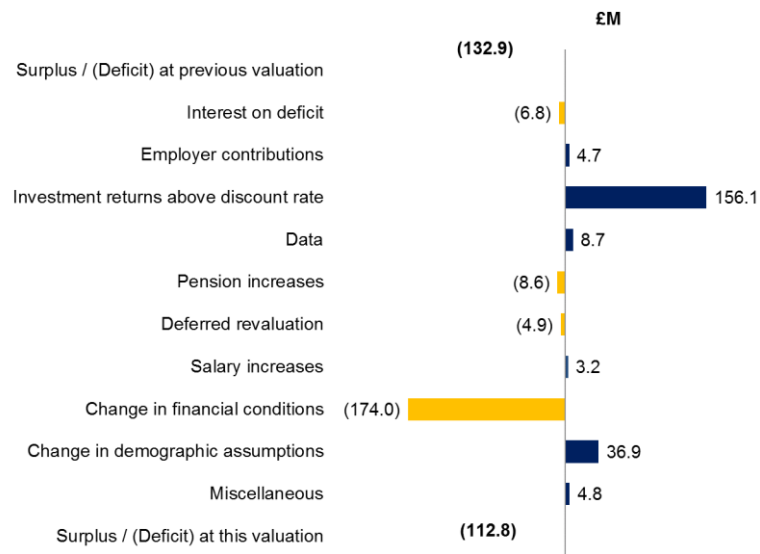
	Technical Provisions (£M)
Value of past service benefits for:	
Actives	290.9
Deferreds	215.8
Pensioners	341.4
Value of liabilities	848.1
Value of assets	735.3
Past service surplus/(deficit)	(112.8)
Funding ratio	87%

The key assumptions are the discount and inflation rates. The sensitivity of the technical provisions to these key assumptions, ignoring any changes to the value of the assets, is as follows:

- A 0.25% p.a. decrease in the discount rate increases the technical provisions by around £45M, reducing the funding level to around 82%.
- A 0.25% p.a. increase in the RPI inflation assumption (also allowing for the consequent impact on the assumptions derived directly from that assumption) increases the technical provisions by around £40M, reducing the funding level to 83%.

Reasons for change in past service funding position

The past service results show that the deficit of £132.9M in the Scheme at the previous valuation has become a deficit of £112.8M at this valuation. The chart below quantifies the key reasons for this change:

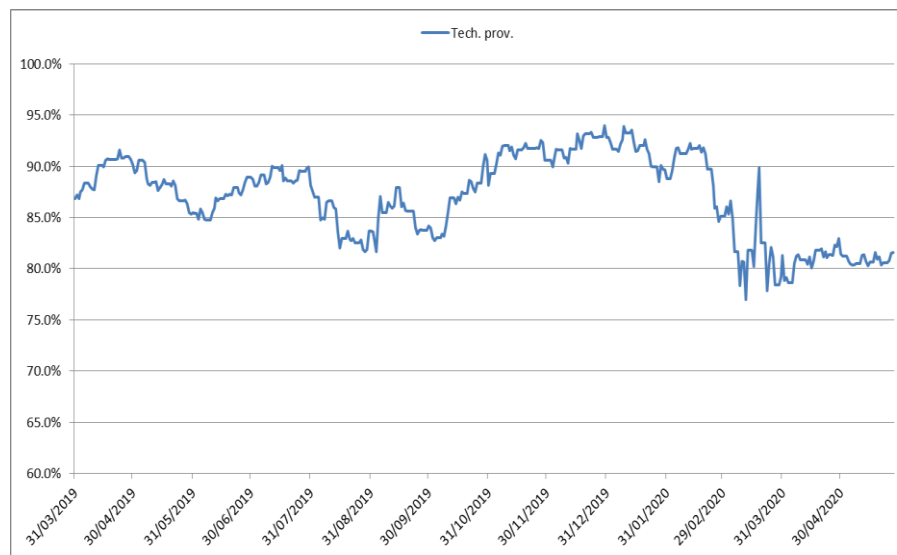


The analysis shows that the main factors affecting the funding position since the previous valuation have been:

- Gilt yields falling significantly, increasing the value placed on the liabilities.
- Better than expected asset returns have acted to offset this to a large extent.
- Positive impact of changes to the assumptions used for the technical provisions (including the impact of the latest mortality projections).

Approximate developments since the valuation date

Since the valuation date, the funding position is estimated to have worsened on a like-for-like basis. However this does not take into account any changes to the assumptions that may be agreed if a new valuation was being carried out at the current date.



The chart opposite illustrates how the funding position of the Scheme is estimated to have changed over the period since the valuation date.

The value of the liabilities used in the chart has been calculated based on assumptions consistent with those used to calculate the technical provisions at the valuation date, with financial assumptions updated only to reflect changes in prevailing gilt yields at the dates in question. The main reason for the estimated deterioration in the funding position on this basis was the impact of the COVID-19 pandemic on global financial markets in the first quarter of this year.

In practice, were we to undertake a new valuation at the current date, the Trustee and the University would review the assumptions used (in particular the margins above gilt yields in the discount rates and the allowance for future improvements in mortality) in light of current financial and demographic conditions. In the meantime, the Trustee and the University have agreed not to reflect changes in market conditions since the valuation date in the recovery plan agreed following this valuation.

My certification of the schedule of contributions will be based on the financial conditions at the valuation date.

Future service results

The table below shows the cost at the valuation date of benefits that DB members will earn in the Scheme in future.

	%Pensionable salary
Value of benefits accruing	26.0
Death in service lump sum	0.6
Expenses	0.7
Less member contributions	(8.3)
Net cost to the Employers	19.0

The key assumptions are the discount and inflation rate. The sensitivity of the cost of future benefit accrual to these key assumptions is as follows:

- A 0.25% pa decrease in the discount rate increases the net cost to the Employers of future benefit accrual to around 21.3% of Pensionable Salaries.
- A 0.25% pa increase in the RPI inflation assumption (also allowing for the consequent impact on the assumptions derived directly from that assumption) increases net cost to the Employers of future benefit accrual to around 21.1% of Pensionable Salaries.

Recovery plan

Following discussions, the Trustee and the University have agreed a recovery plan to eliminate the deficit relative to the technical provisions at the valuation date.

The Trustee and University have agreed to maintain the employer contribution rate to the Scheme of 19.0% of Pensionable Salaries.

This contribution rate will continue to be payable in respect of both DB and DC members, with the excess contributions above those needed to provide benefits for DC members being used to help eliminate the deficit relative to the technical provisions.

The contributions, together with an allowance for the Scheme's assets to return 2.5% pa above gilt yields are expected to eliminate the deficit by 31 January 2028.

In calculating the recovery period I have made the following additional assumptions:

- Scheme expenses will be equal to 0.7% of Pensionable Salaries;
- The Scheme continues to remain open to new entrants, with new entrants replacing leavers on a 1:1 basis;
- All new entrants join the DC Section;
- 2/3rds of new entrants until 30 September 2020 remain in the 4% Cost Plan with the remaining 1/3rd joining the 6% Cost Plan and the 8% Cost Plan in equal proportions;
- From 1 October 2020, 2/3rds of all existing DC members and new entrants join the 6% Cost Plan, with the remaining 1/3rd joining the other two Cost Plans in equal proportions; and
- The proportion of members electing for different levels of accrual in the DB Section remains constant over the period.

Solvency position

The solvency estimate below represents the estimated cost of purchasing annuities at the valuation date from an insurance company to meet the Scheme's benefits.

	Solvency (£M)
Value of past service benefits for:	
Actives	460.3
Deferred	379.5
Pensioners	368.8
Expenses	25.4
Value of liabilities	1,234.0
Value of assets	735.3
Past service surplus/(deficit)	(498.7)
Funding ratio	60%

This solvency estimate represents the estimated cost of purchasing annuities at the valuation date from an insurance company to meet the Scheme's benefits. The assumptions include an allowance for the expenses of winding-up the Scheme. Further details and the assumptions used in the solvency estimate are summarised in Appendix E.

The solvency estimate is higher than the technical provisions, the broad reasons for which are set out below:

- 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.

In practice, if the Scheme were to be discontinued with no solvent employer then the assets are unlikely to be sufficient to provide the benefits in full. If this were the case then:

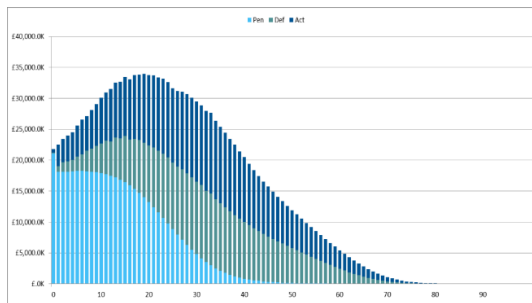
- Benefits corresponding to those covered by the PPF would be met first (either through the PPF or, if there were sufficient funds, by securing these benefits with an insurance company).
- Any remaining assets would be used to secure part of the remaining benefits with an insurance company.

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

Funding and investment risks

The funding level is likely to exhibit volatility. This is discussed below.

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



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 risks – 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.
- Longevity risk – the risk that the Scheme members live for longer than assumed and that pensions would therefore need to be paid for longer.

- Liquidity risk – the risk that cashflows are higher than expected as member's commute more than is assumed or take transfer values, possibly leading to the sale of assets at inopportune times.
- Inflation risk – the risk that inflation is higher than assumed, increasing the pensions that need to be paid.
- Sponsor risk - this is the risk that the Employers are no longer willing or able to support the Scheme to fund the recovery plan and any future losses that arise.
- Other risks – issues relating to climate change and other environmental risks as well as long term uncertainty around geopolitical, societal and technological shifts may also impact funding, investments and sponsor covenant of the Scheme.

Actions taken by the Trustee to mitigate risks include:

- Adopting a diversified investment strategy, including an allocation to matching assets so that changes in the value of the liabilities will be partially matched by changes in the asset values, thus reducing the funding volatility.
- Obtaining 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).

Agreed contributions and projections

The contributions agreed as a result of this valuation and the projected position at the next triennial valuation are summarised below.

Contributions

Following discussions and agreement to the recovery plan as summarised in the earlier section in this report, the Employers will continue to pay 19.0% of Pensionable Salaries in respect of both DB and DC members of the Scheme.

The above contributions, together with investment returns on the Scheme's assets, are expected to be sufficient to eliminate the shortfall relative to the technical provisions by 31 January 2028, as well as meeting the cost of the future accrual of benefits and the expenses of administering the Scheme.

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

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.

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 2022.

Member contributions for members of the DB Section will continue to be 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

These contributions are set out in the schedule of contributions. As agreed, my certification of the schedule will be based on the position at the valuation date.

Projections

I estimate that, by the next valuation, these contributions will have:

- Increased the technical provisions funding level to 90%; and
- Increased the solvency level to about 62%.

These estimates assume that:

- The experience of the Scheme between the two valuation dates is in line with the assumptions underlying the technical provisions and recovery plan (including that the return on the Scheme's assets is 2.5% pa above gilts);
- The assumptions underlying the technical provisions and solvency bases remain unchanged; and
- Market conditions remain unchanged to those at the valuation date.

Next steps

Actions required to finalise the valuation process are summarised below.

The next steps are:

- For the Trustee to provide a copy of this report to all participating employers within 7 days.
- To submit the valuation summary and supporting documentation to the recovery plan to the Pensions Regulator via Exchange.
- To provide a summary funding statement to members setting out the results of the valuation by 30 September 2020, i.e. within 18 months of the valuation date.
- I need to give a certificate on the adequacy of the schedule of contributions.

Checklist

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

- This scheme funding report, including my certification of the technical provisions
- Statement of funding principles
- Recovery plan
- Schedule of contributions, including my actuarial certification of the adequacy of the schedule

The statutory deadline for completing the valuation process is 30 June 2020, i.e. 15 months after the valuation date.

Appendix A – Legal framework and alternative presentation

This report is produced in compliance with:

- Clause 22 of the Scheme's rules.
- Section 224 of the Pensions Act 2004.
- 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.

Alternative presentation including defined contribution benefits

Defined contribution benefits (including DC Section benefits and DC AVCs) amounted to £5.5M at the valuation date. If these benefits are included in the valuation:

- The value of the assets is £740.8M.
- The technical provisions are £853.6M (funding level of 87%).
- The value of the solvency liabilities is £1,239.5M (solvency ratio 60%).

Appendix B – Membership data

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

Active members	Number	Average age*	Total pensionable salaries (£000 pa)	Average pensionable salaries (£ pa)	Average service (years)
2013	4,531	44.1	92,800	20,481	7.1
2016	5,366	43.3	123,500	23,015	6.3
2019	4,071	46.1	92,988	22,842	8.5

Note: The average ages shown in these tables are unweighted.

Pay is actual (i.e. not full time equivalent) Pensionable Salary at the valuation date.

Average service includes transferred-in (and other) service.

Deferred members	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2013	3,288	45.7	4,797	1,459
2016	3,928	45.7	6,056	1,542
2019	4,993	45.5	8,051	1,612

Note: The deferred pension amounts shown above are at the valuation date.

In addition there were 1,394 'suspended' members for whom a refund of contributions or cash transfer sum was due.

Pensioners	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2013	2,917	70.0	10,133	3,474
2016	3,181	70.7	12,083	3,798
2019	3,570	72.0	14,186	3,974

Dependants	Number	Average age	Total pension (£000 pa)	Average pension (£ pa)
2013	411	69.2	1,029	2,504
2016	445	70.1	1,247	2,802
2019	508	71.8	1,463	2,880

The pension amounts shown above include the increase awarded in April of the year in question.

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

Appendix C – Benefits Valued

A summary of the main benefits 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	<p>Pre 2013 pension: 31 July immediately preceding 66th birthday.</p> <p>Post 2013 pension: The later of the member's 65th birthday and the member's birthday immediately preceding their State Pension Age.</p>
Pensionable Salary	<p>Basic salary or wages from the Employer, including regular overtime and any other pensionable recurrent additions, but excluding other overtime and fluctuating emoluments.</p>
Member Contributions	<ul style="list-style-type: none">▪ 6.6% for Lower Cost Plan Members;▪ 8.0% for Standard Cost Plan Members; and▪ 9.6% for Higher Cost Plan Members.
Final Pensionable Salary	<p>The highest Pensionable Salary in any period of 12 consecutive months in the 5 years before membership ceases (or 31 March 2018 if earlier).</p>
Normal Retirement Benefits	<ul style="list-style-type: none">▪ 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.
-

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

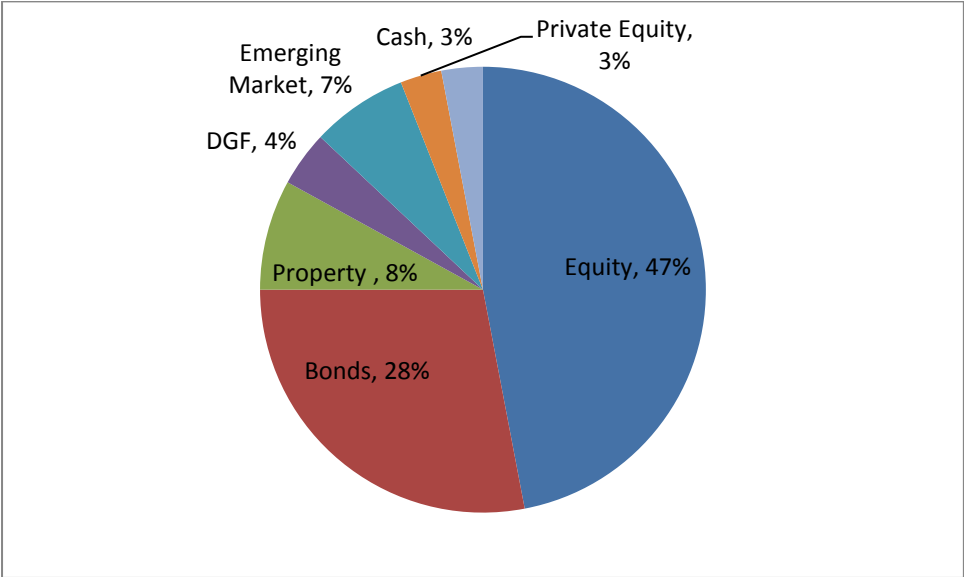
Children's allowance of 25% of prospective pension for each child, up to a maximum of two at any one time. Allowances are paid until the attainment of age 17, or a higher age if the child remains in full-time education

Appendix D – Assets

Information on the assets used in this valuation is set out below.

The audited accounts for the Scheme for the year ended 31 March 2019 show the assets of the DB Section of the Scheme were £740.8M, of which £5.5M relates to DC and AVC assets.

The chart shows how the balance of the assets of £735.3M is broadly invested.



Appendix E – Assumptions for solvency estimate

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

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

However, 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.

The basis used is described on the next page.

Solvency estimate

This 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 prudence of other funding measures.

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 inflation	Swap RPI curve
CPI inflation	Equal to the RPI inflation assumption less 0.6% p.a.
Post-retirement mortality - base table	S3PMA and S3PFA Medium tables with below scaling factors: Pensioners: 100%(M)/95%(F) Non-Pensioners: 105%(M)/100%(F)
Post-retirement mortality - future improvements	CMI 2017 core projections with Sk=8.0, and long-term improvement rate of 1.75% p.a. for men and women
Pre-retirement mortality assumption	105% of AMC00 for men 100% of AFC00 for women
Withdrawals	All members are assumed to leave active service immediately
Early retirements	Members are assumed to retire at Normal Pension Age
Commutation	No allowance made
Family details	A man is 3 years older than his wife/dependant and a woman is 1 year younger than her husband/dependant.

	85%/80% of males (pensioners/non-pensioners) and 70/75% of females (Pensioners/Non-Pensioners) have an eligible dependant at retirement age or earlier death
Expenses	Allowance made to cover expenses and insurance company charges associated with winding-up and estimated PPF levies for the next two years.
Discretionary benefits	No allowance made

Appendix F – 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 2019 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 19 June 2020.

Signature:



Name: J M Harvey

Qualification: Fellow of the Institute and Faculty of Actuaries

Date: 19 June 2020

Address: Aon
1 Redcliff Street
Bristol
BS1 6NP

Appendix G – Glossary

Control period

This is the period of time from the valuation date that is considered when calculating the future service cost for schemes still open to accrual.

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.

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 by investing in assets other than gilts.

Discretionary benefits

Benefits that 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.

Funding level

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.

Gilt yield curve

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

Guaranteed Minimum Pensions (GMPs)

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 (eg interest rates or inflation). Gilts and swaps are examples of investments which are commonly used to hedge liabilities.

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.

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 employer 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

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.

Prudent

Prudent assumptions are assumptions that, if a scheme continues on an ongoing basis, are more likely to overstate than understate the amount of money actually required to meet the cost of the benefits.

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.

RPI inflation curve

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

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 employer and members. Under the Pensions Act 2004 the schedule must be put in place within 15 months of the valuation date.

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.

The 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 estimate of solvency

This is the difference between the market value of a scheme's assets and the estimated cost of securing a scheme's liabilities in the event of the discontinuance of the scheme.

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.

Swap yield curve

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

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.

Technical provisions

This is the present value of the benefits members are entitled to based on pensionable service to the valuation date, assessed using the assumptions agreed between a scheme's trustees and the company. 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.

Report Framework

This report has been prepared in accordance with the framework below.

TAS compliant

This report, 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 report is only to be used as a summary of the Scheme valuation results and contribution requirement. If you intend to make any other decisions after reviewing this report, please let me know and I will consider what further information I need to provide to help you make those decisions.

The report has been requested by the Trustee. It has been prepared under 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.

This report should be read in conjunction with,

- My terms of reference paper, dated 28 November 2018;
- My report "Actuarial valuation at 31 March 2019 – initial assumptions advice", dated 16 July 2019; and
- My report "Initial results of actuarial valuation as at 31 March 2019", dated 26 September 2019.