CAMBRIDGE UNIVERSITY ASSISTANTS' CONTRIBUTORY PENSION SCHEME

CARTWRIGHT

Actuarial Valuation as at 31 July 2021

Scheme Funding Report

Prepared for C U Pension Trustee Limited

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1. EXECUTIVE SUMMARY

1.1 Introduction

This report sets out the results of the actuarial valuation of the Cambridge University Assistants' Contributory Pension Scheme ("the Scheme") as at 31 July 2021.

1.2 Prudence and Covenant

At the last valuation the Trustee rated the University Covenant as Strong and this was reflected in the level of prudence factored into the assumptions used. For this valuation, the Trustee has received an independent assessment of the University's Covenant from Interpath Advisory. They have also rated the covenant as Strong. I have therefore recommended that for this valuation the level of prudence in the assumptions be unchanged, and the results set out in this Summary have been calculated accordingly.

1.3 Current funding level

The Scheme's funding level on the Statutory Funding Objective at the valuation date was 110%, equivalent to a surplus of £76.4m. At the previous valuation the ongoing funding level was 95%. The main reasons for the improvement are the contributions paid by the University, changes in the funding basis, and actual salary and pension increases being lower than assumed.

1.4 Normal contributions

The ongoing average contribution rate for future service benefits, ignoring the past service position, is 13.6% of Pensionable Salaries. The Trustee and the University have agreed that the Employers will pay contributions at these new rates from 1 August 2023. Until then, they will continue paying the current rates, representing an average rate of 12.0% of Pensionable Salaries.

In addition, the Employers will continue to pay the existing additional payments of £14,595,000 per annum, payable monthly, until 31 July 2023.

1.5 Additional contingent contributions

The Trustee and the University have agreed to carry out interim valuations at each future 31 March, commencing 31 March 2023. Should such a valuation show that the funding level has fallen below 95% then the Employers will pay £10,000,000 per annum, payable monthly, commencing from the following 1 August. Should a subsequent 31 March valuation show that funding level has improved to over 100% then this additional contribution will cease on the subsequent 31 July.

1.6 Solvency position

The solvency position of the Scheme has been measured by reference to the estimated cost of buying out the benefits with an insurance company. As at the valuation date the solvency funding level of the Scheme was 39%.

If the Scheme was fully funded on the Statutory Funding Objective the solvency funding level would be 35%.

1.7 PPF Section 179 position

The PPF Section 179 position of the Scheme has been measured in line with the prescribed assumptions and benefits as laid down by the PPF Board. At the valuation date the Section 179 funding position was 55%.

This funding level is used by the PPF Board to help it determine the risk based portion of the PPF levy.

1.8 CETVs

As the Scheme is more than 100% funded, Cash Equivalent Transfer Values should continue to be paid in full.

I recommend that the CETV basis be reviewed following completion of this valuation.

1.9 Factors

The actuarial factors used in individual member calculations should be reviewed following the completion of the valuation to reflect changing economic and demographic conditions

1.10 Timescale and future valuation requirements

The next triennial valuation is due to take place as at 31 July 2024. As this Scheme has more than 100 members, interim actuarial reports will be required as at 31 July 2022 and 31 July 2023.

A Summary Funding Statement should be sent to members updating them on the Scheme's funding position. This should be issued by 31 January 2023.

Details of the valuation should be submitted to TPR as part of your next Scheme Return.

2. INTRODUCTION

2.1 Background

This report on the actuarial valuation of the Cambridge University Assistants' Contributory Pension Scheme ("the Scheme") as at 31 July 2021, was commissioned by and is addressed to the Trustee of the Scheme. It has been prepared under Rule 23 of the Ordinances & Rules and Section 224 of the Pensions Act 2004. These state that the Trustee is required to obtain an actuarial valuation at least every three years and actuarial reports in intervening years

2.2 Purposes

The purposes of the valuation are:

- to review the Scheme's funding position relative to its funding target;
- to determine contribution rates for funding Scheme benefits;
- to assess the Scheme's solvency position; and
- to satisfy statutory requirements.

2.3 Previous valuations

The Scheme was last valued as at 31 July 2018 and the results were contained in my report dated 30 April 2019.

2.4 Inter-valuation review

The recommended ongoing overall joint contribution rate for future service benefits, ignoring the past service position arising from the last actuarial valuation, was 12.2% of Pensionable Salaries. The Trustee agreed with the University that contributions could continue to be paid at the rate of 12.0% of Pensionable Salaries, split as shown below.

	Salary Sacrifice Members		Non Salary Sacrifice Members	
	Active Members %	Employers %	Active Members %	Employers %
Pre-2013 Members paying additional contributions under Rule 45.6	Nil	20.0	8.5	11.5
Other Pre-2013 Members	Nil	16.5	5.0	11.5
Post-2013 Members	Nil	8.8	3.0	5.8

In addition, the University agreed to continue paying an additional £14,595,000 per annum to eliminate the funding deficit identified at the previous valuation, and in order further to improve the funding level.

The rates of investment return achieved in each of the inter-valuation years were as follows:

Year ending	31 July 2019	31 July 2020	31 July 2021
Investment Return (%)	2.0%	-5.2%	18.1%

2.5 References for earlier advice on this valuation

Previous advice on this valuation is as follows:

- Report on Proposed Assumptions on the actuarial valuation dated 23 November 2020;
- Scheme Experience Investigation Report dated 24 February 2021;
- Postcode Longevity Analysis dated 24 February 2021;
- Scheme-Specific Mortality Investigation dated 14 May 2021;
- My letter of 4 June 2021 replying to comments from the University Pensions Working Group on the proposed assumptions;
- Summary of Initial Results report dated 19 November 2021; and
- Updated results letter, dated 30 August 2022.

These documents set out my advice to the Trustee regarding the commencement of the valuation process, the purpose of this process and advice on recent experience and assumptions. They included drawing the Trustee's attention to the different funding methods available and how to choose a set of assumptions. Setting the method and basis is the Trustee's responsibility but they should first take my advice.

It should be noted that I have not provided any advice to the Trustee on University matters. In particular in recommending assumptions to the Trustee I provided no advice on factors affecting the University or its industry which may affect such factors as pay increases or rates of withdrawal of Scheme membership. In calculating the contribution rates I have not provided any advice on other related University matters such as business plans, expenditure commitments or industry reports.

The above advice was reviewed by the Trustee, and following discussion with the University, the agreed assumptions to be used are set out in Appendix E.

2.6 Third party Statement

The calculations in the report use methods and bases appropriate for the purpose described above. Figures required for other purposes, such as Employer accounting, should be calculated in accordance with the specific requirements for such purposes and it should not be assumed that the figures contained in this report are appropriate. The report may be provided to the Employers and to Scheme members in accordance with the disclosure legislation and regulations, but may only be disclosed to other parties with our consent. The report does not grant any rights to Scheme members or other third parties and may not necessarily cover all the implications for a third party. I and Cartwright Group Ltd do not accept any liability to any third parties in respect of the contents of this report.

2.7 Reporting requirements

This report, when read in conjunction with the reference material set out above, is compliant with the following Technical Actuarial Standards (TAS) issued by the Financial Reporting Council:

- TAS 100 – Principles for Technical Actuarial Work; and
- TAS 300 – Pensions.

The calculations undertaken to produce this report have complied with the above TAS.

The actuarial information contained in this report has been peer reviewed in accordance with Actuarial Profession Standards (APS) X2 – Review of Actuarial Work.

3. BACKGROUND

3.1 The Scheme

The Scheme is deemed to be a registered pension scheme under the terms of Schedule 36 of the Finance Act 2004.

The Scheme is open to existing members and future new entrants and members of the Scheme continue to accrue benefits.

3.2 Core benefits under Rules

We have valued the Scheme benefits set out in Ordinances and Rules of the Scheme. References to Pensionable Salary in this report have the same meaning ascribed to them as in the above documents. A summary of the benefits valued is set out in Appendix C, although it should be borne in mind that in the event of any discrepancy between this summary and the Rules, the Rules will prevail.

Members may pay Additional Voluntary Contributions (AVCs) to increase benefits payable from the Scheme. Liabilities and assets shown in this report exclude money purchase AVCs but do include AVCs used to provide additional service credits.

3.3 Allowance for discretionary benefits

The Scheme Rules allow discretionary benefits to be provided to members.

In recent years this option has not been exercised, and therefore no discretionary benefits have been granted. As such the valuation does not allow for any discretionary benefits and assumes that any which are granted will be funded at the time.

3.4 Allowance for insured benefits

The Trustee does not insure death in service benefits.

A very small minority of the pensions in payment are partly insured with an insurance company. These have been excluded from the funding valuation as they are exactly matched by an insurance policy. As required by legislation, we have allowed for them in the PPF Section 179 valuation.

3.5 Allowance for member options

As agreed for this valuation, allowance has been made for Members electing to commute some of their pension for a cash sum at retirement

3.6 Allowance for GMP equalisation

I set out my thoughts on the possible impact of GMP Equalisation in my Report on Proposed Assumptions. Having considered this further, I have come to the conclusion that any allowance for GMP Equalisation will not be material to the results set out in this report.

We have carried out some preliminary calculations for the affected deferred members of the Scheme. Their deferred pensions are revalued in deferment in line with the RPI, subject to an underpin of the minimum required by legislation. This underpin has different revaluation rates for GMP and excess over GMP, so does differ for men and women. However, this underpin rarely bites, and so for the vast majority of deferred members GMP Equalisation will have no impact. Having undertaken these calculations, I have concluded that any additional GMP Equalisation liability for deferred members would be only a few thousand pounds. The additional liability for pensioners could be higher but not significantly so - I do not currently have sufficient information to calculate this fully.

The further reasoning for this is as follows:

- All relevant pensions, including GMPs, are increased both in deferment and payment in line with increases in RPI;
- The retirement age for benefits accrued prior to 1997 is age 60;
- Once in payment, there will be no "cross over" for an opposite sex calculation.

Taking these together, it is clear that any reserve for the additional liability for GMP Equalisation will be immaterial.

Please note that the expenses of undertaking the work involved in checking whether or not anyone will be better off on an opposite sex basis will not be as small – I envisage that the costs of investigating this are likely to outweigh any overall member benefit.

3.7 Scheme changes since previous valuation

There have been no changes to the Scheme's benefits since the last valuation.

3.8 Legislative changes since previous valuation

There have been no legislative changes that have affected the Scheme's benefits since the previous valuation.

3.9 Membership data

The data for the valuation was provided by the Pensions Office on behalf of the Trustee. Whilst we have taken reasonable steps to satisfy ourselves that the data provided is of adequate quality for the purposes of the valuation, ultimately we have relied on the accuracy of the information provided. The membership data covered details of 5,077 active members, 4,871 deferred pensioners, 361 pending members and 3,453 pensioners. A more detailed summary is provided in Appendix A of this report.

We carried out the following data checks:

- Comparison and reconciliation with previous valuation data;
- Missing data and consistency checks;

- Checking Pensionable Salaries against previous data and for reasonableness;
- Checking Final Pensionable Salaries against previous data and for reasonableness;
- Checking part time member data; and
- Checking deferred pensions and pensions in payment against previous data.

We are grateful to the Pensions Office for their assistance in answering our queries.

3.10 Asset data

The audited Scheme accounts show that the market value of the Scheme's assets at 31 July 2021 amounted to £814,649,591. This includes assets in relation to members' added years AVCs but excludes money purchase assets and insured pensions. Appendix B provides a more detailed breakdown of the Scheme's assets.

3.11 Employer matters

We have not provided any advice to the Trustee in connection with the Employers.

3.12 Material post valuation date events

There is currently a great deal of volatility in financial markets, much of it stemming from the war in Ukraine and the impact it is having in energy markets and on inflation. This volatility affects both asset valuations and the value placed on Scheme liabilities. The Trustee considers that the University's covenant is sufficiently strong to be able to bear such volatility.

We are not aware of any other material events that have occurred after the valuation date which would affect the results set out in this report.

4. FUNDING PRINCIPLES

4.1 Statutory funding objective

The Statutory Funding Objective is set out in the Statement of Funding Principles dated 31 October 2022 included as Appendix D to this report.

Under Rule 44 of the Rules, each Employer must pay contributions at rates decided by the University as Principal Employer, after taking actuarial advice. However, this is overridden by the Pensions Act 2004, under which the Principal Employer and Trustee jointly agree to the Statement of Funding Principles and the contribution rates payable to the Scheme.

4.2 Agreed funding target

The agreed funding target for the Scheme is the Technical Provisions. I would stress that achieving this target may mean that other targets may still not be met. In particular, in current market conditions if the Scheme were to be 100% funded on the Technical Provisions, it would only be 35% funded on the Solvency target, i.e. Technical Provisions are not the same as wind up costs. Unless further funds were to be available, on a winding-up of the Scheme it would not be possible to secure members' benefits in full.

4.3 Funding objectives

Based on the Technical Provisions as a funding target, the currently agreed funding objectives are as follows:

- to assume that the Scheme will invest predominantly in return seeking assets, and overall credit should be taken for a real long term investment return of 1.9% per annum for both past and future service;
- subject to the above, to adopt a set of assumptions which is prudent;
- not to make any allowance for any mis-matching of assets and liabilities;
- not to make any allowance for discretionary benefit increases;
- to eliminate any deficit relative to the funding target by increases in the rate of contributions over a period that does not exceed 16 years; and
- in terms of overall prudence, the Trustee takes into account its assessment of the strength of the covenant of the Employers, the risks inherent in the Scheme's investment strategy and the Scheme's solvency position.

4.4 Changes to funding objectives

Since the previous valuation, the Trustee and the University have agreed to fund future service on the same basis as for past service in relation to the real discount rate – previously the future service discount rate was set in line with a real return of 2.6% per annum.

4.5 Funding implications on stability of contribution rate

The funding objective includes allowance for investment in equity type assets, and makes no allowance for the mis-matching of assets and liabilities. Since the returns on equities can be volatile over even relatively short periods of time, this means that the contribution rate will be less stable than would apply were these factors not included.

4.6 Funding implications for paying CETVs in full

The funding objective adopted is such that if the Scheme meets its objective there will be more than sufficient assets to pay unreduced transfer values.

5. VALUATION METHOD AND ASSUMPTIONS

5.1 Funding method

The cost of the future benefit accrual within the Scheme has been determined in this valuation using the Projected Unit funding method.

Under this method, the capital value of the benefits accruing over the year following the valuation date, based on members' Pensionable Salaries projected to the date of their retirement, death or earlier exit, is expressed as a percentage of the total current Pensionable Salaries, to give the future service contribution rate.

This method will result in a relatively stable future service contribution rate provided the profile of the active membership, by age, sex and salary, does not change significantly between Actuarial valuations. There is therefore an implicit assumption that there are new entrants to the Scheme. If there are not any new entrants to the Scheme the future service contribution rate will be expected to rise as the active membership ages.

5.2 Previous funding method

The same funding method was used for the previous actuarial valuation. However, a control period of 4 years was used at the previous valuation. This was a control mechanism to help smooth the contributions rates for the Scheme after a change in the benefit structure. There is no longer a need for this mechanism.

5.3 Factors to consider in choosing funding method

Under the Code of Practice on Scheme funding, the Trustee is required to consider the following factors (inter alia) when choosing a funding method:

- the ability and willingness of the Employers to make advance provision for future events; and
- the likely number of new entrants to the Scheme in future.

We have not provided any advice to the Trustee in connection with these factors. The Trustee is satisfied that the chosen funding method is appropriate bearing in mind the above factors.

The past service funding position is calculated by comparing the value placed on the existing Scheme assets with the value placed on members' benefits accrued before the valuation date allowing for future Pensionable Salary increases to retirement, death or earlier exit.

5.4 Valuation assumptions

The valuation assumptions are given in Appendix E. Details of how they were derived are set out in the Trustee's Statement of Funding Principles included in Appendix D.

Note that the Trustee has considered each assumption individually. No assumption has been adjusted as a proxy to compensate for shortfalls in another assumption.

5.5 Assets

As for the previous valuation, we have used a market-related basis to value both the assets and liabilities of the Scheme. Assets are included at their market value, whilst liabilities are valued using financial assumptions based on the yields implied by these market values. This does lead to a degree of volatility in the valuation results from one valuation to the next but I believe it ensures that a compatible and consistent approach is adopted to valuing both assets and liabilities, and that it will provide a more appropriate estimate of the cost of the Scheme benefits in current market conditions.

6. FUNDING VALUATION RESULTS

6.1 Results

The following Section summarises the results of the valuation on the Scheme's funding objective using the basis described in Section 5 and Appendix E.

6.2 Past service position/technical provisions

		£000's
Value of benefits in respect of service before 31 July 2021:		
• Active Members		231,404
• Deferred Pensioners		192,972
• Current Pensioners		306,574
• Expenses		7,310
Technical Provisions	(A)	738,260
Market Value of Scheme Assets	(B)	814,650
Past Service Surplus/(Deficit)	(B-A)	76,390
Level of Funding of Past Service Benefits	(B/A)	110%

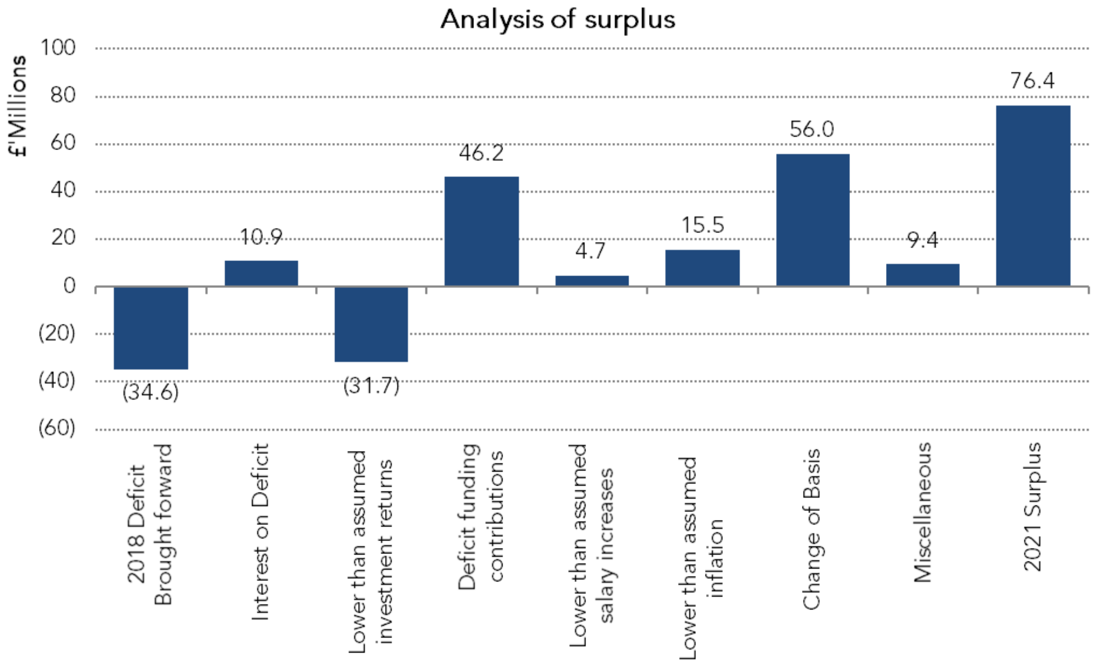
The appropriate actuarial certification of the Scheme's Technical Provisions is included as Appendix F to this report.

The Trustee and the University should be aware that the Technical Provisions are not the same as the cost of winding up the Scheme. This is shown in Section 9 of the report.

The past service surplus of £76.4m compares to the deficit disclosed by the previous valuation of £34.6m. An approximate analysis of the principal factors affecting the level of deficit since the previous valuation is given below.

The miscellaneous item in the analysis includes, for example, the effects of variations over the inter-valuation period between actual experience and the assumptions made for mortality, withdrawals and expenses used in the previous valuation.

	£m's
Surplus/(Deficit) as at 31 July 2018	(34.6)
Interest on Assets less interest rate on liabilities	10.9
Deficit contributions paid	46.2
Expected (deficit)/surplus as at 31 July 2021	22.5
Investment returns lower than assumed	(31.7)
Salary increases lower than assumed	4.7
Pension increases lower than assumed	15.5
Changes in assumptions:	56.0
Miscellaneous	9.4
Actual Surplus/(Deficit) as at 31 July 2021	76.4



6.3 Significant variations

The most significant variations in the analysis are as a result of:

- Deficit funding contributions paid by the Employers;
- Investment returns were lower than assumed over the 3 year period;
- Inflation and salary increases were lower than assumed;
- Changes in the valuation basis, mainly as a result of changes in RPI/CPI, allowance for cash commutation, retirement and mortality assumptions.

6.4 Expenses

I have reviewed the allowances for the ongoing expenses of the Scheme and compared them to recent actual experience. Over the past 3 years the ongoing expenses have averaged 1.2% of Pensionable Salaries.

The PPF levies account for 0.8% of the above actual expense allowance, although this has recently fallen to 0.7%.

The current allowances for expenses are 0.9%pa of Pensionable Salaries plus 1% of the Technical Provisions.

The Trustee has agreed to retain the current allowances on the assumption that the recent higher levels were exceptional, and that expenses will return to a lower level in the long term.

6.5 Contributions

The rates shown below do not include any allowance for members' AVCs; such contributions are payable in addition.

The overall joint contribution rate to fund future benefit accrual is 13.6% of Pensionable Salaries. This includes allowances for members' contributions, the cost of self-insuring the death in service benefit and for the expenses of running the Scheme. The breakdown of this rate is shown below, along with the existing rates of contribution in brackets for comparison:

	Salary Sacrifice Members		Non Salary Sacrifice Members	
	Active Members %	Employers %	Active Members %	Employers %
Pre-2013 Members paying additional contributions under Rule 45.6	Nil	22.6 (20.0)	8.5	14.1 (11.5)
Other Pre-2013 Members	Nil	19.6 (16.5)	5.0	14.6 (11.5)
Post-2013 Members	Nil	10.6 (8.8)	3.0	7.6 (5.8)

The current overall joint contribution rate is 12.2% of Pensionable Salaries. The increase to 13.6% in the contribution rates is mainly due to changes in the future service funding basis.

The University and Trustee have agreed that the Employers will continue paying contributions for future accrual at the current rates until 31 July 2023, and then increase to the rates shown above.

In addition, currently the Employers are paying £14,595,000 per annum, to pay off the deficit from previous valuations. These additional contributions will cease on 31 July 2023.

6.6 Future Contingent Deficit Reduction Contributions

The Trustee and University have agreed to carry out updated funding valuations at each future 31 March, commencing 31 March 2023. Should any of these valuations confirm that the Scheme funding level has fallen below 95% then the Employers will pay deficit recovery contributions of £10,000,000 per annum, payable monthly, from the following 1 August. If a subsequent valuation as at 31 March shows that funding level has increased back above 100% then these contributions will cease from the following 31 July.

6.7 Future progression and material developments

Assuming that all funding assumptions in Section 5 and Appendix E are borne out in practice and that the Employers pay contributions as described above, then I expect the funding level to improve by the next valuation.

6.8 Further issues: CETVs

As the Scheme has a surplus on the funding basis member reserves are sufficient to pay CETVs in full and the Trustee is not allowed to reduce them.

I recommend that the CETV basis be reviewed following completion of this valuation.

6.9 Scheme factors

The actuarial factors used in individual member calculations are due for review following the valuation to reflect the changes in economic and demographic conditions since the last valuation.

7. FUNDING RISKS AND SENSITIVITIES

7.1 Funding Risks

There are risks inherent with any funding objective, even if the funding target is met, and the following risks should be appreciated and where possible mitigated.

7.2 Sponsor risk

If the Employers become insolvent or are otherwise unable to meet the contribution rate set then the risk is that members may not receive all benefits they expect. The Trustee takes a prudent approach to funding to mitigate this risk to some extent.

7.3 Investment return

If the assets under-perform the returns assumed in setting the funding target then additional contributions may be required at subsequent valuations.

7.4 Investment matching risk

The Scheme invests significantly in equity type assets, whereas the solvency target is closely related to the return on bonds. If the Scheme were to wind-up when these equity type assets have fallen in value relative to the matching assets of bonds, members may not receive their full expected benefits. If the Scheme were not to wind-up, additional contributions may be required.

7.5 Longevity risk

If future improvements in mortality exceed the assumptions made then additional contributions may be required. The Trustee has taken a prudent approach to possible future improvements in longevity to help mitigate this risk.

7.6 Solvency risk

As the funding target is not a solvency target, and the investment strategy does not follow that required for a solvency target, the assets of the Scheme may not be sufficient to provide all members with the full value of their benefits on a Scheme wind-up.

7.7 Inflation risk

Most Scheme benefits are linked to inflation (RPI/CPI). If actual inflation is higher than expected or if future inflation expectation increases then additional contributions may be required at subsequent valuations.

7.8 Concentration of assets

If the Scheme invests a significant proportion of its assets in one class of investments for example UK equities, or in one specific investment it is exposed to an increased risk from falls in that investment. This may reduce the level of funding and require additional contributions to correct. The Trustee has no such investment.

7.9 Self-investment risk

If the Scheme invests in the Employers in any form it is at risk that the value of this investment will fall if the Employers perform badly. This will coincide with the time the Employers are least able to make additional contributions to correct the situation. The Trustee does not invest in the Employers to avoid this risk.

7.10 Member option risk

If members of the Scheme exercise options allowed by the Scheme on a scale which is sufficient to lead to an increase in costs, the Scheme funding position may worsen. Currently there are no such options that apply without Trustee and Employer consent. The Trustee would request that the exercise of such options would be funded by the Employers at that time.

7.11 Climate related risk

The world's climate is changing and this poses risks to the provision of benefits for members. These could arise from:

- Physical risks – the risks arising from potential degradation to physical assets; e.g. property damage, disruption of resource availability, due to extreme weather events such as flooding and in the longer-term from changes to rainfall patterns affecting land use and the movement of populations reducing local workforce availability.
- Transition risks – depending on the nature and speed of mitigation and adaptation policies and requirements by governments and regulators related to climate change, transition risks may pose varying levels of financial and reputational risk to pension funds from the potentially rapid reduction in the market value of, or income generated by, assets.
- Liability impacts – extreme hot or cold weather might impact death rates, whereas generally warmer winters might improve life expectancy and so longevity improvement trends.

Investment management is delegated to managers who will be aware of this risk in their portfolio construction. It is difficult to predict the impact on life expectancy for members largely based in the UK. Furthermore, the Trustee should consider the extent to which climate change may impact businesses (and so employer covenants).

It is difficult to quantify any specific impact at this point in time – the Trustee should keep this under review as more evidence develops.

7.12 Summary

The above list is not exhaustive but covers the main risks for the Scheme. Some of the risks can be reduced by adjusting the funding strategy, for example investment matching risk. Other risks cannot be removed, for example longevity risk, and the Trustee must be aware of these risks and monitor them closely.

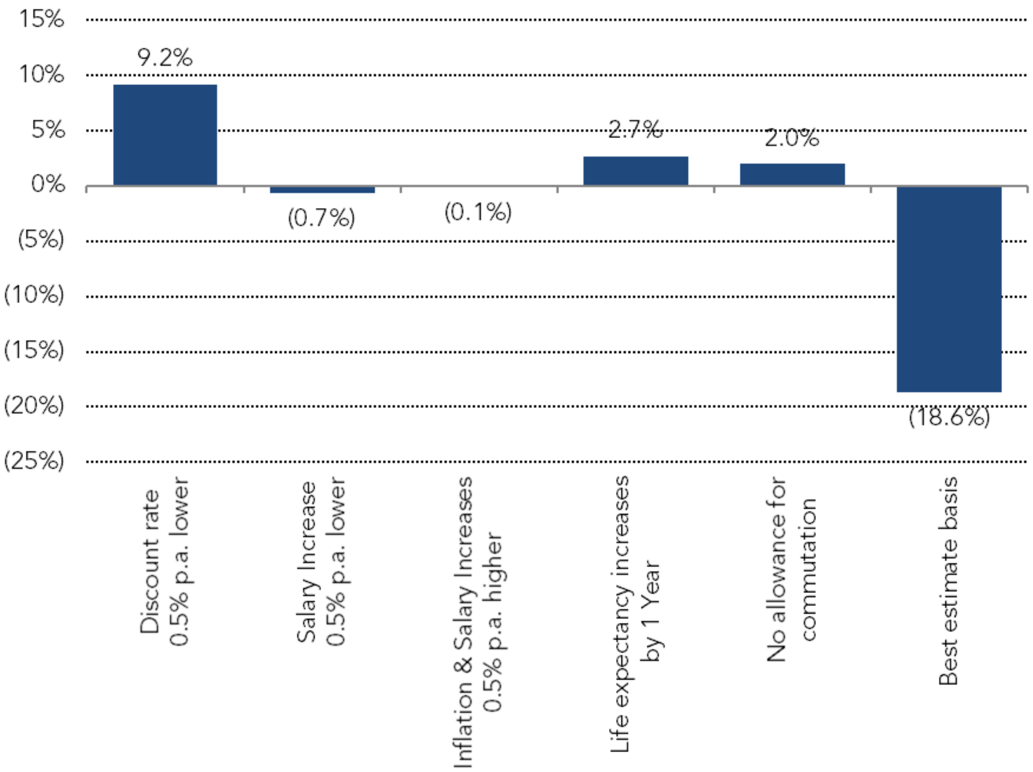
7.13 Sensitivities

The risks discussed above can have a significant impact on the results of the valuation. For example, the financial assumptions that have the most significant effect on the results of the valuation relate to the investment return, the rate of increase in Pensionable Salaries and the rates of increase of pensions in payment or deferment. In addition, improving longevity can also result in increased Scheme liabilities.

The chart below shows the approximate percentage increase in the Scheme's funding objective liabilities if each of the financial assumptions was changed by the amount specified. The figures shown are for a guide only as the effects of changing the assumptions are interdependent.

We have also included a best estimate valuation assuming that margins for prudence are removed from the funding assumptions. This leads to the following main assumptions:

- Discount rate increased by 1.1% to RPI + 3.0%;
- The base table is adjusted by a factor of 121% (rather than 115%) for males, and 105% (rather than 100%) for females;
- Proportion married set at 75% for males and 65% for females; and
- No initial additional mortality improvement



The chart shows that the investment return assumption has the greatest impact on the size of the Scheme's liabilities. Therefore the Scheme's funding position is likely to deteriorate significantly if the Scheme's assets do not attain the real investment returns assumed.

8. PENSION PROTECTION FUND – SECTION 179 VALUATION

8.1 Background

Since April 2005 the Scheme has been required to pay levies to the Pensions Protection Fund (PPF). The PPF provides a minimum level of benefit for members of pension schemes that wind-up in deficit.

In order to assess the appropriate levy the PPF require pension schemes to submit Section 179 valuations at least every three years. The section 179 valuation requires the Scheme Actuary to value the PPF level of benefits using a method and assumptions defined by the PPF board, and detailed on their website.

		£000's
Value of benefits in respect of:		
• Active Members		547,539
• Deferred Pensioners		494,734
• Current pensioners, including insured		419,669
• Expenses of winding up		3,000
• Expenses of benefit installation		11,599
Total Section 179 liabilities	(A)	1,476,541
Market Value of Scheme Assets, including insured pensioners	(B)	815,446
Section 179 Surplus/(Deficit)	(B-A)	(661,095)
Level of Section 179 Funding	(B/A)	55%

8.2 Changes since previous valuation

The previous valuation followed guidance G8 and used assumptions A8. In accordance with the requirements of the PPF the assumptions have been updated to A10 for this valuation.

The PPF funding level has deteriorated from 59% to 55% since the last valuation, mainly as a result of:

- changes in the basis, mainly as a result of lower investment return assumptions;
- contributions by the Employers being insufficient to cover the costs of accrual on the PPF basis; and
- interest on the deficiency from the previous valuation,

offset by higher investment returns than expected on this basis over the period.

8.3 Additional information

The Section 179 funding level is below 100% and may mean larger PPF levies in the future. These results need to be supplied to the Pensions Regulator and the PPF board via the Pensions Regulator's online Exchange system.

When submitting information on Exchange the following additional information is required:

Section 179 guidance used	G8
Section 179 assumptions used	A10
Percentage of assets held as insurance contracts where this is not included in the asset value recorded in the Scheme accounts	0.1%
Percentage of liabilities matched by insurance contracts:	
Active members	0%
Deferred pensioners	0%
Pensioners	0.1%

Proportion of liabilities related to period of service:

	Pre-6 April 1997	6 April 1997 to 5 April 2009	Post-5 April 2009
Active members	5%	30%	65%
Deferred members	12%	49%	39%
Pensioners	38%	62%	

	Members	Average Ages
Active members	5,077	49
Deferred pensioners	5,232*	47*
Pensioners	3,453	70

*includes pending members

8.4 Development of future PPF funding level

The future PPF funding level can be expected to decrease as members pass Normal Retirement Age and so become entitled to a higher level of compensation from the PPF. Against this, any deficit recovery contributions will improve the funding level. Investment returns in excess of those assumed to be achieved will also improve the funding level.

Member movements will also have an effect, though these are expected to be less material than the above factors. In practice, the position can be expected to be volatile.

9. SOLVENCY POSITION

9.1 Solvency

We have separately considered the solvency position, assuming that the Scheme was wound-up at the valuation date and members' accrued benefits were secured by the purchase of deferred and immediate annuity policies issued by an insurance company.

This is an approximation only as the true cost can only be provided by approaching an insurance company directly for a quotation

9.2 Summary of Assumptions

The key assumptions adopted for the solvency valuation are shown below. The equivalent assumptions for the solvency valuation at the previous valuation are also shown for comparison:

	2021 Solvency Valuation	Previous Solvency Valuation
Pre-retirement return – non-pensioners	Bank of England yield curve – 0.2% p.a.	1.60%
Post-retirement return – non-pensioners	Bank of England yield curve – 0.2% p.a.	1.80%
Discount rate for pensioners	Bank of England yield curve	1.80%
RPI inflation	Bank of England RPI yield curve – 0.2% p.a.	3.45%
CPI inflation	RPI-0.65% to 2030; and RPI-0.1% from 2031	3.25%
Mortality pre and post retirement	115% of S3PMA pension mortality tables for males and 100% of S3PFA pension mortality tables for females. Plus a projection based upon the CMI_2020 model with a long-term 1.5% p.a. improvement, with an initial improvement rate of 0.5% p.a. and standard smoothing factor 7.0	121% of S2NMA pension mortality tables for males and 90% of S2NFA pension mortality tables for females. Plus a projection based upon the CMI_2017 model with a long-term 1.75% p.a. improvement with no initial improvement rate and standard smoothing factor 7.5
Proportion married	85%	85%

9.3 Expenses

We have included an estimate of the expenses associated with organising a wind-up equal to 1% of the liabilities. The true cost of winding-up the Scheme may be higher or lower than this estimate.

9.4 Summary

On this basis the solvency position of the Scheme at the valuation date is shown below:

		Solvency valuation £000's	Previous solvency valuation £000's
Value of benefits in respect of:			
• Active Members		796,064	675,518
• Deferred Pensioners		727,938	534,580
• Current Pensioners		557,254	490,346
• Expenses		20,813	17,004
Total solvency liabilities	(A)	**2,102,069**	1,717,448
Market Value of Scheme Assets	(B)	**814,650**	708,068
Solvency Surplus/(Deficit)	(B-A)	**(1,287,419)**	(1,009,380)
Level of Solvency Funding	(B/A)%	**39%**	41%

9.5 Changes since previous valuation

The solvency level has deteriorated from 41% to 39% since the previous valuation as a result of:

- changes in the basis, mainly as a result of lower investment return assumptions;
- contributions by the University being insufficient to cover the costs of accrual on the Solvency basis; and
- interest on the deficiency from the previous valuation,

offset by higher investment returns than expected on this basis over the period.

9.6 Expected solvency level at next triennial valuation

Assuming that all actuarial assumptions in this section are borne out in practice and that contributions are paid as set out under the funding basis, then I expect the solvency level to worsen between now and the next valuation as the cost of pension accrual exceeds the contributions being paid on this basis.

9.7 Comparison with scheme funding

If the Scheme's funding objective had been met in full the level of solvency funding would have reduced to 35%.

The Solvency basis places a higher value on the Scheme liabilities than the Funding basis. This is due to different assumptions adopted under this basis. This basis provides a useful reference point for the Trustee and University when considering the adequacy of the Technical Provisions.

9.8 Debt on Employers

Under current legislation if the Scheme were to be wound-up the deficit on the solvency basis would be imposed as a debt due from the Employers. If the Employers are unable to pay the debt in full, then the liabilities would be met in the order of priority set out in the Scheme's Trust Deed and Rules as overridden by the Pensions Act 1995 and subsequent Regulations.

9.9 Priority order

The cover, on the solvency basis, of the Scheme benefits using the order of priority which would apply as at the date of signature of this report is as follows:

Liability	Cover
Expenses and money purchase benefits	100%
Benefits provided by the Pensions Protection Fund	55%
Benefits in excess of those provided by the Pensions Protection Fund	0%

This table shows that at the valuation date the benefits provided by the Pensions Protection Fund (PPF) were not covered in full. Therefore at this date if the Scheme had wound up without a solvent employer it would have entered the PPF. This would have resulted in members' benefits being reduced below their full entitlements.

9.10 Future progression and material developments

Based upon the assumptions adopted for the solvency calculations, payments of Employer contributions at the rate detailed in Section 11 are projected to be insufficient to fund on the solvency basis. Consequently the above solvency position is expected to deteriorate over the period to the next actuarial valuation.

Employer contributions at the rate detailed in Section 11 are also likely to marginally worsen the level of coverage on the current order of priorities.

10. INVESTMENT STRATEGY

10.1 Background

The Pensions Act 1995 requires the Trustee regularly to review their Statement of Investment Principles to ensure that it is consistent and compliant with Section 36 ("Choosing Investments"). We have therefore set out below some comments on the nature of the Scheme's liabilities to assist in this review.

10.2 Asset split

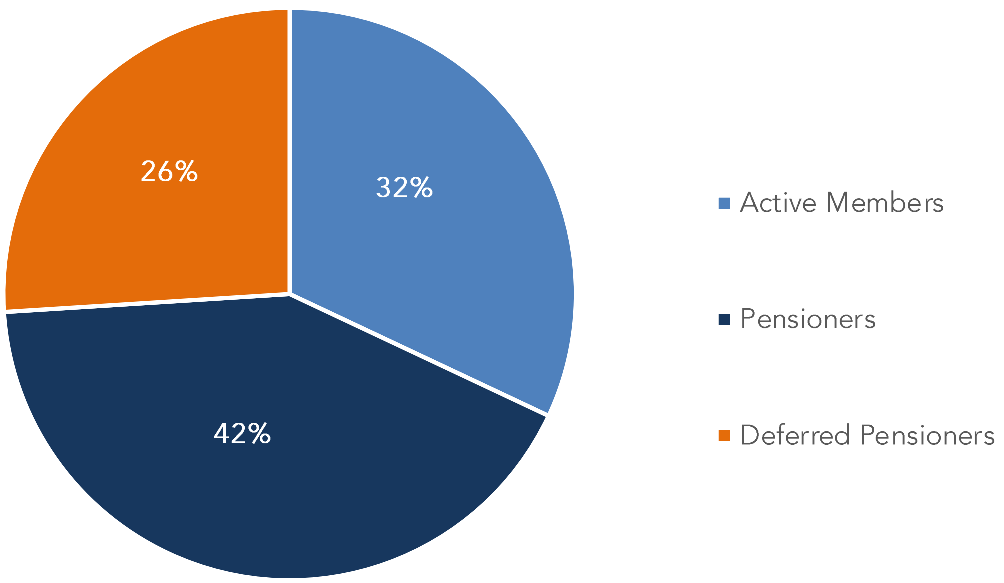
Appendix B provides details of the Scheme's assets at the valuation date. At that time approximately 76% of the assets were invested in equities, hedge funds and property assets, which provide unknown future returns. The remainder of the assets were invested in gilts, corporate bonds and cash, which, if held until maturity, provide known returns assuming that there are no defaults.

Based on the current investment strategy, the Trustee's investment advisors, Aon Hewitt, have kindly given us their updated best estimate assumptions for future investment returns, which is RPI + 3.5% per annum.

For the calculation of the Technical Provisions for the 2021 valuation the Trustee has adopted a discount rate of RPI + 1.9% per annum.

10.3 Liability split

The chart below shows the breakdown of the Scheme's Technical Provisions by member category.



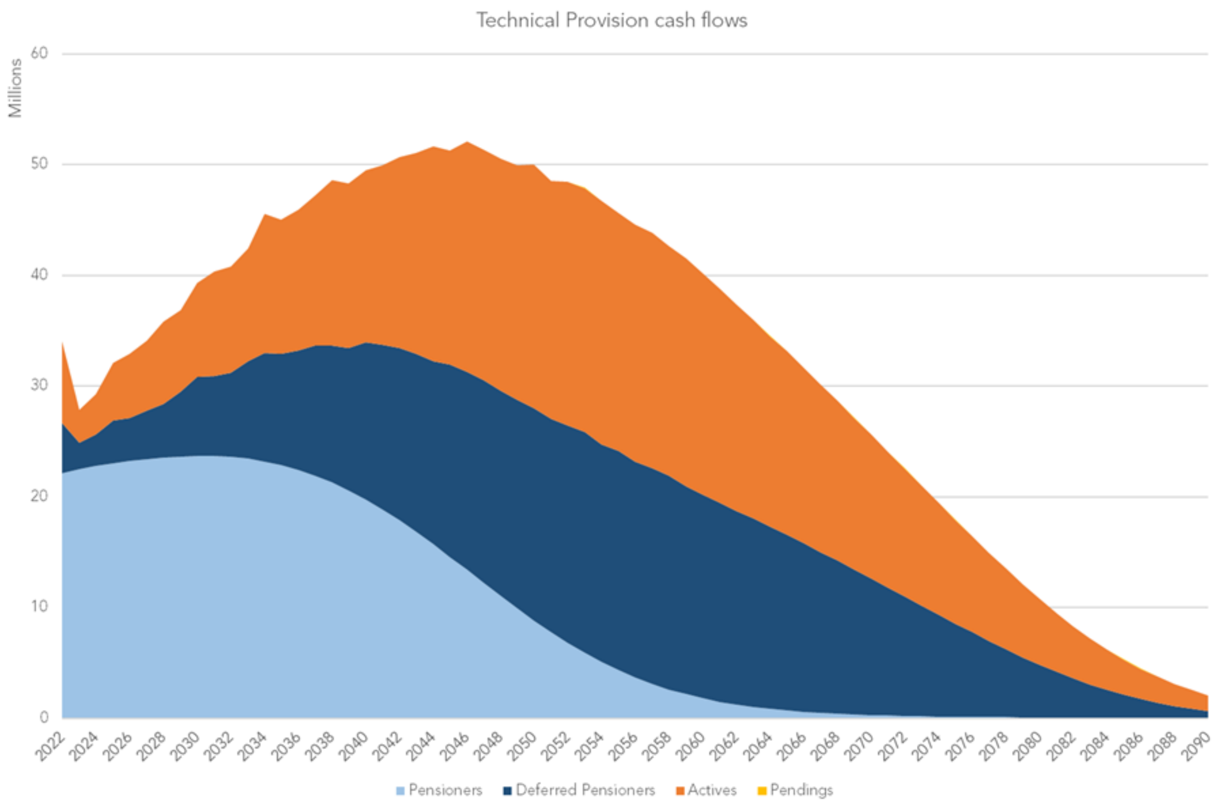
10.4 Comparison

Looking at the chart, the Scheme has a significant proportion (42%) of its liabilities directly related to pensioners. The Scheme assets are only 24% invested in bonds and cash and so this will increase the volatility of the funding level as the assets and liabilities will not change value in the same way.

10.5 Scheme Cash Flows

The chart below shows the anticipated future cash flows of the Scheme based on the assumptions underlying the Technical Provisions basis. Note that this excludes any allowance for future benefits accrued on or after 1 August 2021.

The Trustee should note that the initial spike is due to the funding assumption that members over normal retirement age will retire immediately. In practice such retirements may be spread over several years.



10.6 Recommendation

There are a number of different funding measures the Scheme can match against in order to reduce risk with respect to the funding measure.

Alternatively, the Trustee might wish to accept a certain degree of mismatching in the expectation of higher investment returns. I understand that the Trustee is shortly to review their investment strategy.

11. CONCLUSIONS

11.1 Funding level and contributions

The Scheme's funding level on the Statutory Funding Objective at the valuation date was 110%, equivalent to a surplus of £76.4 m.

The total average contribution rate for future accrual is 13.6% of Pensionable Salaries and these new rates will be paid from 1 August 2023. Until then contributions will continue at the existing rates, representing an average contribution rate of 12.2% of Pensionable Salaries. Expenses including PPF levies are included in this contribution rate.

In addition, the Employers will continue to pay contributions of £14,595,000 per annum, payable monthly, until 31 July 2023.

The Trustee and the University have agreed to carry out interim valuations at each future 31 March, commencing 31 March 2023. Should such valuation show that the funding level has fallen below 95% then the Employers will pay £10,000,000 per annum, payable monthly, commencing from the following 1 August. Should a subsequent 31 March valuation show that funding level has improved to over 100% then this additional contribution will cease on the subsequent 31 July.

11.2 Solvency and PPF Section 179 funding level

The solvency position of the Scheme has been measured by reference to the estimated cost of buying out the benefits with an insurance company. As at the valuation date the solvency funding level of the Scheme was 39%.

The PPF funding level is 55%.

11.3 CETVs

I recommend that the CETV basis be reviewed following completion of this valuation.

11.4 Factors

The actuarial factors used in individual member calculations should be reviewed following the completion of the valuation to reflect changing economic and demographic conditions.

11.5 Timescale and future valuation requirements

The next triennial valuation is due to take place as at 31 July 2024. As this Scheme has more than 100 members, interim actuarial reports will be required as at 31 July 2022 and 31 July 2023.

A Summary Funding Statement should be sent to members updating them on the Scheme's funding position. This should be issued by 31 January 2023.

Details of the valuation should be submitted to TPR as part of your next Scheme return.

R J SWEET
Scheme Actuary
Fellow of the Institute and Faculty of Actuaries

31 October 2022

RJS/SC/QL/dn/di

Appendix A – Membership Data

The Scheme membership data was supplied by the Pensions Office on behalf of the Trustee. We have relied on the accuracy of the information provided.

The data used in the valuation is summarised below, the previous valuation data is summarised in brackets for comparison.

Active Members	Males	Females	Total
Number of members	1,824 (1,827)	3,253 (3,075)	5,077 (4,902)
Total Pensionable Salary p.a.	£47,747,505 (£44,848,618)	£78,480,088 (£69,074,207)	£126,227,593 (£113,922,825)
Average Pensionable Salary p.a.	£26,177 (£24,548)	£24,125 (£22,463)	£24,863 (£23,240)
Average Pre 1 January 2013 past service (years)	3.4	2.2	2.7
Post 1 January 2013 accrued CRB pension (p.a.)	£2,287,179	£3,299,614	£5,586,793
Average age (unweighted)	42.9	42.8	42.8
Discounted mean term to retirement (years)	11.7	12.1	12.0

Notes

1. The member numbers have been agreed with the Pensions Office but may not accord with the audited Scheme accounts due to timing differences in the data extraction.

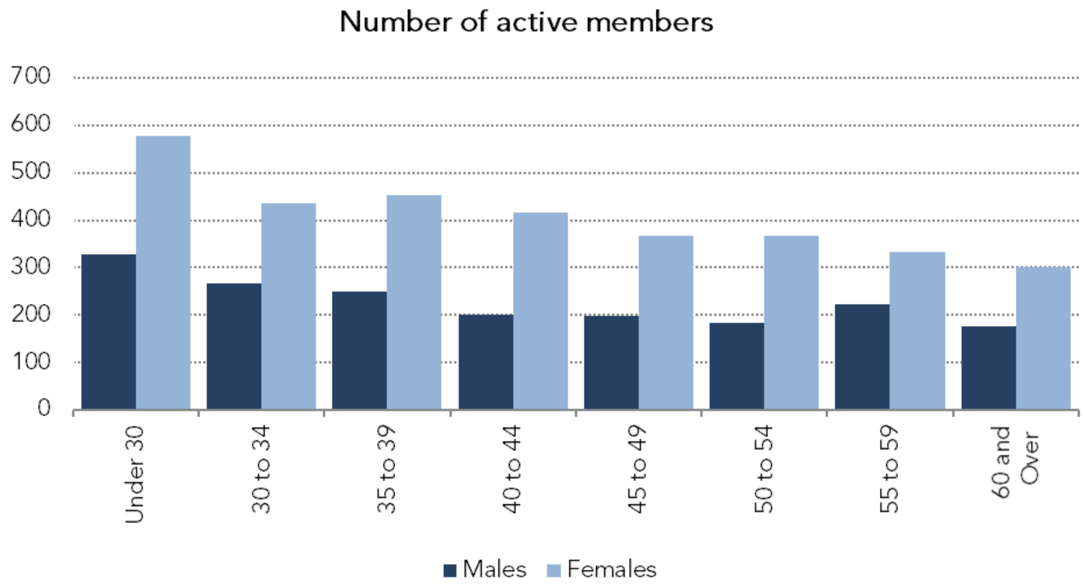
2. The figures for the previous actuarial valuation are shown in brackets where available.

3. Included in these statistics are 140 active members who have not yet retired, but who have passed age 65.

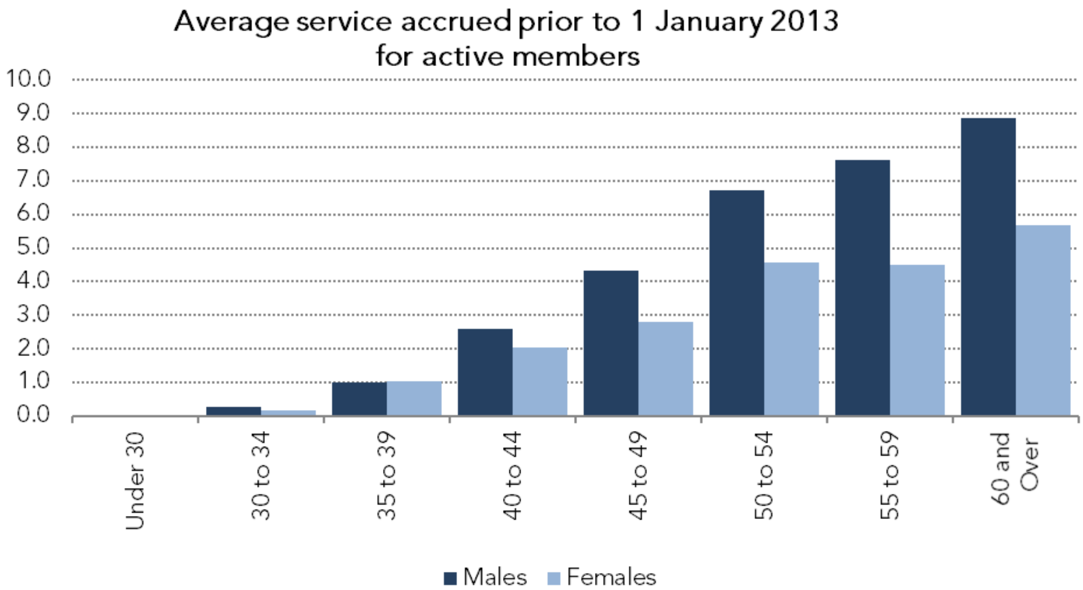
4. Total Pensionable Salaries shown above are the actual Pensionable Salary paid to members (i.e. not full time equivalent for part-timers) as provided to us by the Pensions Office.

5. The Average Past Service is the full time equivalent past service for all members and is represented in the graph below. It includes transferred-in added years, augmentations and AVC added years where appropriate.

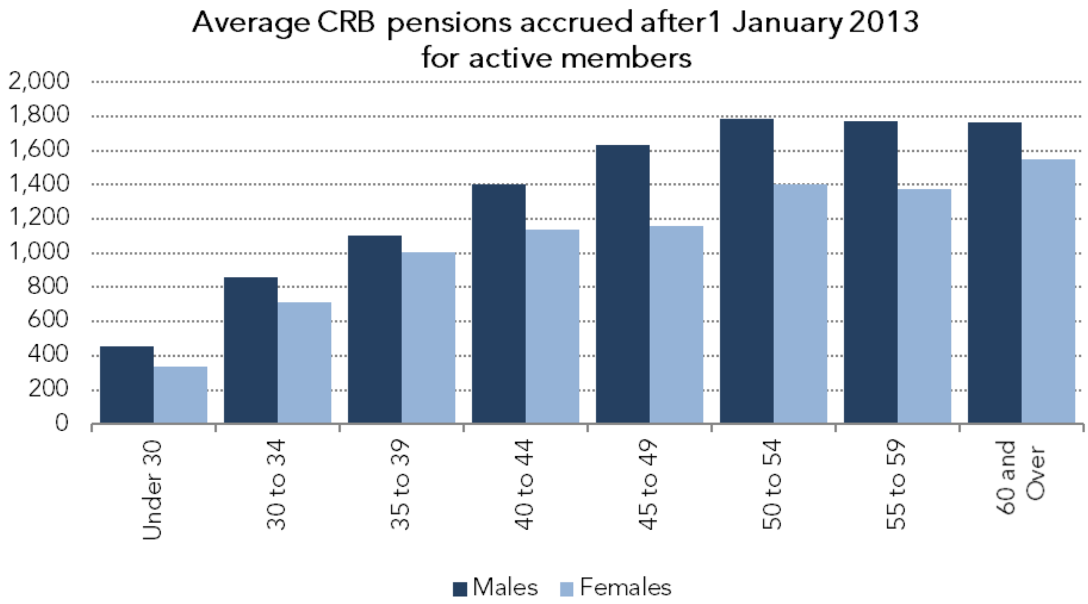
6. The discounted Mean Term to Retirement is the average term to the assumed retirement date, weighted by members' Technical Provisions.



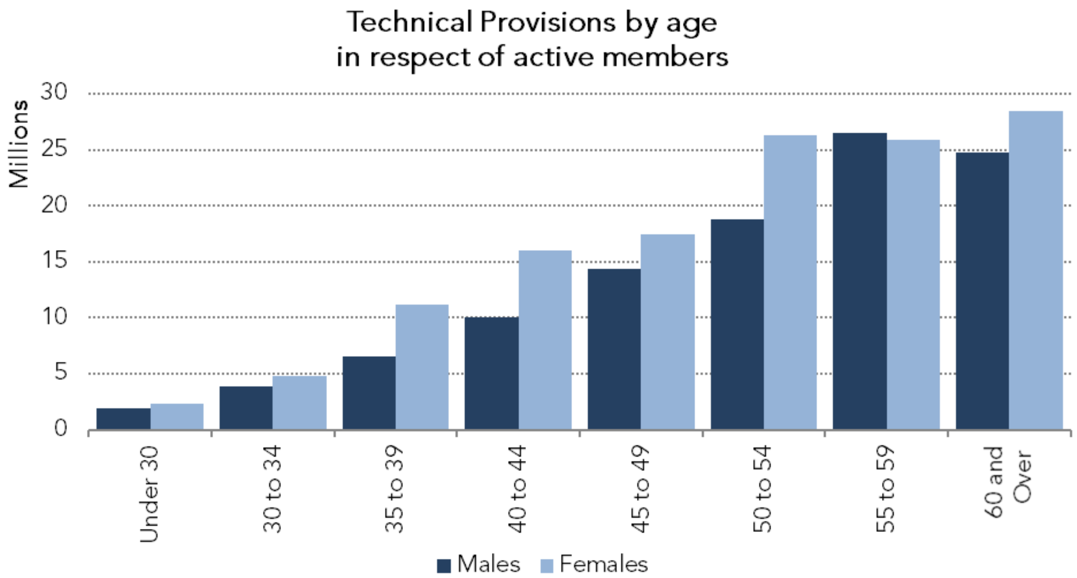
Number of active members
700
600
500
400
300
200
100
0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females



Average service accrued prior to 1 January 2013 for active members
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females



Average CRB pensions accrued after1 January 2013
for active members
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females

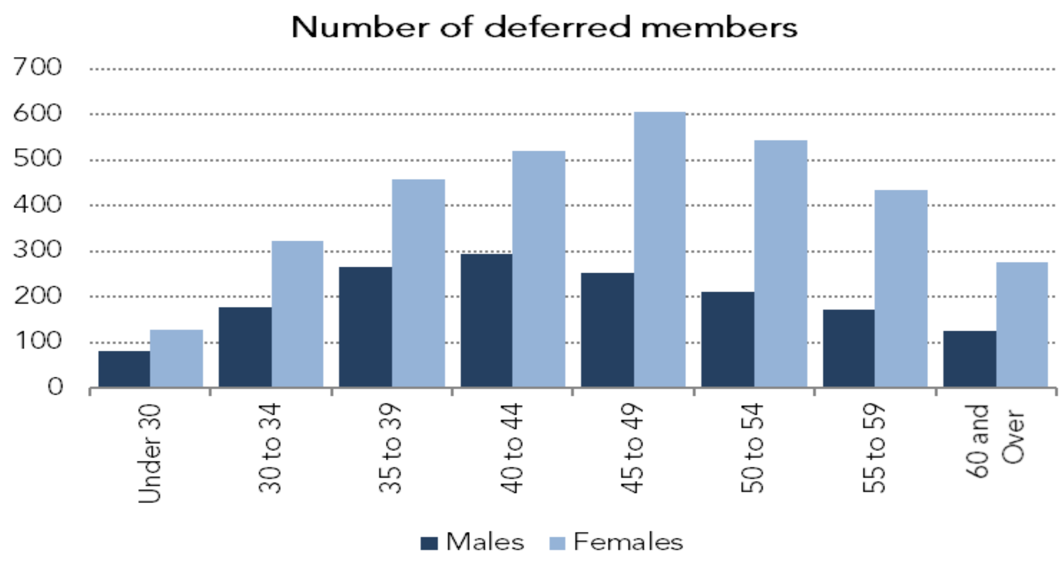


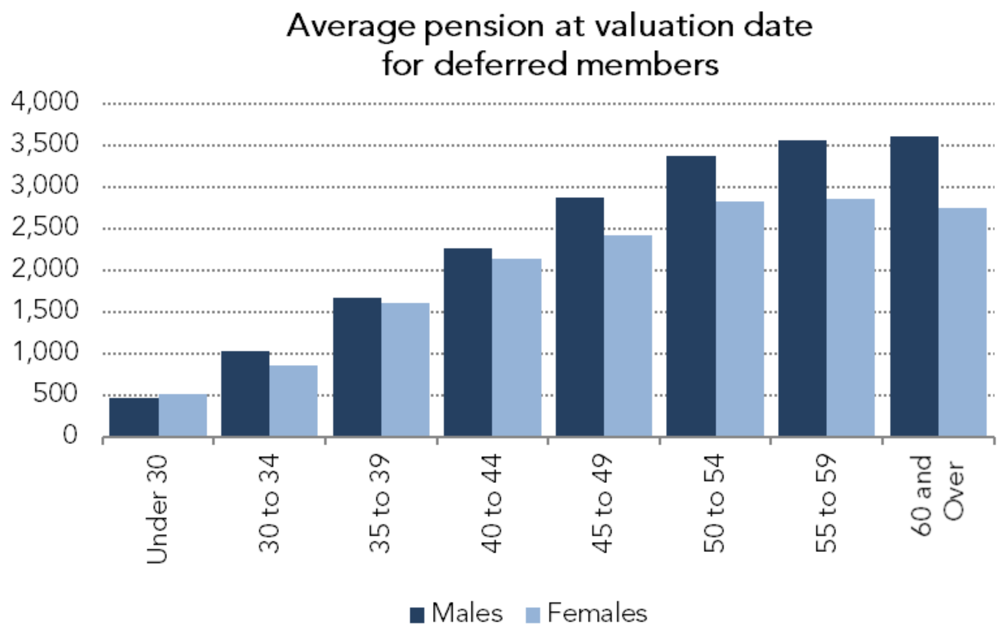
Technical Provisions by age
in respect of active members
Millions
30
25
20
15
10
5
0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females

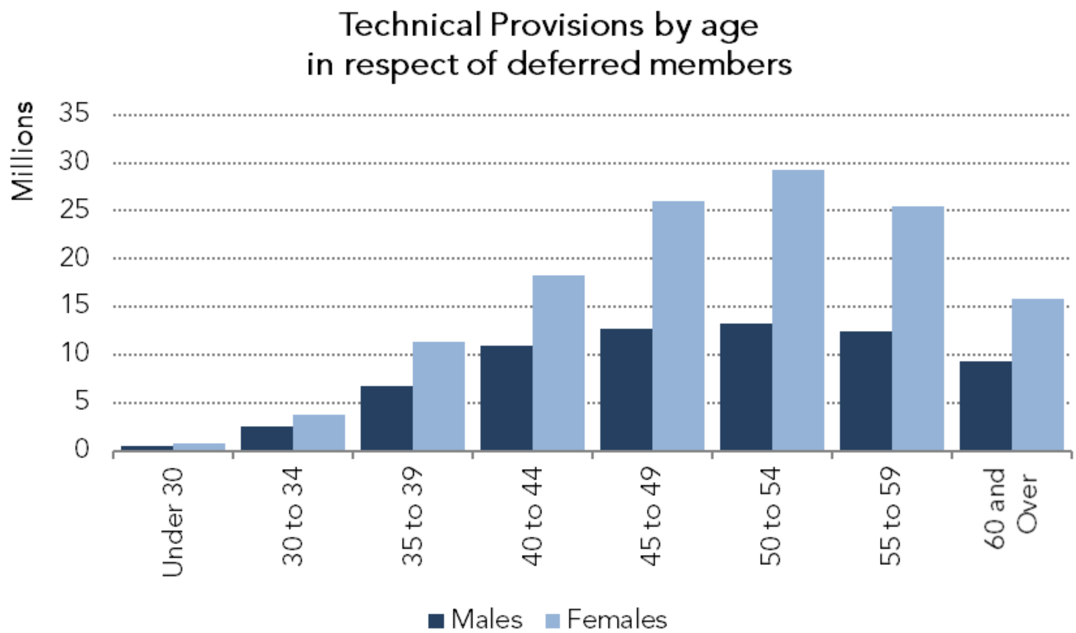
Deferred members	Males	Females	Total
Number of members	1,581 (1,329)	3,290 (2,704)	4,871 (4,033)
Total deferred pensions p.a. payable as at exit date	£3,841,336 (£3,298,194)	£7,199,029 (£6,311,271)	£11,040,365 (£9,609,465)
Average deferred pension p.a. payable as at exit date	2,430 (£2,482)	2,188 (£2,334)	2,267 (£2,383)
Average age (unweighted)	45.2 (44.5)	46.5 (46.5)	46.1 (45.8)
Discounted mean term to retirement (years)	12.6	11.2	11.7

Notes

1. The number of members has been reconciled and agreed with the Pensions Office but may not accord with the audited Scheme accounts due to timing differences in the data extraction.
2. The figures for the previous actuarial valuation are shown in brackets where available.
3. Included in these statistics are 58 deferred pensioners who have not yet retired, but who have passed age 65.
4. The following graphs illustrate the current statistics in greater detail.
5. The discounted Mean Term to Retirement is the average term to the assumed retirement date weighted by members' Technical Provisions.
6. In addition, there are 361 short service Pending Members who are due either a Refund of Contributions or Cash Transfer Amount which we have valued accordingly.




Average pension at valuation date
for deferred members
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females


Technical Provisions by age
in respect of deferred members
Millions
35
30
25
20
15
10
5
0
Under 30
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 and Over
Males
Females

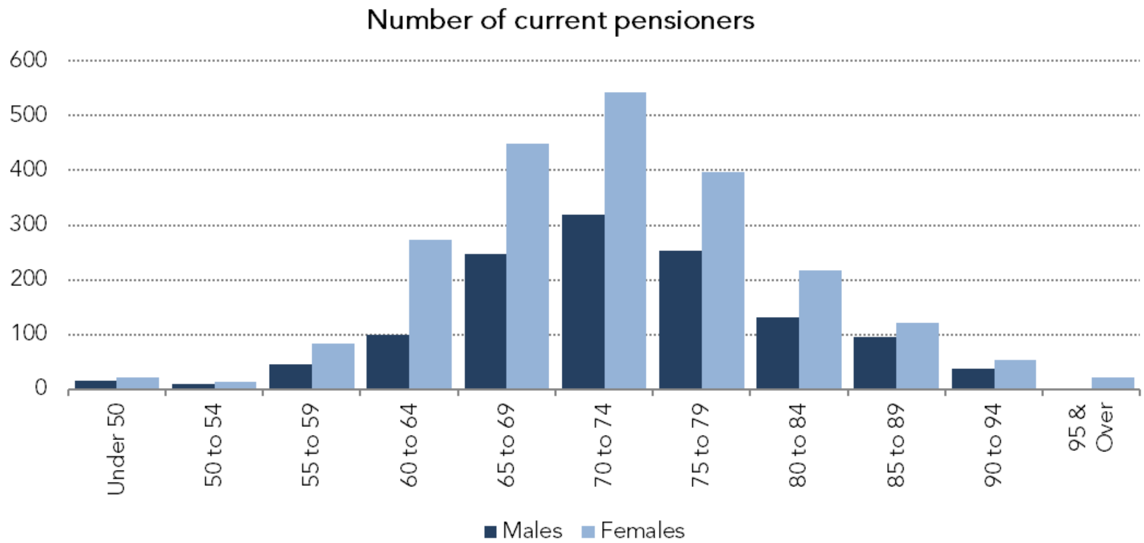
Pensioners	Males	Females	Total
Number of members	1,259 (1,199)	2,194 (1,987)	3,453 (3,186)
Total pensions p.a. payable as at valuation date	£10,340,892 (£9,437,111)	£11,707,960 (£10,026,926)	£22,048,852 (£19,464,037)
Average pension p.a. payable as at valuation date	£8,214 (£7,871)	£5,336 (£5,046)	£6,385 (£6,109)
Average age (unweighted)	73.4 (72.4)	72.7 (71.9)	72.9 (72.1)

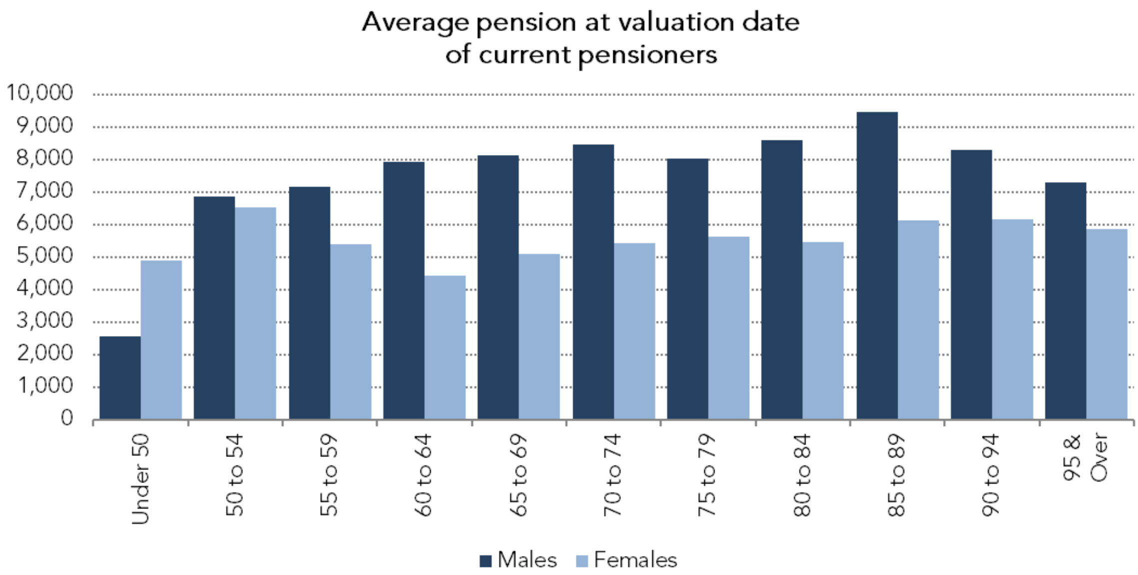
Notes
1. The number of pensioners has been reconciled and agreed with the Pensions Office but may not accord with the audited Scheme accounts due to timing differences in the data extraction.

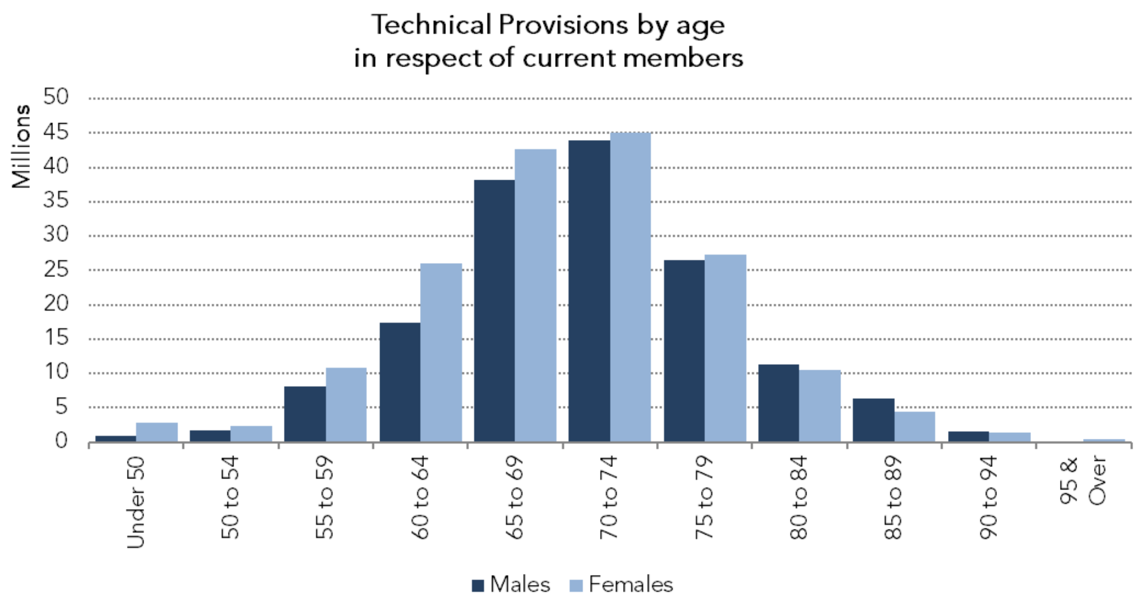
2. The figures for the previous actuarial valuation are shown in brackets where available.

3. There are 460 dependant pensioners included in the above statistics and 13 children sharing dependants' pensions.

4. The following graphs illustrate the current statistics in greater detail.




Average pension at valuation date
of current pensioners
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Under 50
50 to 54
55 to 59
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85 to 89
90 to 94
95 & Over
Males
Females

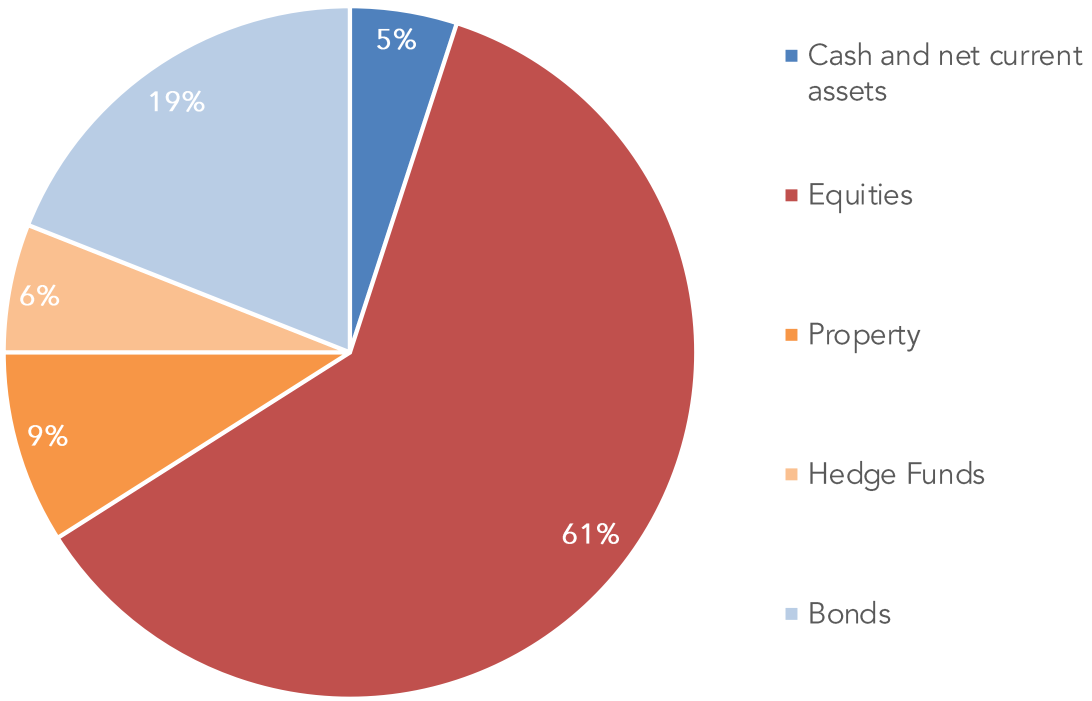

Technical Provisions by age
in respect of current members
Millions
50
45
40
35
30
25
20
15
10
5
0
Under 50
50 to 54
55 to 59
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85 to 89
90 to 94
95 & Over
Males
Females

Appendix B – Scheme Assets

The Scheme's audited accounts show that the Scheme held the following assets as at 31 July 2021, excluding money purchase AVCs and the value of the insured pensions:

	Market Value £
Pooled Investment Vehicles	774,524,718
Cash	40,419,107
Net Current Assets	(294,234)
Total	814,649,591

The chart below shows the breakdown of the assets by asset class.



Appendix C – Summary of Benefits and Member Contributions

Eligibility

The Scheme is open to existing members and future new entrants. The employees covered by the Scheme were contracted out of the State Second Pension (S2P) up to 31 December 2012. From 1 January 2013 the Scheme members were contracted back into S2P.

<u>For Scheme Service accrued prior to 1 January 2013 for members who joined the Scheme before 1 December 2009</u>

1.	Normal Pension Age (NPA)	The NPA for all members is 65, although all members may retire at any time after age 60 and receive an immediate unreduced pension.
2.	Pensionable Salary	Basic salary plus any allowances that have been determined to be pensionable by the Employer. It is the amount notified to the Trustee by the Employer which would have applied had the Member not been in the Salary Sacrifice Arrangement.
3.	Final Pensionable Salary	The greatest of: • Pensionable Salary for the last 12 months • Best indexed Pensionable Salary in the 12 month period starting 3 years before retirement, termination or death • Highest indexed average of 3 years Pensionable Salaries in the last 13 years preceding retirement, termination or death • Pensionable Salary in the 12 months ending 3 years before retirement, termination or death – no indexation • Pensionable Salary in the 12 months ending 4 years before retirement, termination or death – no indexation.

4.	Pensionable Service	Pensionable Service is composed of: • the number of years and days contributory membership of the Scheme with a Participating Employer; plus • the number of years and days service, if any, granted in respect of a transfer value paid to the Scheme; plus • the number of years and days service, if any, granted in respect of AVCs.
5.	Normal Retirement Pension	At NPA an annual pension of: 1/60th of Final Pensionable Salary for each year (and proportionately for days) of Pensionable Service.
6.	Early Retirement Pension in Normal Health	Members may retire after age 55 with the consent of the University and the Trustee. <u>All members retiring at or after age 60:</u> 1/60th of Final Pensionable Salary for each year (and proportionately for days) of Pensionable Service. <u>All members retiring between age 55 and 60:</u> 1/60th of Final Pensionable Salary for each year (and proportionately for days) of Pensionable Service, reduced by an actuarial factor depending on the period to age 60.
7.	Exchange of pension for cash	Part of the above pension may be exchanged for a tax free cash lump sum, subject to HM Revenue & Customs limits.
8.	Benefits on Death after Retirement	• The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum *plus* • A spouse's pension of two thirds of the member's pension at the date of death before any exchange of pension for cash *plus* • A funeral grant of £2,500, adjusted for any tax payable.
9.	Increases to Pensions in payment	The increase in the Retail Prices Index (RPI) in the year ending each May, applied at 1 August, subject to a maximum of 12% per annum. Any increase above 12% in any year would be at the discretion of the Managing Committee of the Scheme. If the RPI is below 3% in any year, an increase of more than RPI up to a maximum of 3% could be paid at the discretion of the Managing Committee.

For a Member who joined the Scheme on or after 1 December 2009 and a Former Member who rejoined the Scheme on or after that date, the benefit provisions are the same as the above benefits except where set out separately below:

1.	Normal Pension Age (NPA)	The NPA is 65.
2.	Normal Retirement Benefits	At NPA an annual pension of: **1/80th** of Final Pensionable Salary for each year (and proportionately for days) of Pensionable Service. plus **A cash lump sum of 3/80th of Final Pensionable Salary for each year (and proportionately for days) of Pensionable Service.**
3.	Early Retirement Benefits in Normal Health	Members may retire after age 55 with the consent of the University and the Trustee. The benefits provided to the Member are a pension of **1/80th** of Final Pensionable Salary **plus a lump sum of 3/80ths of Final Pensionable Salary** for each year (and proportionately for days) of Pensionable Service, in both cases reduced by an actuarial factor depending on the period to age 65.
4.	Benefits on Death after Retirement	• The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum plus • A spouse's pension of **one half** of the member's pension at the date of death before any exchange of pension for cash plus • A funeral grant of £2,500, adjusted for any tax payable.

For Scheme Service accrued on and after 1 January 2013

With effect from 1 January 2013 a new benefit structure has applied to both existing members and those joining the Scheme on or after that date. The Scheme now has 3 different groups of members:

- UNI 1 - Members who joined before 1 December 2009
- UNI 2 - Members who joined after 30 November 2009 and before 1 January 2013
- UNI 3 – Members who join on or after 1 January 2013

Benefits accruing on and after 1 January 2013 are a Career Average Revaluing Earnings pension. It is referred to in the Rules as "CRB Pension".

UNI 1

1.	Normal Pension Age (NPA)	The NPA is 65, but benefits can be drawn unreduced from age 63 onwards Members have the option to pay an additional contribution of 3½% of Pensionable Salary if they wish to draw benefits without reduction from age 60. These members are referred to as UNI4 members.
2.	Scheme Year	A period of 12 months ending on 31 July
3.	Annual CRB Pension	At NPA an annual pension received by Members whilst in the Pensionable Service in the relevant Scheme Year: **1/95th** of Pensionable Salary in relation to each Scheme Year ending on or before 31 July 2017 **1/95th** up to 1 January 2018 and **1/100th** between 1 January 2018 and 31 July 2018 of Pensionable Salary in relation to the Scheme Year ending 31 July 2018 **1/100th** of Pensionable Salary in relation to each Scheme Year ending on or after 31 July 2019. <u>plus</u> A cash lump sum of 3 times the Annual CRB Pensions for each Scheme Year.
4.	CRB Revaluation Percentage	The lesser of 5% per annum and the annual rate of the increase in the Retail Prices Index in the 12 months to the previous May in respect of the relevant Scheme Year
5.	CRB Pension Increase in payment	The lesser of 5% per annum and the annual rate of the increase in the Retail Prices Index in the 12 months to the previous May.
6.	Early Retirement Benefits in Normal Health	Members may retire after age 55 with the consent of the University and the Trustee. Actuarial reduction will apply.
7.	Benefits on Death after Retirement	• The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum plus • A spouse's pension of 75% of the member's pension at the date of death before any exchange of pension for cash

8.	Benefits on Death in Service	• A lump sum of 4 **times** annual salary at the date of death plus • A spouse's pension of **75%** of the member's CRB pensions that the member would have accrued to the Normal Pension Date. plus • A child's pension of 25% of the spouse's pension for each child, (up to a maximum of **two**) while below age 18 or, if later, receiving full time education to a maximum of age 23. The total of all the spouse's and children's pensions may not exceed the member's prospective pension.
9.	Benefits on Termination of Service	(i) If the member has completed less than 2 years of Qualifying Service, he/she will be entitled to a Short Service Benefit. (ii) If the member has completed 2 or more years Qualifying Service, he/she will be entitled to a CRB Pension accrued to the date of leaving. The benefits will revalue between termination and NRA in line with the CRB Revaluation Percentage.
10.	Member Contribution	5% of Pensionable Salary

UNI 2

1.	Normal Pension Age (NPA)	The NPA is **65**.
2.	Scheme Year	A period of 12 months ending on 31 July
3.	Annual CRB Pension	At NPA an annual pension received by Members whilst in the Pensionable Service in the relevant Scheme Year: **1/95th** of Pensionable Salary in relation to each Scheme Year ending on or before 31 July 2017 **1/95th** up to 1 January 2018 and **1/100th** between 1 January 2018 and 31 July 2018 of Pensionable Salary in relation to the Scheme Year ending 31 July 2018 **1/100th** of Pensionable Salary in relation to each Scheme Year ending on or after 31 July 2019. plus A cash lump sum of 3 times the Annual CRB Pensions for each Scheme Year.

4.	CRB Revaluation Percentage	The lesser of 5% per annum and the annual rate of the increase in the Retail Prices Index in the 12 months to the previous May in respect of the relevant Scheme Year
5.	CRB Pension Increase in payment	The lesser of 5% per annum and the annual rate of the increase in the Retail Prices Index in the 12 months to the previous May.
6.	Early Retirement Benefits in Normal Health	Members may retire after age 55 with the consent of the University and the Trustee. Actuarial reduction will apply.
7.	Benefits on Death after Retirement	• The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum plus • A spouse's pension of 50% of the member's pension at the date of death before any exchange of pension for cash
8.	Benefits on Death in Service	• A lump sum of 3 times annual salary at the date of death plus • A spouse's pension of 50% of the member's CRB pensions that the member would have accrued to the Normal Pension Date. plus • A child's pension of 25% of the spouse's pension for each child, (up to a maximum of two) while below age 18 or, if later, receiving full time education to a maximum of age 23. The total of all the spouse's and children's pensions may not exceed the member's prospective pension.
9.	Benefits on Termination of Service	(i) If the member has completed less than 2 years of Qualifying Service, he/she will be entitled to a Short Service Benefit. (ii) If the member has completed 2 or more years Qualifying Service, he/she will be entitled to a CRB Pension accrued to the date of leaving. The benefits will revalue between termination and NRA in line with the CRB Revaluation Percentage.
10.	Member Contribution	5% of Pensionable Salary

UNI 3

1.	Normal Pension Age (NPA)	The NPA is 65.
2.	Scheme Year	A period of 12 months ending on 31 July
3.	Annual CRB Pension	At NPA an annual pension received by Members whilst in the Pensionable Service in the relevant Scheme Year: 1/150th of Pensionable Salary in relation to each Scheme Year. plus A cash lump sum of 3 times the Annual CRB Pensions for each Scheme Year.
4.	CRB Revaluation Percentage	The lesser of 5% per annum and the annual rate of the increase in the **Consumer Prices Index** in the 12 months to the previous May in respect of the relevant Scheme Year
5.	CRB Pension Increase in payment	The lesser of 5% per annum and the annual rate of the increase in the **Consumer Prices Index** in the 12 months to the previous May.
6.	Early Retirement Benefits in Normal Health	Members may retire after age 55 with the consent of the University and the Trustee. Actuarial reduction will apply.
7.	Benefits on Death after Retirement	• The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum plus • A spouse's pension of 50% of the member's pension at the date of death before any exchange of pension for cash
8	Benefits on Death in Service	• A lump sum of 5 times annual salary at the date of death plus • A spouse's pension of 50% of the member's CRB pensions that the member would have accrued to the Normal Pension Date. plus • A child's pension of 25% of the spouse's pension for each child, (up to a maximum of two) while below age 18 or, if later, receiving full time education to a maximum of age 23. The total of all the spouse's and children's pensions may not exceed the member's prospective pension.

9.	Benefits on Termination of Service	(i) If the member has completed less than 2 years of Qualifying Service, he/she will be entitled to a Short Service Benefit. (ii) If the member has completed 2 or more years Qualifying Service, he/she will be entitled to a CRB Pension accrued to the date of leaving. The benefits will revalue between termination and NRA in line with the CRB Revaluation Percentage.
10.	Member Contribution	3% of Pensionable Salary

STATEMENT OF FUNDING PRINCIPLES

CAMBRIDGE UNIVERSITY ASSISTANTS' CONTRIBUTORY PENSION SCHEME

Status

This Statement has been prepared by C U Pension Trustee Limited ("the Trustee") acting as Trustee of the Scheme for the purposes of the actuarial valuation as at 31 July 2021 after taking advice from Robert Sweet of Cartwright Group Limited, the current Actuary to the Scheme.

It replaces an earlier version dated 30 April 2019 prepared for the actuarial valuation as at 31 July 2018.

Statutory Funding Objective

This statement sets out the Trustee's policy for securing that the statutory funding objective is met.

The statutory funding objective is defined in Section 222 of the Pensions Act 2004. Every scheme must have sufficient and appropriate assets to cover its technical provisions.

Technical provisions – method

The actuarial method used in the calculation of the technical provisions and future service costs is the Projected Unit Method.

Technical provisions – assumptions

The following sets out the principles behind setting the actuarial assumptions for the funding of the Scheme.

Discount Rate (also referred to as "interest rate")

Technical provisions are determined using a discount rate based on the RPI yield curve (derived as below) plus a margin.

The Trustee has determined that for the purposes of the actuarial valuation as at 31 July 2021 the margin to be used is 1.9% per annum.

Pension increases in deferment

For all pension earned prior to 2013, the Trustee's main revaluation assumption is set to be the same as the assumption for future increases in the Retail Prices Index (RPI).

The Retail Prices Index (RPI) assumption will be determined at the valuation date based on the Bank of England Implied Inflation yield curve. This rate will then be adjusted by an allowance for the Inflation Risk Premium, which for the purposes of the 2021 valuation the Trustee has determined should be:

- 0.2% per annum to 2030;

- 1.2% in 2031; and then
- Reducing by 0.1% per annum back to 0.2% per annum in 2041 and thereafter.

There is also a revaluation underpin based on statutory revaluation. Statutory revaluation on the pension in excess of any GMP is in line with increases in the Consumer Prices Index (CPI). The Trustee has agreed that this assumption should be equal to the assumption for future RPI increases less:

- 1.0%% per annum to 2030;
- 0.1% per annum from 2031 onwards.

For pension earned on or after 1 January 2013, increases to pensions accrued in service and after leaving service are to be calculated by reference to the RPI (or CPI for joiners on or after 1 January 2013) capped at a maximum of 5% per annum compound.

Salary Increases

Pay increases are expected to exceed CPI increases by 1.5% per annum compound in the long term but an allowance has been made for pay increases of 4.5% in 2021/2022. This relationship with CPI is monitored for accuracy and may be subject to change in future valuations.

Pension increases in payment

Pension increases in payment are defined in the Rules and are based on annual increases in the RPI and CPI, subject to certain maxima.

The assumptions for future pension increases are set equal to the assumptions for RPI and CPI noted above, subject to these maxima.

Mortality

It is the intention of the Trustee to use both mortality tables that reflect as much as possible, actual Scheme experience with a suitable allowance for likely mortality improvements over the medium to long term.

Currently, the Trustee is using S3 base tables produced by the Continuous Mortality Investigation Bureau based upon mortality experience of Self-Administered Pension Schemes centred on 2013 but then projected to allow for subsequent improvements in longevity.

After carrying out a mortality investigation on Scheme experience on data between 1 August 2013 and 31 July 2020 the Actuary recommended and the Trustee agreed to adjust the S3PXA base tables for males and females by 115% and 100% respectively and adopt these for the 2021 valuation.

In addition, the Actuary recommended and the Trustee agreed to make allowance for future longevity improvements using the CMI 2020 projection table, with long term rates of improvement of 1.25% per annum, standard smoothing factors, and a rate of initial additional improvement of 0.25% per annum.

These tables and adjustments are subject to regular review and will be updated in future valuations as more up-to-date data becomes available.

New Entrants

The Scheme is open to new entrants. The Trustee does not allow explicitly for new entrants. However, by adopting the Projected Unit Method, to give a stable normal contribution rate, they are implicitly assuming that the active membership average age remains relatively constant – i.e. that new entrants will continue to join the Scheme.

Commutation

On retirement, it is assumed that 75% of members take maximum cash at retirement based on current commutation factors.

Leaving Service

The Scheme is relatively large; as it is prudent to assume that no-one leaves early, the Trustee therefore makes no allowance for early leavers. Any members leaving early are likely to release a surplus from the Scheme; this will be used to reduce future contribution rates when appropriate.

Retirement

The Scheme Normal Retirement Age is 65 although members who joined prior to 1 December 2009 have the right to retire without actuarial reduction at age 60. The Trustee wishes to fund benefits to the average expected age of retirement of such members.

Investigations of the pattern of retirements between 1 August 2013 and 31 July 2020 (investigated in 2021) suggest that, on average, Active males currently retire at age 64 and females retire at age 63, whilst Deferred males retire at 62 and females retire at age 61. These average retirement ages will be reviewed by the actuary at each subsequent triennial valuation to ensure that they remain in line with actual Scheme experience.

Members who joined on or after 1 December 2009 are assumed to retire at age 65.

Age Difference of Dependants

Male members are assumed to be 3 years' older than their wives. Female members are assumed to be 1 year younger than their husbands.

Percentage with Dependant's Benefits

80% of Male members and 70% of Female members are assumed to be married at age 65.

Expenses

Expenses of administering the Scheme are borne by the Scheme. Part of the expenses relates to past service and part relates to current and future service.

The Trustee's policy is for the actuary to review the allowance for expenses at each valuation and make a recommendation for both elements.

The current assumption is for a past service reserve of 1% of the Technical Provisions and a future allowance of 0.9% of Pensionable Salaries. This is to cover all expenses and levies of administering the Scheme.

Policy on discretionary increases and funding strategy

In the past when RPI has been less than 3% per annum the Trustee has reviewed the pension increase to be paid and has increased it, on occasion, at up to 3% per annum. The current policy is not to fund for increases in excess of RPI, but to review the cost in such years when this situation occurs and decide on whether the Scheme and/or the Employers can afford the additional increase.

Period within which and manner in which a failure to meet the Statutory Funding Objective is to be rectified

The Trustee and the Principal Employer have agreed that any funding shortfalls identified at an actuarial valuation should be eliminated as quickly as the Employers can reasonably afford by the payment of additional contributions. In determining the actual recovery period at any particular valuation the Trustee's principles are to take into account the following factors:

- the size of the funding shortfall;
- the business plans of the University and the other Employers;
- the Trustee's assessment of the financial covenant of the University and the other Employers (and in making this assessment the Trustee will make use of appropriate credit assessment providers); and
- any contingent security offered by the University and the other Employers.

The assumptions to be used in calculating the additional contributions required will be those set out above for calculation of the Technical Provisions, except that the expected rate of return (the return on existing assets and on new contributions during the period of the Recovery Plan) may be set at a higher rate than the discount rate.

Arrangement by a person other than an Employer or a Scheme member to contribute to the Scheme

There are no arrangements for a person other than an Employer or a Scheme member to contribute to the Scheme.

Policy on reduction of cash equivalent transfer values (CETVs)

The Trustee asks the Scheme Actuary to advise at each valuation of the extent to which assets are sufficient to provide CETVs for all non pensioners without adversely affecting the security of the benefits of other members and beneficiaries.

If at any time, after obtaining advice from the Scheme Actuary, the Trustee is of the opinion that the payment of CETVs at a previously agreed level may adversely affect the security of the benefits of other members and beneficiaries, the Trustee will commission a report from the Scheme Actuary to decide whether, and to what extent, CETVs should be reduced.

Payments to the Employers

If the Scheme is not being wound up and the assets of the Scheme exceed the estimate by the Scheme Actuary of the cost of buying out the benefits of all beneficiaries from an insurance company, including the expenses of doing so, the Employers may receive a payment of the excess. If the Scheme Actuary certifies that the requirements of the Pensions Act 2004 have been met and certifies the maximum amount that may be paid, the Trustee will consider whether a payment would be in the interest of the members, and if so, the Trustee will give notice to the members of the proposal.

Frequency of Valuations and circumstances for extra Valuations

The Scheme's most recent actuarial valuation under Part 3 of the Pensions Act 2004 was carried out as at the effective date of 31 July 2021 and subsequent valuations will in normal circumstances be carried out every three years thereafter. An actuarial report on developments affecting the Scheme's funding level will be obtained as at each intermediate anniversary of that date.

The Trustee may call for a full actuarial valuation instead of an actuarial report when, after considering the Scheme Actuary's advice, they are of the opinion that events have made it unsafe to continue to rely on the results of the previous valuation as the basis for future contributions. However, the Trustee will consult with the Principal Employer before doing so.

For and on behalf of the University of Cambridge ("the Principal Employer")

Signed: D Hughes

Name: D Hughes

Position: Director of Finance

Date: 31 October 2022

On behalf of C U Pension Trustee Limited ("the Trustee")

Signed:

Name: H R Jacobs

Position: Director

Date: 31 October 2022

This Statement of Funding Principles has been agreed by the Trustee after obtaining my actuarial advice.

Signed: Robert. J. Sweet

Name: R J SWEET

Position: Scheme Actuary

Date: 31 October 2022

Appendix E – Assumptions

The 2021 Funding Basis is based on Statutory Funding Objective and the Statement of Funding Principles adopted by the Trustee. The 2018 Funding Basis sets out the assumptions used in the previous valuation for comparison purposes.

Under the Code, when choosing the assumptions the Trustee is required to consider the factors particular to the Employers, or the Employers' industry, affecting matters such as pay increases, rate of withdrawal from membership and recruitment. The Trustee is satisfied that the chosen assumptions set out below are appropriate bearing in mind the above factors.

	2021 Funding Basis	2018 Funding Basis
Economic* (% p.a. compound)		
Discount rate – Past Service	RPI +1.9%	5.15%
Discount rate – Future Service	RPI +1.9%	5.85%
Rate of Salary increases	4.5% for 2021/2022 and then CPI +1.5% thereafter	4.25%
Rates of increase to pensions in payment: • RPI max 12%, min 0% • RPI max 5%, min 0% • RPI max 5%, min 3% • CPI max 5%, min 0%	} based on } yield curve rates } with appropriate } caps and collars	 3.25% 3.15% 3.65% 2.25%
Rates of increases to pensions in deferment: • GMP	CPI +1.5%	4.25%
• Pensions in excess of GMP: – RPI	BoE Yield Curve – 0.2% to 2030; In 2031 increasing to 1.2% then reducing by 0.1% per annum to 2041 when it remains at 0.2%	3.25%
– CPI	RPI -1.0% to 2030; and RPI -0.1% from 2031	2.25%
Assets & Expenses		
Valuation of assets:	Surrender value of the assets	Surrender value of the assets
Expenses: • Past service	1.0% of the liability excluding expenses	1.0% of the liability excluding expenses
• Future service	0.9% of Pensionable Salary	0.9% of Pensionable Salary
Death in Service Premiums:	n/a	n/a
Pension Protection Fund levies:	Included in the future service cost expenses	Included in the future service cost expenses
Demographic		

	2021 Funding Basis	2018 Funding Basis
Base Table	115% of S3PMA pension mortality tables for males and 100% of S3PFA pension mortality tables for females.	121% of S2NMA for males, and 90% of S2NFA for females
Future Projected Improvements	CMI_2020	CMI_2017
Long Term rates of improvement	1.25% p.a.	1.25% p.a.
Additional initial rate of improvement	0.25% p.a.	N/A
Smoothing factor	7.0	7.5
Assumed Retirement Age (ARD): For service accrued to 31 December 2012 UNI1 & UNI4:		
• Active Members	Males 64 Females 63	Males 63 Females 62
• Deferred Members	Males 62 Females 61	Males 61 Females 61
UNI2 & UNI3	Males 65 Females 65	Males 65 Females 65
UNI5 – ex Strangeway members	Males 60 Females 60	Males 60 Females 60
For service accrued from 1 January 2013 UNI1:		
• Active Members	Males 64 Females 63	Males 63 Females 63
• Deferred Members	Males 62 Females 61	Males 63 Females 63
UNI2 & UNI3	Males 65 Females 65	Males 65 Females 65
UNI4		
• Active Members	Males 64 Females 63	Males 63 Females 63
• Deferred Members	Males 62 Females 61	Males 63 Females 63
Proportion married	80% Male at age 65; 70% Female at age 65;	85%

	2021 Funding Basis	2018 Funding Basis
	Adjusted by probability of survival of spouse	
Age difference	Male members assumed to be 3 years older than their female spouse. Female members assumed to be 1 year younger than their male spouse.	Women 3 years younger than their partners
Withdrawal rates	No allowance	No allowance
Member options	75% of members take maximum cash at retirement based on current commutation factors	No allowance

* Based on actual market conditions on 31 July 2021, where RPI is based on the whole of the Bank of England yield curve with the same rate assumed from term 40 onwards.

Appendix F – Actuary's Certification of the Calculation of Technical Provisions

Name of Scheme: Cambridge University Assistants' Contributory Pension Scheme

Calculation of Technical Provisions

I certify that, in my opinion, the calculation of the Scheme's technical provisions as at 31 July 2021 is made in accordance with regulations under section 222 of the Pensions Act 2004. The calculation uses a method and assumptions determined by the Trustees of the Scheme and set out in the Statement of Funding Principles dated 31 October 2022.

Signed:		Date:	31 October 2022
Name:	R J Sweet	Qualification	Fellow of the Institute and Faculty of Actuaries
Address:	Mill Pool House Mill Lane Godalming Surrey GU7 1EY	Employer:	Cartwright Group Limited

Appendix G – Glossary

Actuarial Report

Introduced by the Pensions Act 2004, this is a written report, prepared and signed by the Scheme Actuary, on developments affecting the Scheme's Technical Provisions since the last actuarial valuation. It must also include an assessment of changes in the value of the Scheme's assets.

Actuarial Valuation

Defined by the Pensions Act 2004 as a written report, prepared and signed by the Scheme Actuary, valuing the Scheme's assets and calculating its Technical Provisions.

Code of Practice 3 – Funding Defined Benefit Schemes

This is a written document dated July 2014 setting out the Pension Regulator's guidance and standards of conduct for Trustees with regard to funding their defined benefit pension scheme.

Recovery Plan

Where a scheme has a deficit on the Statutory Funding Objective a Recovery Plan is needed to remove the deficit. The Scheme should detail the period and means by which the deficit will be eliminated.

Schedule of Contributions

This is a written document detailing the contributions payable to the Scheme from the date of the Schedule for a period of 5 years or such longer period as the Recovery Plan applies. The contributions on the Schedule must be sufficient to ensure the Scheme's assets cover the Technical Provisions by the end of the period it covers.

Statement of Funding Principles

This is a document produced by the Trustee and agreed by the Employer. It sets out details of the method and assumptions to use to meet the Statutory Funding Objective as well as any other objectives the Trustee has and details of the Recovery Plan.

Statutory Funding Objective

Introduced by the Pensions Act 2004, this is the funding target the Scheme must meet. The assumptions chosen to calculate the target must be chosen in a prudent manner and reflect market conditions.

Technical Provisions

This is the name given to the Scheme's liabilities calculated using the method and assumptions set out in the Statement of Funding Principles. The Trustee and Employer should aim to fund 100% of the Scheme's Technical Provisions.