CARTWRIGHT

CAMBRIDGE COLLEGES' FEDERATED PENSION SCHEME

Actuarial Valuation as at 31 March 2017

Scheme Funding Report

Prepared for the Management Committee acting as the Trustee of the Cambridge Colleges' Federated Pension Scheme

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1. EXECUTIVE SUMMARY

1.1 Introduction

This report sets out the results of the actuarial valuation of the Cambridge Colleges' Federated Pension Scheme ("the Scheme") as at 31 March 2017.

1.2 Prudence and Covenant

At this valuation the Trustee rated the Colleges' Covenants as Strong and this is reflected in the level of prudence factored into the assumptions used. The Trustee undertook investigations and correspondence with the College Bursars to inform its view of the current strength of the Colleges' Covenants.

1.3 Current funding Level

The Scheme's funding level on the Statutory Funding Objective at the valuation date was 87%, equivalent to a deficit of £31,132,000. At the previous valuation the ongoing funding level was 82%.

The main reasons for the changes are excellent investment returns, deficit reduction contributions paid by the Colleges and experience gains, offset by changes in the valuation basis. The latter is principally due to the adoption of lower assumptions for investment return and higher assumptions for price inflation.

1.4 Future service cost

The average ongoing joint (College plus members) future contribution rate for future service benefits, ignoring the past service position, is 30.73% of Contribution Pay. This rate includes member contributions and an allowance for current premiums for death in service costs. It excludes allowances for expenses and for the premiums for group income protection, which will be paid in addition by the Colleges.

This compares with the current average contribution rate at which joint contributions are being paid of 25.22% of Contribution Pay, before the adjustment for the previous deficit. The main reasons for the increase are changes in the valuation assumptions and an increase in the average age of the active membership.

1.5 Deficit funding contribution

All College Sections (with one exception) have a funding deficit. The Management Committee have agreed with each College the term over which the deficit should be repaid. In each case a fixed monetary amount is payable. The details of the agreements are set out in Appendix F.

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 44%.

If the Scheme was fully funded on the Statutory Funding Objective the solvency funding level would be 51%.

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 60%.

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

1.8 CETVs

The Management Committee have considered whether Cash Equivalent Transfer Values (CETVs) should be reduced to reflect the degree of underfunding in the Scheme. They have decided to continue to pay CETVs in full, taking into consideration the Colleges' covenants.

I have recommended that the Management Committee review their CETV basis and I will carry out this review in due course.

1.9 Factors

The Scheme's commutation factors and other administrative factors should be reviewed following 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 March 2020. For those College Sections with more than 100 members, interim actuarial reports will be required as at 31 March 2018 and 31 March 2019.

For each College Section with a Recovery Plan, a summary of this valuation report plus copies of the Recovery Plan and Schedule of Contributions needs to be sent to TPR within 10 working days of this report being signed.

A Summary Funding Statement should be sent to all Members to inform them of the outcome of this valuation.

2. INTRODUCTION

2.1 Background

This report on the actuarial valuation of the Cambridge Colleges' Federated Pension Scheme ("the Scheme") as at 31 March 2017, was commissioned by and is addressed to the Management Committee, acting as the Trustee of the Scheme. It has been prepared under Clause 18.2 of the Trust Deed & Rules dated 9 March 2004 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. Actuarial reports in intervening years are required for College Sections with more than 100 members.

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 March 2014 and the results were contained in my report dated 3 June 2015.

2.4 Inter-valuation review

The previous valuation recommended joint (College plus members) contributions to the Scheme at an average rate of 25.22% of members' Contribution Pay inclusive of allowance for member contributions and death-in-service insurance premiums. Allowances for expenses and the premiums required for Group Income Protection (GIP) benefit were payable separately in addition to these amounts. Recovery Plans were agreed individually between the Trustee and each College for whom the valuation showed a shortfall.

The Scheme auditors have confirmed that College contributions have been paid in line with the agreed rates. Member contributions have been paid in accordance with the Rules of the Scheme.

2.5 References for earlier advice on this valuation

An earlier discussion document, the Memorandum on the actuarial valuation dated 26 September 2016, set out my initial advice to the Trustee regarding the commencement of the valuation process. It included drawing the Trustee's attention to the Pension Regulator's Code of Practice 3 dated July 2014 ("the Code") and the different funding methods that are available to them and how they may choose a set of assumptions. It also included detail of the 9 Principles set out in the Code including the Management of Risk and Working Collaboratively with the Colleges to reach a funding solution that strikes the right balance between the needs of the Scheme and those of the Colleges.

I have not provided any advice to the Management Committee on College matters. In particular in recommending assumptions to the Management Committee I provided no advice on factors affecting the Colleges or its Industry which may affect such factors as pay increases or rates of withdrawal of Scheme membership. In addition, in calculating the contribution rates in accordance with the Statement of Funding Principles, I have not provided any advice on other related Colleges' matters such as business plans, expenditure commitments or Industry reports.

Initial results of the funding valuation were addressed to the Management Committee and made available to the Colleges and were set out in my Summary of Initial Results report dated 6 October 2017.

The above advice was reviewed by the Management Committee, and following discussion with the Colleges, 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 Colleges' 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 Colleges 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.

There are 25 Participating Colleges in the Scheme, each with their own segregated Section. Of the 25 College Sections, currently:

- 5 of the College Sections remain open to new entrants;
- 16 College Sections are closed to new entrants; and
- 4 Sections are closed for all accrual. Churchill College closed on 31 March 2007, and the last active members left service at Lucy Cavendish in May 2012, at King's College in August 2015 and at Hughes Hall in September 2016.

3.2 Core benefits under Rules

We have valued the Scheme benefits set out in the Definitive Trust Deed and Rules of the Scheme dated 9 March 2004 together with subsequent Deeds of Amendment. We have been provided with a conformed copy of the Trust Deed & Rules incorporating Deeds of Amendment dated 31 March 2004, 2 December 2009, 29 January 2010, 2 December 2013, 19 June 2015, 31 March 2016, 29 September 2016 and 28 February 2017. The March 2016 amendment includes the changes set out in 3.7 below. References to Contribution Pay 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 that summary and the Rules, the Rules will prevail.

Members may pay Additional Voluntary Contributions (AVCs) to purchase added years' service and increase benefits payable from the Scheme. Liabilities and assets shown in this report include those derived from AVCs.

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 maintains insurance policies to cover the liability for the lump sum and spouse's pension benefits provided on death in service. We have allowed for the premiums payable under these policies within the contribution rates recommended. The allowance is based on the current premium rates shown on the existing Schedules of Contributions.

Pensions in payment are not insured, being wholly paid by the Scheme.

3.5 Allowance for member options

Allowance has been made for Members commuting some of their pension for cash at retirement, and for an assumed pattern of early retirements.

3.6 Allowance for GMP equalisation

The Government has recently consulted the pensions industry on a proposed methodology for the equalisation of Guaranteed Minimum Pensions (GMPs) between men and women. Although this methodology is more practical than its previous proposal, it is still complex, and it would require changes to primary legislation before it could be implemented.

For now we have ignored the impact this may have on members' benefits and hence Scheme funding, but we will revisit this once the position on the Government's methodology is finalised.

3.7 Scheme changes since previous valuation

The following changes were made to Scheme benefits in April 2016. They only impact on benefits earned on or after 1 April 2016; benefits earned before that date are entirely unchanged:

- All College Sections are now contracted-in to the State Pension arrangements.
- For Members in a College Section which was contracted-in prior to 1 April 2016, there is no longer a deduction from benefits at retirement equivalent to the notional Second State Pension (SSP).
- For Members in a College Section which immediately prior to 1 April 2016 calculated Contribution Pay for both benefits and member contributions using an offset based on Basic State Pension (BSP), this offset is now based on the new Single Tier Pension (STP).
- Increases to pensions in payment are in line with increases in the Consumer Prices Index (CPI) capped at a maximum increase each year of 2.5%.
- 2 Colleges closed to new entrants – St John's (31 December 2016) and Girton (1 March 2015).
- 2 Colleges closed for all accrual when their last active members left service – King's and Hughes Hall.

In addition, the rate of Member contributions has been varied for several College Sections.

3.8 Legislative changes since previous valuation

Contracting-out of the State Second Pension was abolished in April 2016 when a new Single Tier State Pension was introduced. As a result, the Colleges and Members of those Sections of the Scheme which were previously contracted-out of the State Second Pension reverted to paying National Insurance Contributions at the full contracted-in rates.

3.9 Membership data

The data for the valuation was provided by the Pensions Administration Office on behalf of the Management Committee. 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 787 active members, 815 deferred pensioners, 1,341 pensioners and 12 pending members.

A more detailed summary is provided in Appendix A of this report.

We carried out the following data checks:

- Full reconciliation of membership numbers with the previous valuation and with the Pensions Administration Office;
- Comparison and reconciliation with previous valuation data and accounting data;
- Missing data and full consistency checks on an item by item basis.

All queries were resolved quickly and satisfactorily. We would like to thank the Pensions Administration Office for their very helpful assistance.

The membership statistics we have in our data extract will differ from those set out in the final Scheme accounts due to both timing differences and the fact that the membership numbers in the accounts exclude pensioners where the member has commuted all of their pension but there remains a contingent liability for a spouse's pension. We include these in our statistics. Once this is taken into consideration, the total membership number is exactly the same as in the accounts.

3.10 Asset data

The audited Scheme accounts show that the market value of the Scheme's assets at 31 March 2017 amounted to £212,014,868. This includes assets in relation to members' AVCs, which relate to added years' service credits. Appendix B provides a more detailed breakdown of the Scheme's assets.

3.11 College matters

We have not provided any advice to the Management Committee in connection with the Colleges.

3.12 Material post valuation date events

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

We have noted that it is the intention of the Management Committee to approximately insure death in service spouses' pensions at the next insurance renewal date. This may lead to an over or under provision of benefits on the death of an active member.

4. FUNDING PRINCIPLES

4.1 Statutory funding objective

The Statutory Funding Objective is set out in the Statement of Funding Principles dated 28 June 2018 included as Appendix D to this report.

Under Rule 3.10 of the Scheme's Trust Deed & Rules dated 9 March 2004, the rate at which each College makes contributions to the Scheme is determined by the Management Committee, after taking actuarial advice and after consulting the College. In accordance with the Pensions Act 2004, the Management Committee has sole responsibility for preparing the Statement of Funding Principles.

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 Provision, it would only be 51% 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 agreed funding objectives are as follows:

- to assume that the Scheme will invest in a range of assets and credit should be taken for the assumed long term out-performance of these assets relative to 18 year duration gilts equivalent to 1.9% per annum.
- 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 for each College Section.
- to eliminate any deficit relative to the funding target by increases in the rate of contributions over a period which does not exceed 20 years from the valuation date.

4.4 Changes to funding objectives

No changes have been made to the funding objectives since the previous valuation.

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

Different funding methods were adopted for different College Sections, depending on College status and College choice in some cases. The methods adopted were:

- Projected Unit Method (PUM)
- Attained Age Method (AAM)
- Defined Accrued Benefit Method (DABM)

These methods differ in how the future service contribution rate is determined.

5.2 Future Service Contribution Rate

Projected Unit Method (PUM)

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 Contribution Pay, to give the future service contribution rate.

Attained Age Method (AAM)

Under this method, a capital value is placed on the benefits which will accrue to the present active members after the valuation date, based on their service after that date and Pensionable Salaries projected to the date of their retirement, leaving service or death. A capital value is also placed on the total projected Contribution Pay for the members throughout their expected future membership, and the ratio of these two values then gives the future service contribution rate, expressed as a percentage of Contribution Pay.

Defined Accrued Benefit Method (DABM)

This method is used only for a Section which is closed to all accrual, so that no calculation of a future service contribution rate is required.

5.3 Allowance for new entrants

Projected Unit Method

The PUM 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 Section concerned. If the Section is closed to new entrants, the future service contribution rate will therefore be expected to rise in the future as the active membership ages.

Colleges that are closed to new entrants, but who have chosen to fund their Section on this basis, are aware of this issue.

Attained Age Method

Under the AAM, no allowance is made for new entrants; the contribution rate is determined solely on the basis of current members. This method therefore anticipates the aging effect for a closed Section, where the active membership is expected to age between actuarial valuations.

Defined Accrued Benefit Method

Under the DABM no allowance is made for new entrants as the Section has closed to future benefit accrual. As there is no future benefit accrual there is no need to calculate a future service contribution rate.

5.4 Previous funding method

For both this valuation and the previous valuation, the Management Committee decided to give those Colleges whose Section is closed to new entrants the choice of adopting either the AAM or the PUM, after considering the possible impact on future contribution rates.

The following College Sections are closed to new entrants and the table indicates the method chosen for the 2017 valuation and any change from 2014.

College	2017 Method	2014 Method
Christ's	AAM	PUM
Murray Edwards	PUM	PUM
Corpus Christi	PUM	PUM
Robinson	AAM	PUM
St. Catharine's	PUM	PUM
St John's	PUM	PUM
Trinity Hall	PUM	PUM
Wolfson	PUM	PUM

Other Colleges with Sections closed to new entrants have adopted the AAM method, whilst those College Sections which remain open to new entrants have continued to use the PUM.

5.5 Factors to consider in choosing funding method

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

- the ability and willingness of the Colleges 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 Management Committee in connection with these factors. The Management Committee will need to satisfy themselves 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. Any deficiency is expressed as an increase in the contribution rate payable for a stated period.

5.6 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 Management Committee has considered each assumption individually. They have not adjusted any assumption as a proxy to compensate for shortfalls in another assumption.

5.7 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.

5.8 Recovery Plan

The Statement of Funding Principles describes a Recovery Plan for removing any funding deficit. The Recovery Plan for each College requires the deficit to be removed by fixed additional annual contributions payable over a College specific number of years.

Under the Code the Trustee should aim for any shortfall to be eliminated as quickly as the Colleges can reasonably afford. What is possible and reasonable, however, will depend on the Management Committee's assessment of the Colleges' covenant.

When considering the structure of the Recovery Plan and the contribution required, the Trustee should take into account the following matters:

- the Colleges' business plans and the likely effect any potential recovery plan would have on the future viability of the Colleges;
- the Scheme's membership profile. A longer recovery period may be more appropriate in a scheme where most members have many years to go before retirement than in one where the vast majority are already receiving pensions.
- the ability of the Management Committee to pursue a College to make good a deficiency in the event of a scheme wind-up.
- the Colleges' expenditure commitments.
- the value of any contingent security provided by the Colleges bearing in mind both the term and enforceability.

- whether there are any impending member movements which would have a potentially significant effect on funding, such as major retirements or bulk transfer (in or out);
- the anticipated level of the risk-based element of the Pension Protection Fund levy, year on year, over the course of the recovery period and how this is met by the Colleges;

We have not provided any advice to the Management Committee in connection with the above factors. The Management Committee has satisfied themselves of these factors in determining the appropriate period over which the deficit should be paid.

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 March 2017:		
• Active Members		90,090
• Deferred Pensioners		51,391
• Current Pensioners		101,666
Technical Provisions	(A)	243,147
Market Value of Scheme Assets	(B)	212,015
Past Service Surplus/(Deficit)	(B-A)	(31,132)
Level of Funding of Past Service Benefits	(B/A)	87%

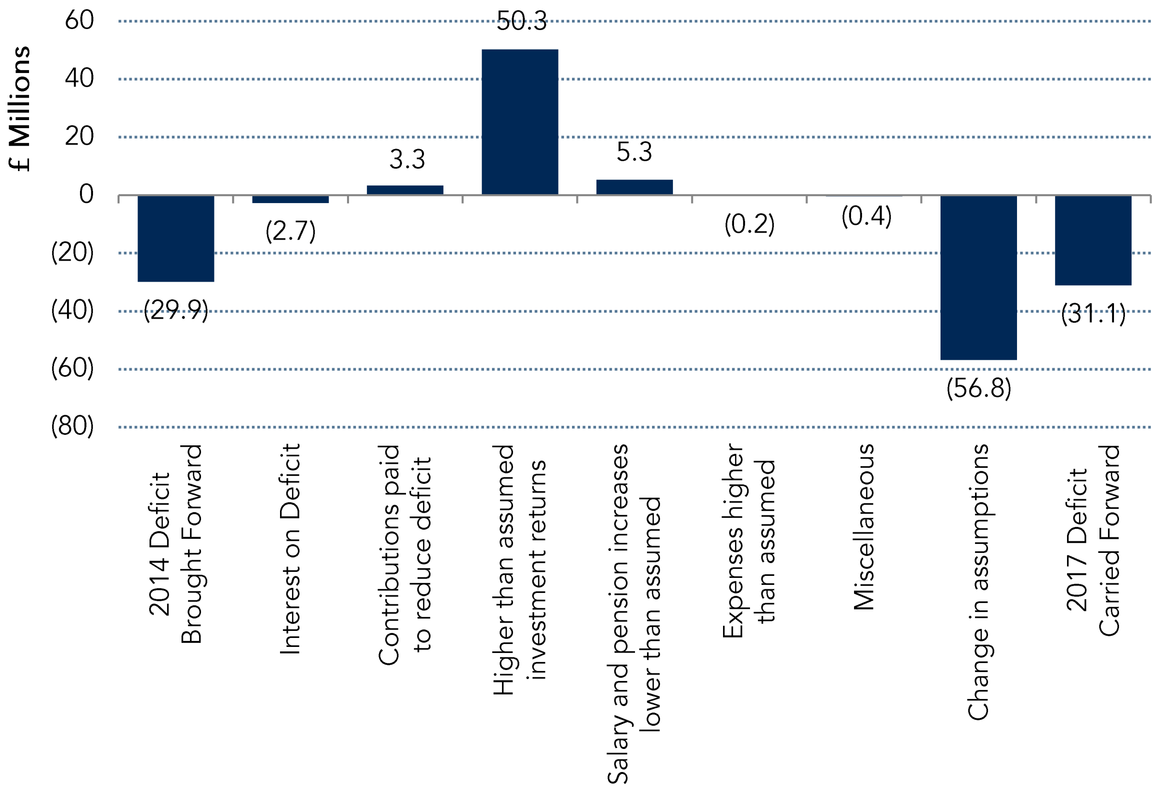
The appropriate actuarial certification of the Scheme's Technical Provisions is included as Appendix H to this report.

The Management Committee and the Colleges 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 deficit of £31,132,000 and funding level of 87% compares to the deficit disclosed by the previous valuation at 31 March 2014 of £29,847,000 and a funding level of 82%. An approximate analysis of the principal factors affecting the level of deficit since the last valuation is given below.

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

	£000's
Surplus/(Deficit) as at 31 March 2014	**(29,847)**
Interest on Surplus/(Deficit)	(2,745)
Contributions paid in excess of cost of accrual	3,312
Expected Surplus/(Deficit) as at 31 March 2017	**(29,280)**
Investment returns higher than assumed	50,260
Salary and pension increases lower than assumed	5,322
Expenses higher than assumed	(195)
Changes in assumptions	(56,818)
Miscellaneous	(421)
Actual Surplus/(Deficit) as at 31 March 2017	**(31,132)**



6.3 Significant variations

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

- Investment returns were much higher than assumed over the 3 year period;
- Experience gains mainly due to lower than assumed inflation linked pension increases and Salary increases; and
- Changes in the valuation basis, mainly as a result of lower assumed investment returns, but analysed further below.

The impact of the changes made in the valuation basis can be analysed further as follows:

		Increase/ (Decrease) in liabilities £m
1.	Reduction in investment return assumption from 5.4% p.a. to 3.65% p.a.	61.1
2.	Changes in assumptions for salary and pension increases due to changes in inflation assumptions	(1.6)
3.	Updating mortality assumptions from 2014 to 2017	(2.7)
		56.8

The largest component is the impact of the reduction in the assumption for future investment return, which is a direct consequence of the fall in gilt yields between 2014 and 2017.

6.4 Future service cost

The average ongoing joint (College plus members) future contribution rate for future service benefits, ignoring the past service position, is 30.73% of Contribution Pay. This rate includes member contributions and an allowance for current premiums for death in service costs. It excludes allowances for expenses and for the premiums for group income protection. Further details are shown below:

	% of Contribution Pay
Total Average Joint Contribution Rate (excluding expenses and GIP costs)	28.66
Death in Service Insurance Premium allowance (based on current premium rates)	2.07
Total Joint Contribution Rate	30.73
Average Member Contributions	(7.85)
Average College Contribution Rate	22.88

This compares with the current average contribution rate at which joint contributions are being paid of 25.22% of Contribution Pay, before the adjustment for the previous deficit. The main reason for the increase is the changes in the valuation assumptions, in particular the reduction in the assumption for future investment return.

6.5 Deficit funding contribution

All College Sections (with one exception) have a funding deficit. The Management Committee have agreed with each College the term over which the deficit should be repaid. In each case a fixed monetary amount is payable. The details of the agreement are set out in Appendix F.

The assumptions used in drawing up the Recovery Plan are those defined in the Statement of Funding Principles as set out in Appendix D.

6.6 Expenses

I recommended that the expense allowances continue to be expressed as a per member charge plus a per College Section charge, the latter reflecting those expenses which are independent of membership numbers.

Over the previous 3 years the ongoing expenses excluding PPF levies have averaged £455,000 per annum, an increase of just under 15% since the previous review.

The Management Committee accepted my recommendation that the expense allowances be as follows, to reflect the recent increase in costs:

Per Member Charges £ p.a.		Per College Section Charge £ p.a.
Active:	181.36	3,000
Deferred:	69.25	
Pensioner:	135.20	

Note that those expenses which are directly attributable to an individual College should be paid on top of the above rates by the individual College concerned.

6.7 Future progression and material developments

Assuming that all funding assumptions in Appendix E are borne out in practice and that the Recovery Plan adopted is to repay the deficit over the College specific period set out in Appendix F, then I expect the funding level to improve to 90% by the next valuation.

6.8 Further issues: CETVs

As the Scheme has a deficit, the Management Committee are permitted, should they so decide, to offer reduced Cash Equivalent Transfer Values (CETVs) to members asking for a transfer value quotation, to reflect the level of underfunding. The Management Committee have considered this and have agreed to maintain full CETV payments in view of the strong Colleges' covenant.

The Management Committee have agreed that I should review the CETV basis following completion of this valuation.

6.9 Scheme factors

The Scheme's administration and other actuarial factors are due for review following the valuation to reflect the change in economic and demographic conditions since the previous 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 Colleges 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 Management Committee 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 Management Committee 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

Some 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 Management Committee has no such investment.

7.9 Self-investment risk

If the Scheme invests in the Colleges in any form it is at risk that the value of this investment will fall if the Colleges perform badly. This will coincide with the time the Colleges are least able to make additional contributions to correct the situation. The Management Committee does not invest in the Colleges to help 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 Colleges' consent. The Management Committee would request that the exercise of such options would be funded by the Colleges at that time.

7.11 Climate related risks

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 Management Committee should consider the extent to which climate change may impact businesses (and so College covenants).

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

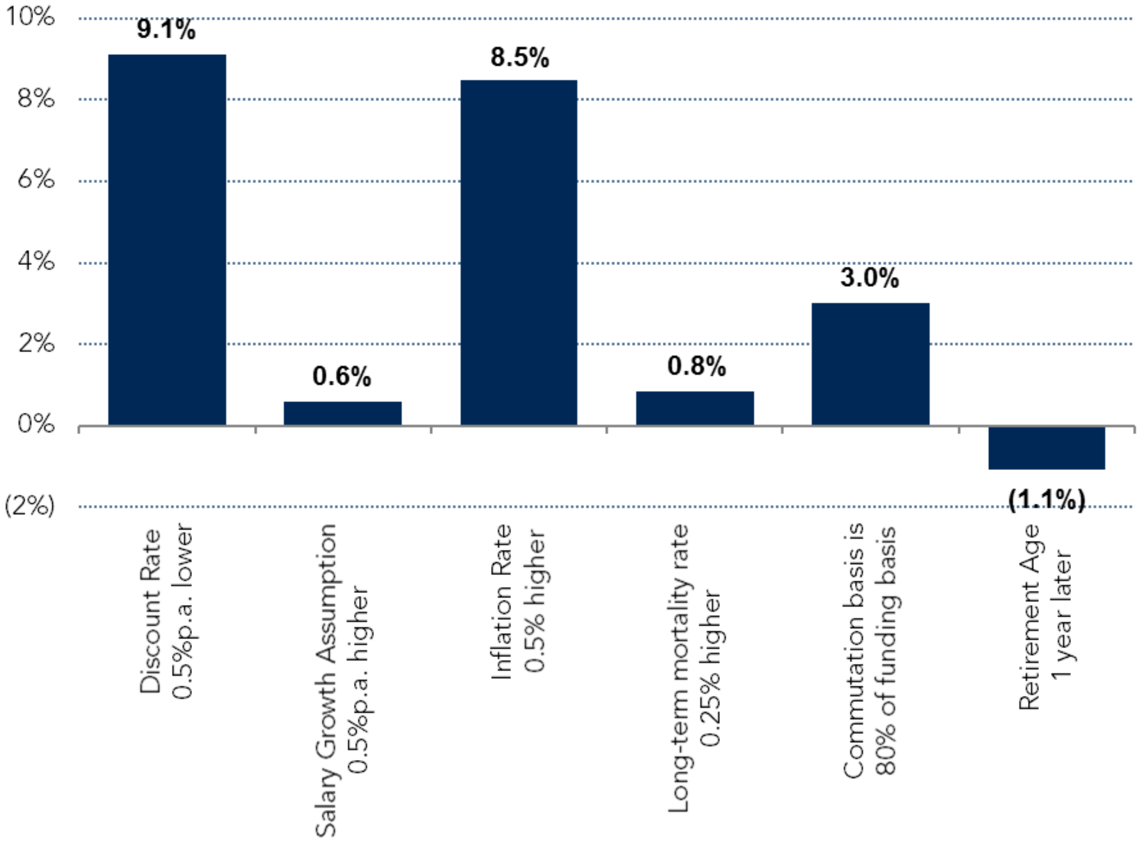
7.12 Summary

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 Management Committee 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 assumptions was changed by the specified amount. The figures shown are for a guide only as the effects of changing the assumptions are interdependent.



The chart shows that the discount rate and inflation assumptions have the greatest impact on the value of the Scheme's liabilities. Consequently, the Scheme's funding position is likely to deteriorate significantly if the Scheme's assets do not attain the real investment return assumed.

We have also undertaken calculations on a "neutral" basis with the following margins for prudence removed from the assumptions:

- 0.5% p.a. from the discount rate; and
- 0.25% p.a. from the future mortality improvement rate for females only

On this basis, the value placed on the Scheme's liabilities reduces by 8.4%.

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		150,217
• Deferred Pensioners		81,424
• Current Pensioners		108,145
• Expenses of winding up		10,139
• Expenses of benefit installation		2,481
Total Section 179 liabilities	(A)	352,406
Market Value of Scheme Assets	(B)	212,015
Section 179 Surplus/(Deficit)	**(B-A)**	**(140,391)**
Level of Section 179 Funding	**(B/A)**	**60%**

8.2 Changes since previous valuation

The previous valuation followed guidance G5 and used assumptions A6. In accordance with the requirements of the PPF these have been updated to guidance G6 and assumptions A8 for this valuation.

The PPF funding level has improved marginally to 60% since the last valuation, although the cash position has changed from a deficit of £99m to £140m, mainly as a result of:

- higher inflation expectations and significantly lower investment return assumptions;
- interest on the deficiency from the previous valuation; and
- better than expected investment returns.

8.3 Additional information

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	G6
Section 179 assumptions used	A8

Percentage of the assets shown above held in the form of a contract of insurance where this is not included in the asset value recorded in the relevant Scheme accounts: 0%

The percentage of liabilities shown above that are matched by insured annuity contracts for:

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

Proportion of liabilities related to period of service:

	Pre 6 April 1997	6 April 1997 to 5 April 2009(*)	on or after 6 April 2009
Active members	8.8%	44.5%	46.7%
Deferred members	12.6%	69.5%	17.9%
Pensioners	32.4%	67.6%	Not applicable

(*) to the valuation date for pensioners

Number of members and averages ages:

	Number of Members	Average Age
Active members	787	52
Deferred pensioners	827*	51
Pensioners	1,341	70

* including 12 pending members

The average age shown is weighted by PPF liabilities as at the effective date of this valuation, for each member type, and rounded to the nearest whole year.

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, 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

The figures in the previous Sections relate to Scheme funding on the funding objective. 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.

9.2 Assumptions: Investment return

Insurance companies price deferred and immediate annuity policies by reference to the yields available on UK Government gilts. At the valuation date such investments were yielding between 1.1% and 1.8% per annum.

We have used the investment return assumptions underlying the PPF's Section 179 valuation basis as these are intended to be close to the assumptions used by insurance companies (albeit at the more competitive end of the range). I would regard this approach as appropriate for calculating the solvency position.

9.3 Other economic and demographic assumptions

Other assumptions such as mortality and those relating to pension increases and revaluation in payment and deferment are consistent with the PPF assumptions.

This approach is an estimate which should be used as a guide only. Market changes in both interest rates and the supply and demand for this business mean that no one estimate can be relied upon. The actual true position can only be established by completing a buy-out.

9.4 Expenses

We have included an estimate of the expenses associated with organising a wind-up equal to 2% of the value of the liabilities before expenses (previously 3%). In cash terms we expect the costs to have increased from the 2014 valuation but not to the extent that 3% would imply. The true cost of winding-up the Scheme may be higher or lower than this estimate.

9.5 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:

	Solvency valuation	Previous solvency valuation
Pre-retirement return	0.73%	3.28%
Post-retirement return – deferred members	1.37%	3.28%
Post-retirement return - pensioners	1.43%	3.6%
RPI inflation maximum 5%	3.25%	3.63%
CPI inflation maximum 2.5%	2.15%	2.48%
Mortality post-retirement	S2PA CMI_2014 with long term improvement of 1.5% p.a. for males and 1.25% for females	PA00 Medium Cohort with 1.5% p.a. underpin for males and 1.0% p.a. for females
Proportions married	Males 85% Females 75%	Males 85% Females 75%

9.6 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		213,504	139,379
• Deferred Pensioners		118,272	66,380
• Current Pensioners		139,654	93,804
• Expenses		9,429	8,990
Total solvency liabilities	(A)	**480,859**	**308,553**
Market Value of Scheme Assets	(B)	**212,015**	**140,714**
Solvency Surplus/(Deficit)	(B-A)	**(268,844)**	**(167,839)**
Level of Solvency Funding	(B/A)%	**44%**	**46%**

9.7 Changes since previous valuation

The solvency level has fallen from 46% to 44% since the last valuation as a result of:

- changes in the basis mainly as a result of significantly lower investment return assumptions;
- interest on the solvency deficiency from the previous valuation;
- contributions by the Colleges being insufficient to cover the costs of pension accrual on a solvency basis; offset by
- better than expected investment returns;

9.8 Expected Solvency level at next triennial valuation

Assuming that all actuarial assumptions in this Section are borne out in practice and that the College contributions at the rates detailed in Appendix F are adopted to repay the funding deficit, then I expect the solvency level to remain at approximately 44%.

9.9 Debt on Colleges

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 Colleges. If the Colleges 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.

9.10 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	59%
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. In addition, Appendix G confirms that no College Section had a Solvency surplus. Therefore at this date if the Scheme had wound up without a solvent College it would have entered the PPF. This would have resulted in members' benefits being reduced below their full entitlements.

9.11 Future progression and material developments

Based upon the assumptions adopted for the solvency calculations, payments of College contributions at the rate detailed in Appendix F 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.

College contributions at the rate detailed in Appendix F are also likely to worsen the level of coverage on the current order of priorities. However in the period to the next valuation the change is unlikely to be significant.

10. INVESTMENT STRATEGY

10.1 Background

The Pensions Act 1995 requires the Trustee to regularly 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.

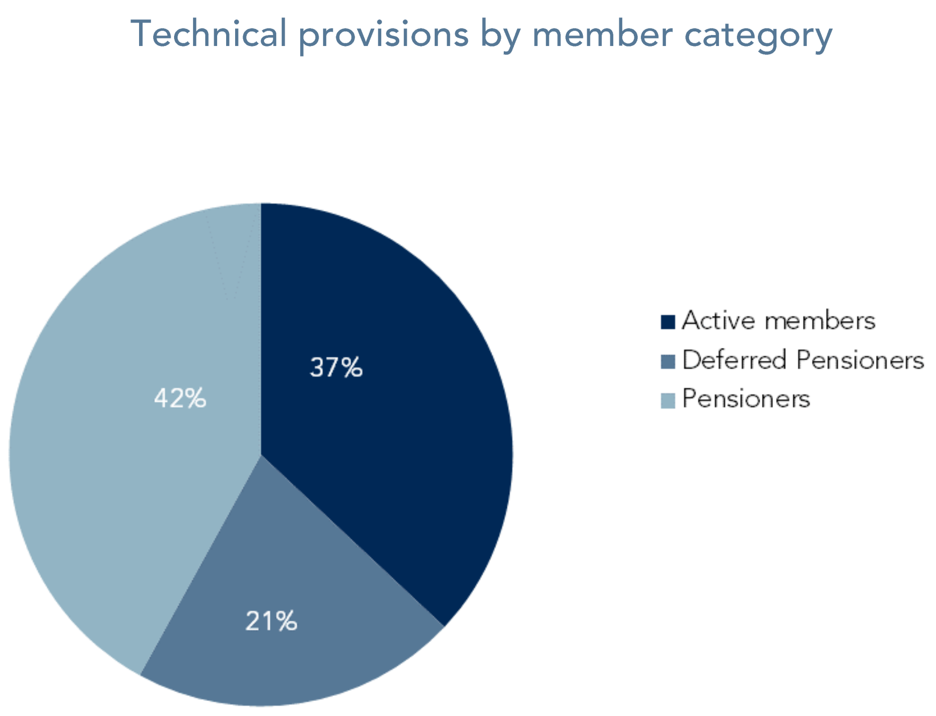
10.2 Asset split

Appendix B provides details of the Scheme's assets at the valuation date. At that time approximately 69% of the assets were invested in growth assets (equities and alternatives), which provide unknown future returns. The remainder of the assets were invested in LDI, absolute return bonds and cash, which, if held until maturity, provide known returns assuming that there are no defaults.

10.3 Liability split

Equities and alternatives assets are typically assumed to provide some level of out-performance, but their returns are volatile. Therefore, any scheme that includes assets of this type and/or uses investment return assumptions allowing for out-performance will experience a more volatile funding level.

In many schemes pensioner members are often matched by the scheme holding gilts and/or bonds because these provide a known return and their values will change in a similar way when interest rates change. The other scheme liabilities are matched by more volatile out-performance assets.



10.4 Comparison

Looking at the chart, the Scheme has a significant proportion (42%) of its liabilities directly related to pensioners. In addition, looking at the age distribution of Technical Provisions in Appendix A, a significant number of retirements are expected over the next 5 to10 years which will increase this percentage further.

It should be noted that the overall liability split between pensioners and other members masks large variations between the individual College Sections. The pensioner proportion by College Section varies from 22% to 100% of the liabilities. As the investment strategy is the same for all College Sections, this means that the degree of mismatching of assets and liabilities varies significantly between the individual Sections.

10.5 Recovery Plan

The Management Committee has agreed to use a best estimate rate of return in the calculation of contributions to be paid under the Recovery Plan. The best estimate rate of return is based on investment advice from their investment consultants.

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 Management Committee might wish to accept a certain degree of mismatching in the expectation of higher investment returns.

Should the Management Committee wish to move towards a more matched asset position then I recommend that they consider obtaining an asset liability report. This would help analyse their current investment strategy and determine alternative strategies to meet their objectives.

11. CONCLUSIONS

11.1 Funding level and Recovery Plan

The Scheme's funding level on the Statutory Funding Objective at the valuation date was 87%, equivalent to a deficit of £31,132,000. At the previous valuation the ongoing funding level was 82% with a deficit of £29,847,000. The main reasons for the changes are good investment returns, deficit reduction contributions paid by the Colleges and experience gains, offset by changes in the valuation basis.

The ongoing future joint contribution rate for the Colleges and members is 30.73% of Contribution Pay including an allowance for death in service costs but excluding allowances for expenses and the premiums for income protection.

All College Sections (with one exception) have a funding deficit. The Management Committee have agreed with each College the term over which the deficit should be repaid. In each case a fixed monetary amount is payable. The details of the agreements are set out in Appendix F.

11.2 Solvency level

The solvency position of the Scheme is a funding level of 44% at the valuation date. Contributions at the rates above are insufficient to fund the solvency basis. Consequently the above solvency position is expected to deteriorate over the period to the next actuarial valuation.

11.3 CETVs

The Management Committee have considered whether Cash Equivalent Transfer Values (CETVs) should be reduced to reflect the degree of underfunding in the Scheme. They have decided to continue to pay CETVs in full, taking into consideration the Colleges' covenants.

I have recommended that the Management Committee reviews their CETV basis and I will carry out this review in due course.

11.4 Factors

The Scheme's commutation factors and other administrative factors should be reviewed following 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 March 2020.

For each College Section with more than 100 members an interim actuarial report will be required as at 31 March 2018 and 31 March 2019.

For each College Section with a Recovery Plan, a summary of this valuation report plus copies of the Recovery Plan and Schedule of Contributions needs to be sent to TPR within 10 working days of this report being signed.

Finally a Summary Funding Statement should then be sent to members updating them on the Scheme's funding position. This should be issued by 30 September 2018.

Robert. J. Sweet

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

28 June 2018

RJS/SC/DS/Jo

Appendix A – Membership Data

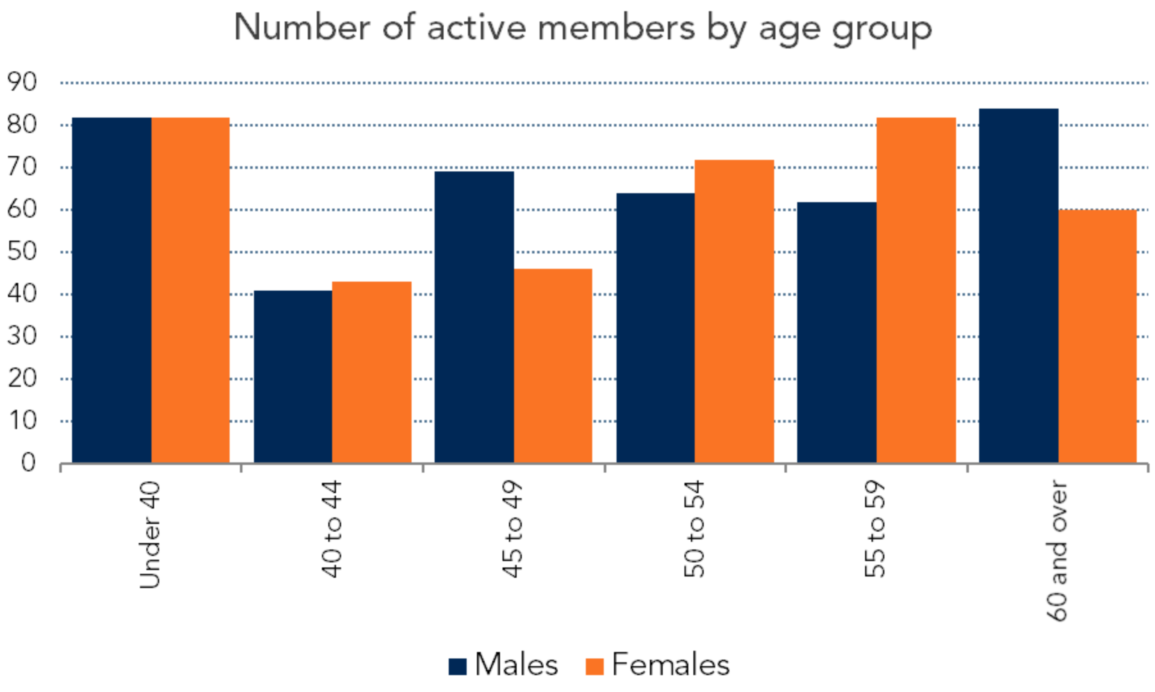
The Scheme membership data was supplied by the Pension Administration Office on behalf of the Trustee. We have relied on the accuracy of the information provided.

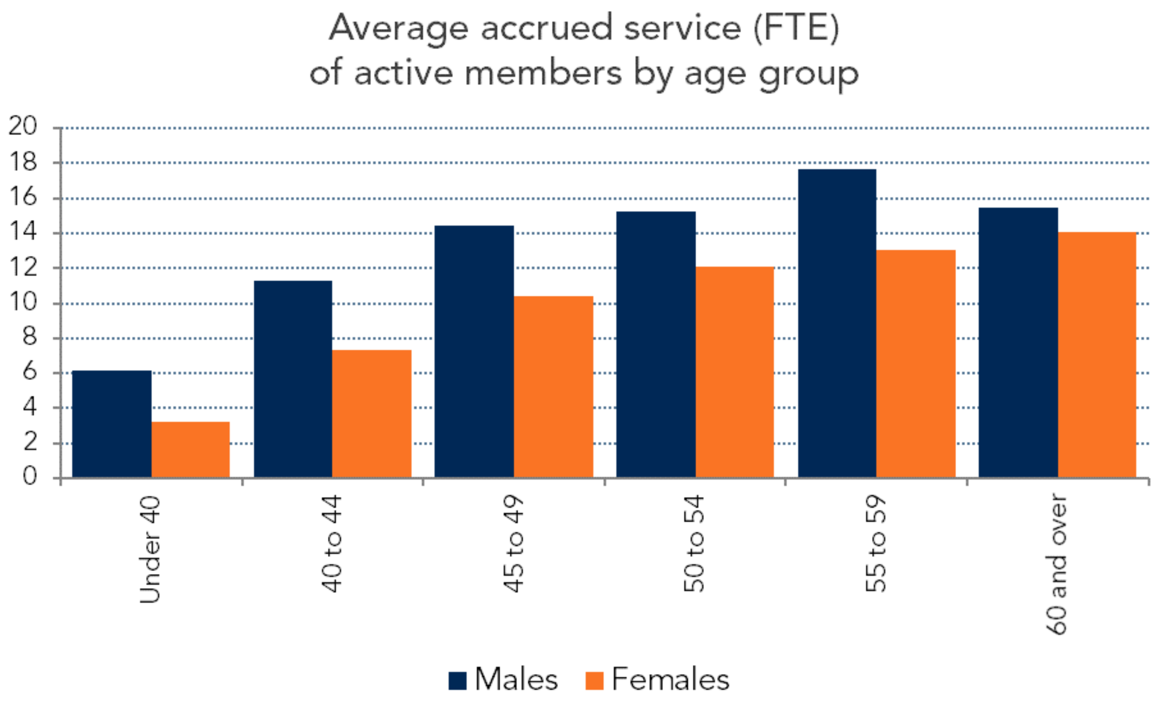
The data used in the valuation is summarised below, the previous valuation data is summarised in brackets for comparison:

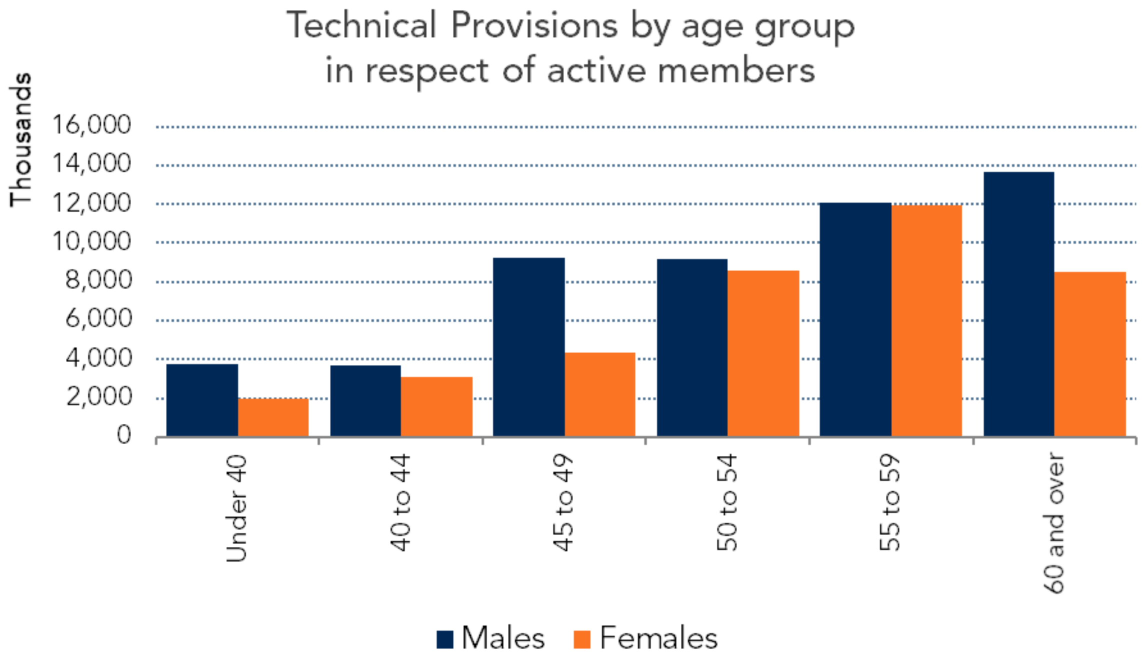
Active Members	Males	Females	Total
Number of members	402 (453)	385 (407)	787 (860)
Total Contribution Pay p.a.	£10,266,573 (£11,361,065)	£8,656,433 (£8,555,072)	£18,923,006 (£19,916,137)
Average Contribution Pay p.a.	£25,589 (£25,080)	£22,484 (£21,020)	£24,094 (£23,158)
Average past service (years)	13.3	10.0	11.7
Average age (unweighted)	49.8	49.2	49.5
Discounted mean term to retirement (years)	11.5	9.9	10.8

Notes

1. We have reconciled the above number of members with the Administration Office. They differ from figures shown in the audited accounts due to timing differences including late notification of joiners.
2. The figures for the previous actuarial valuation are shown in brackets where available.
3. Included in these statistics are 144 active members who have not yet retired, but who have passed age 60.
4. Total Contribution Pay shown above are the actual Contribution Pay paid to members (i.e. not full time equivalent for part-timers) as provided to us by the Scheme's Administrator.
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 by age group
90
80
70
60
50
40
30
20
10
0
Under 40
40 to 44
45 to 49
50 to 54
55 to 59
60 and over
Males
Females


Average accrued service (FTE)
of active members by age group
20
18
16
14
12
10
8
6
4
2
0
Under 40
40 to 44
45 to 49
50 to 54
55 to 59
60 and over
Males
Females

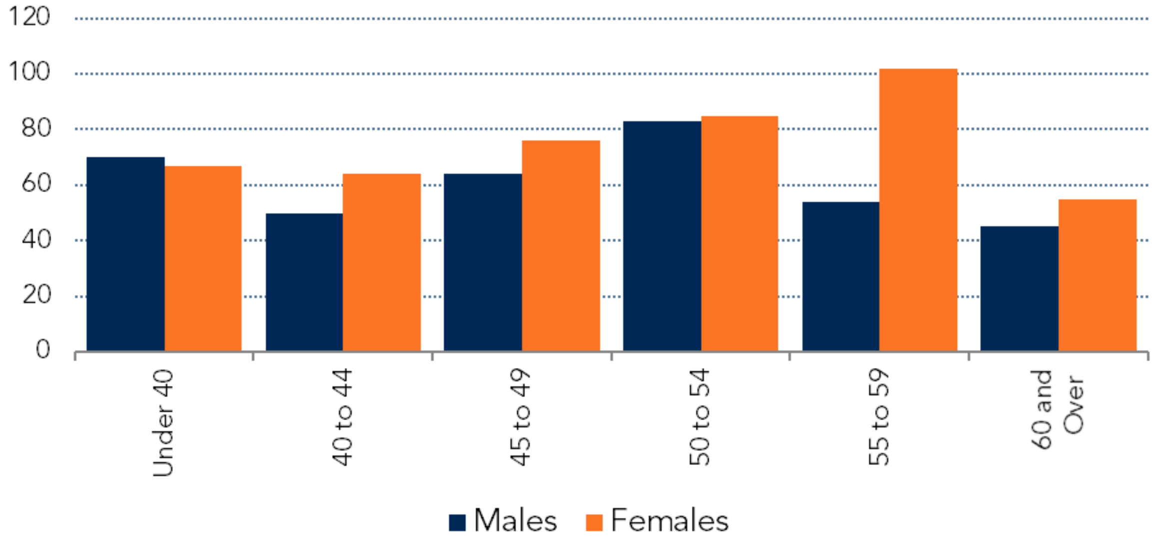


Deferred members	Males	Females	Total
Number of members	366 (370)	449 (451)	815 (821)
Total deferred pensions p.a. payable as at valuation date	£1,240,921	£1,065,542	£2,306,463 (£2,084,311)
Average deferred pension p.a. payable as at valuation date	£3,390	£2,373	£2,830 (£2,539)
Average age (unweighted)	48.8	50.0	49.4
Discounted mean term to retirement (years)	9.4	8.0	9.0

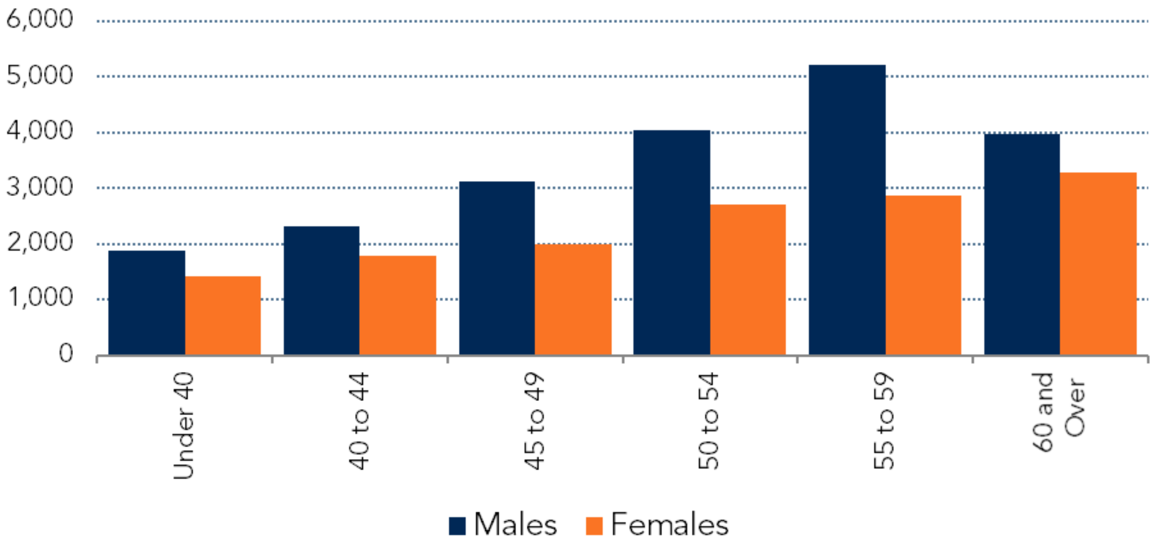
Notes

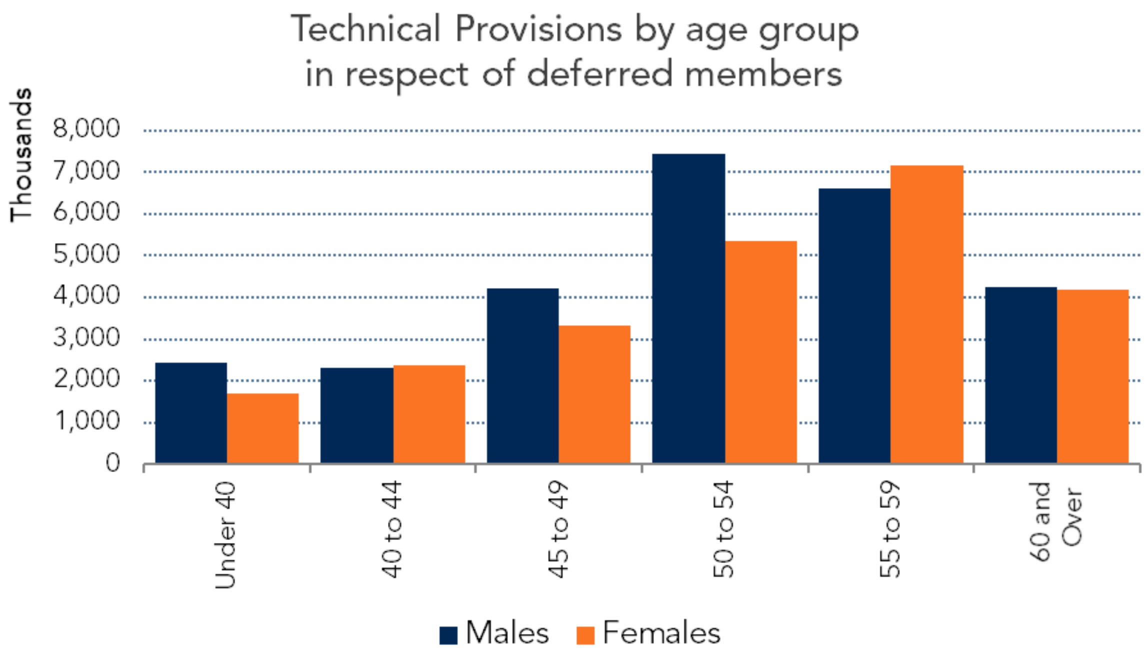
1. We have reconciled the above number of members with the Administration Office.
2. The figures for the previous actuarial valuation are shown in brackets where available.
3. Included in these statistics are 102 deferred pensioners who have not yet retired, but who have passed age 60.
4. The following 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 to the above, there are 12 pending members who are awaiting a refund of contributions. We have valued these refunds and they are included in the value of the liabilities.

Number of deferred members by age group



Average accrued pensions of deferred members by age group

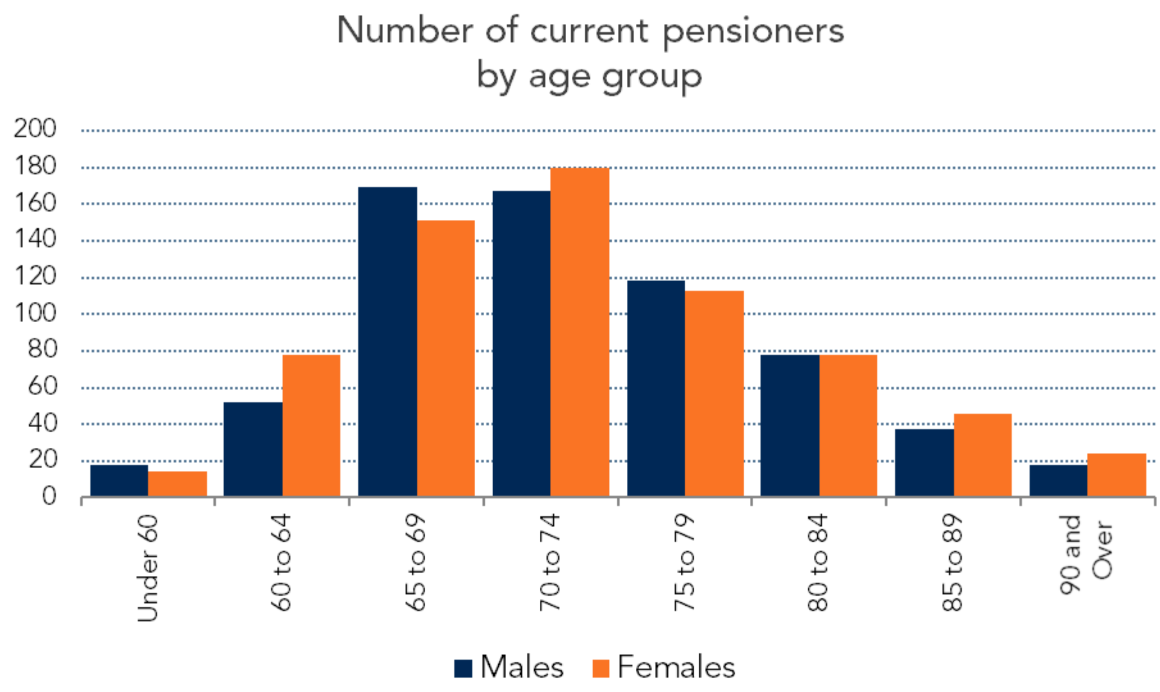




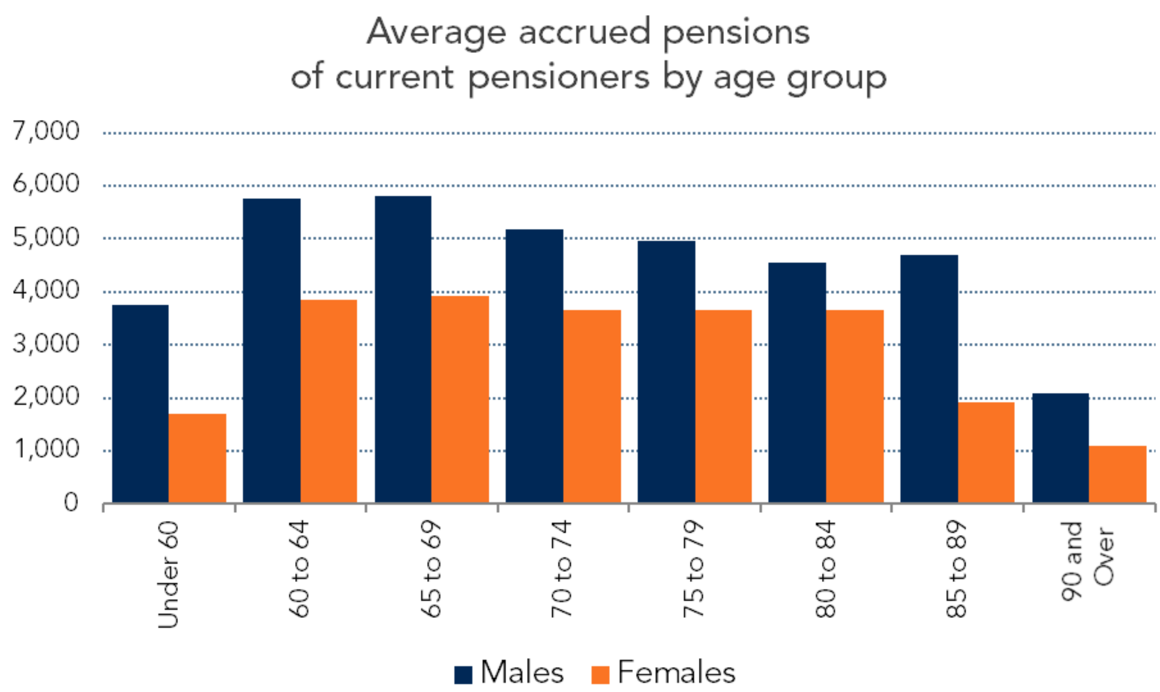
Pensioners	Males	Females	Total
Number of members	657 (637)	684 (619)	1,341 (1,256)
Total pensions p.a. payable as at valuation date	£3,364,849 (£2,780,824)	£2,386,706 (£1,887,991)	£5,751,555 (£4,668,814)
Average pension p.a. payable as at valuation date	£5,122 (£4,366)	£3,489 (£3,050)	£4,289 (£3,717)
Average age (unweighted)	73.5	73.6	73.5

Notes

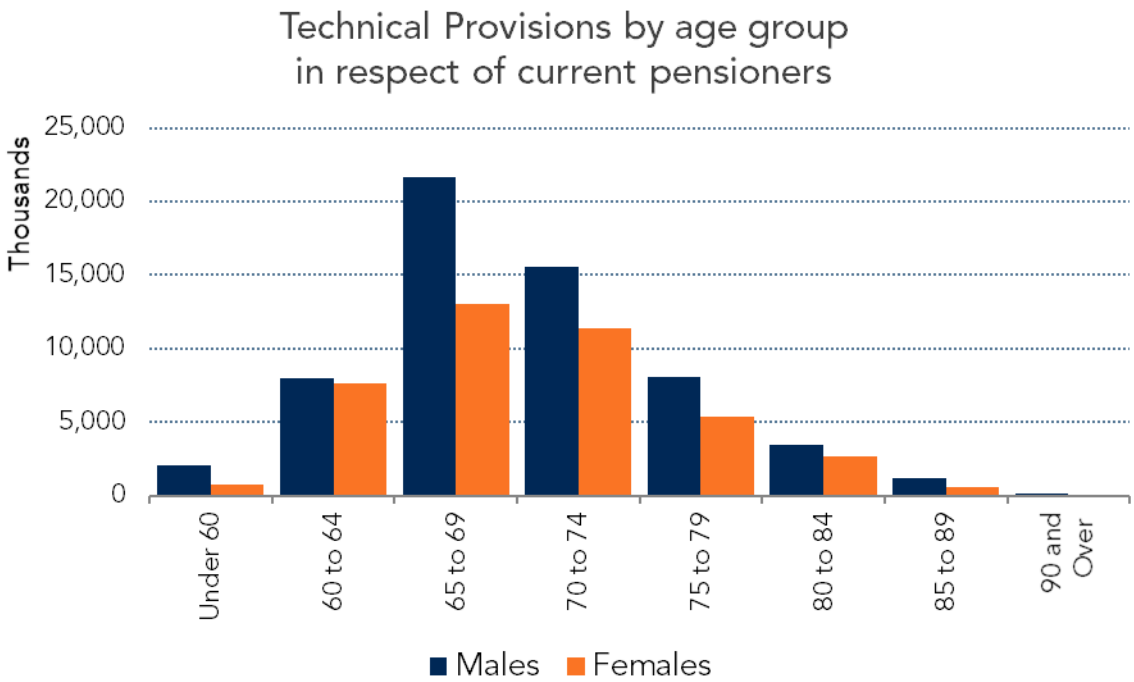
1. We have reconciled the above number of members with the Administration Office.
2. The figures for the previous actuarial valuation are shown in brackets where available
3. There are 166 dependant pensioners included in the above statistics.
4. The following graphs illustrate the current statistics in greater detail.



Number of current pensioners by age group
200
180
160
140
120
100
80
60
40
20
0
Under 60
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85 to 89
90 and Over
Males
Females



Average accrued pensions of current pensioners by age group
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Under 60
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85 to 89
90 and Over
Males
Females

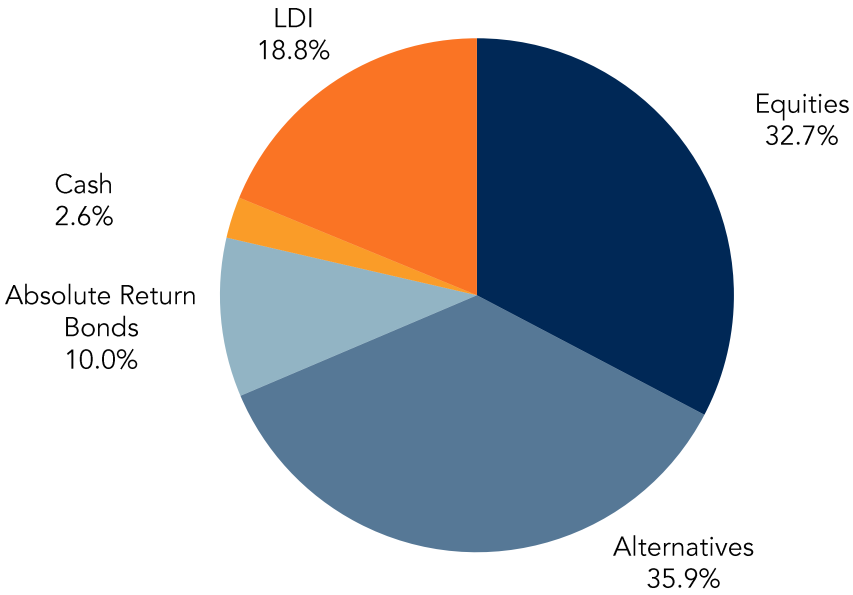

Technical Provisions by age group
in respect of current pensioners
Thousands
25,000
20,000
15,000
10,000
5,000
0
Under 60
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85 to 89
90 and Over
Males
Females

Appendix B – Scheme Assets

The Scheme's audited accounts show that the Scheme held the following assets as at 31 March 2017.

Market value of Scheme assets	Amount £	Percentage of total assets %
Invested Assets	211,736,205	99.87
Cash and Net Current Assets	278,663	0.13
Total	212,014,868	100.00

Invested assets split by categories



Appendix C – Summary of Benefits and Member Contributions

1. Effective Date	31 March 2017
2. Eligibility	Each College has its own eligibility conditions.
3. Pensionable Age (PA)	65th birthday for males and females
4. Offset Removal Date (ORD)	The date a College removed the single person's Basic State Pension (BSP) entitlement from the definition of Contribution Pay. The table at the end of this Section sets out those Colleges which have removed the BSP Offset and those which have not.
5. Contribution Pay	**For Pensionable Service prior to ORD** Gross taxable earnings for the week or month minus: (a) if paid weekly, the current weekly rate of the single person's flat rate state retirement pension, or (b) if paid monthly, $4^1/_3$ x the current weekly single person's flat rate state retirement pension in force on the last day of the month. For those Colleges where the offset has been retained, the offset is based on the Single Tier Pension (STP) instead of the BSP for Pensionable Service after 1 April 2016. **For Pensionable Service on or after ORD** Gross taxable earnings for the week or month.
6. Insured Salary	Current rate of annual salary or the gross taxable earnings for the previous tax year, whichever is larger.
7. Final Pensionable Salary	The best average of 3 consecutive years Contribution Pay in the last 13 years before the date of exit, increased in line with the RPI to the date of exit.
8. Pensionable Service	Service from date of joining the Scheme in years and completed months **plus** Service granted on transfer in **plus** Service secured by AVCs
9. Member's contributions	See table at end of this Section. Members may pay AVCs to secure added years of service.
10. Normal Retirement Pension	1/60th of Final Pensionable Salary times Pensionable Service

11. Early Retirement Pension in Normal Health	Members may retire between age 55 and 60 with the consent of their College, and on or after age 60 as of right. Members retiring at or after age 60: 1/60th of Final Pensionable Salary times Pensionable Service Members retiring between age 55 and 60: 1/60th of Final Pensionable Salary times Pensionable Service The pension in this case is reduced by an actuarial factor depending on the period to age 60. These provisions are modified in respect of Pensionable Service on or after 1 April 2004 for some Colleges, in respect of some of their members (as identified in the following table) so that the actuarial reduction referred to above is based on the period to age 65 and College consent is required for any retirement before age 65.
12. Additional Retirement Cash	For Pensionable Service prior to ORD In addition to the pension payable a tax free lump sum is payable equal to the first year's pension. For Pensionable Service on or after ORD Nil
13. Early Retirement Pension in Ill-Health or on grounds of Incapacity	Generally, there is no early retirement pension from the Scheme in these circumstances. An insured Group Income Protection (GIP) benefit will be paid outside the Scheme.
14. Exchange of pension for cash	Part of the retirement pension may be commuted for a tax free cash lump sum, in addition to the Retirement Cash in 12, subject to HMRC limits.
15. Benefits on death after retirement	(a) The balance, if any, of the first 5 years' payments of the member's pension, is paid as a lump sum to dependants plus (b) a spouse's pension of one half of the member's pension before any exchange for cash.
16. Benefits on death in service	(a) A lump sum of 2 times Insured Salary at the date of death plus (b) a spouse's pension of 25% of Insured Salary plus (c) a child's pension of 12.5% of Insured Salary for each child (maximum of 2) while below age 18 or, if later, receiving full time education.

17. Increases to pensions in payment	
• GMP earned before 6 April 1988	Nil
• GMP earned between 6 April 1988 and 5 April 1997	3% p.a. compound (or the increase in the CPI if lower)
• Pension in excess of GMP (other than spouse's or children's pensions on death in service)	The increase in the RPI in the year ending each September, applied at 1 November for service to 31 March 2016. This is modified for some Colleges in respect of Pensionable Service after 1 April 2004 for some of their members (as identified in the following table) so that the maximum increase each year is 5%. CPI up to a maximum of 2.5% for service on or after 1 April 2016.
• Spouse's or children's pensions on death in service	5% p.a. compound (or the increase in the RPI if lower)
18. Benefits on Termination of Service	(a) If the member has completed less than 3 months of Pensionable Service a refund of the member's contributions is paid to the member less tax. (b) If the member has completed between 3 months and 2 years of Pensionable Service then they have the option to take a cash transfer sum to an alternative pension arrangement. If this is not taken, then a refund is paid as described in (a). (c) If the member has completed 2 or more years Pensionable Service, the pension at termination is 1/60th of Final Pensionable Salary for each year (and proportionately for months) of Pensionable Service The pension in excess of the GMP will be revalued between termination and retirement at 5% p.a. compound (2½% p.a. for Pensionable Service after 5 April 2009) or the increase in CPI if lower. The GMP will be revalued in line with statutory increases. The member also has the option to take a transfer value to an alternative pension arrangement.
19. State Second Pension (S2P)	The following table sets out those Colleges which were contracted-out of S2P, and those which were not, prior to 31 March 2016. Those members who were not contracted-out of S2P receive lower benefits than shown in this summary. From 1 April 2016 all Colleges are contracted in.

		Service on or after 1 April 2004		Death in service benefits		Employee Contribution Rate
College	BSP Offset Removed	Members at 31 March 2004	Members joining on or after 1 April 2004	Members at 31 March 2004	Members joining on or after 1 April 2004	As at 31 March 2017
Contracted-out Colleges with BSP Offset Removed						
Christ's	1 June 2001	2	3 to 31 December 2009; 4 thereafter	Unchanged	6	10%
Churchill	1 June 2001	3 up to 31 March 2007, nil thereafter	3 up to 31 March 2007, nil thereafter	N/A	N/A	N/A
Corpus Christi	1 June 2001	2	4	Unchanged	N/A	15%
Downing	1 June 2001	1 up to 31 March 2005, 2 thereafter	4	Unchanged	N/A	15%
Emmanuel	1 June 2001	1	2	Unchanged	Unchanged	8%
Girton	1 June 2001	1	3	Unchanged	Unchanged	8.5%
Gonville & Caius	1 April 2002	2	2 to 31 March 2007; 4 thereafter	Unchanged	Unchanged	8.00%
Magdalene	1 June 2001	2	2 to 31 December 2006; 4 thereafter	Unchanged	Unchanged	15%
Murray Edwards	1 June 2001	3	4	5	N/A	15%
Newnham	1 June 2001	1	4	Unchanged	N/A	8%
Pembroke	1 June 2001	1	3 to 31 January 2006; 4 thereafter	Unchanged	5	7.14%
Peterhouse	1 June 2001	1	3 to 31 March 2008; 4 thereafter	Unchanged	5	6%
Queens'	1 June 2001	2	2	Unchanged	Unchanged	7.10% from 1 April 2016; 7.85% from 1 April 2017; 8.6% from 1 April 2018; 9.35% from 1 April 2019
Selwyn	1 June 2001	1	3	Unchanged	Unchanged	7.50%
St Catharine's	1 April 2002	3	3 to 31 October 2010; 4 thereafter	Unchanged	Unchanged	9.6%
St John's	1 April 2002	1	3 to 31 December 2016; 4 thereafter	Unchanged	6	7.25% from 1 October 2016; 8.5% from 1 October 2017
Trinity Hall	1 June 2001	2	2 to 3 October 2009; 4 thereafter	Unchanged	Unchanged	12%

College	BSP Offset Removed	Service on or after 1 April 2004 Members at 31 March 2004	Service on or after 1 April 2004 Members joining on or after 1 April 2004	Death in service Benefits Members at 31 March 2004	Death in service Benefits Members joining on or after 1 April 2004	Employee Contribution Rate As at 31 March 2017
Contracted-out Colleges with BSP Offset Retained						
King's	No	1	4	N/A	N/A	N/A
Robinson	No	3	3 to 30 June 2009; 4 thereafter	Unchanged	Unchanged	8.5%
Contracted-in Colleges with BSP Offset Removed						
Clare Hall	1 June 2001	2	2	Unchanged	Unchanged	5% increasing to 8% from 1 April 2017
Darwin	1 June 2001	1	3	Unchanged	Unchanged	5%
Lucy Cavendish	1 June 2001	3	4 up until last active member left service, nil thereafter	N/A	N/A	N/A
St Edmund's	1 June 2001	2	3 up to 1 March 2010, 4 thereafter	Unchanged	Unchanged	6.5% from 1 August 2016; 8.0% from 1 August 2017
Wolfson	1 June 2001	1	3 up to 1 March 2008, 4 thereafter	Unchanged	Unchanged	5.0% from 1 July 2016; 6.0% from 1 July 2017; 7.0% from 1 July 2018; 8.0% from 1 July 2019
Contracted-in Colleges with BSP Offset Retained						
Hughes Hall	No	1	4	N/A	N/A	N/A

Key

1) Original Benefits;
2) Cap maximum service at 40 years and pay unreduced pensions from 65;
3) As 2) above, but increase pensions in payment in line with LPI (RPI max 5% pa);
4) Alternative arrangements for future service;
5) No lump sum and 50% of prospective pension;
6) No lump sum and 50% of accrued pension;
7) Many of the above Colleges offer a salary sacrifice arrangement whereby the Member sacrifices part of their salary in lieu of the above contribution which is then paid by the College; and
8) Contracting out ceased for all Colleges on 31 March 2016 when they all became contracted in.
9) For all Colleges increases to pensions in payment related to Pensionable Service after 1 April 2016 are in line with CPI capped at 2½%
10) For Colleges where the BSP Offset has been retained this offset is superseded by a STP Offset for Pensionable Service after 1 April 2016.

Appendix D – Statement of Funding Principles

Status

This Statement has been prepared by the Management Committee for the purposes of the actuarial valuation as at 31 March 2017 after obtaining the advice of Robert Sweet, the Scheme Actuary and after consulting the Colleges.

Statutory Funding Objective

This statement sets out the Management Committee'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 depends on whether or not the Section is open or closed to new entrants.

If a Section is open to new entrants, the Projected Unit Method is to be used.

If the Section is closed to new entrants then the Attained Age Method or the Projected Unit Method may be used, as agreed with the College concerned.

For those Colleges closed to new entrants, but who have retained the Projected Unit Method for funding purposes, the Colleges and Management Committee understand that normal contribution rates will increase over time.

Technical provisions – assumptions

The assumptions will be based upon the following marker yields:

Fixed Interest Gilt Yield

Annualised yield on the 18 year Bank of England spot gilt yield, rounded down to the nearest 0.05% per annum. As at 31 March 2017 this yield was 1.76% rounded to 1.75% per annum.

Implied Inflation

Annualised yield on the 18 year Bank of England Implied Inflation spot curve, rounded to the nearest 0.05% per annum. As at 31 March 2017 this yield was 3.50% per annum.

Discount Interest Rate

Technical provisions are determined using a single rate of interest for all pre and post-retirement benefits.

On retirement, Members' pensions are paid from the fund. Assets providing a risk free rate of return, such as Government bonds (gilts) provide a good match for pensions in payment.

The Management Committee invests in a wide range of assets including equities and property, which are expected to give long term returns in excess of those available on gilts. The Management Committee wishes to take credit for some of this out-performance and to that end will use an interest rate based on the Bank of England's published nominal gilt yield curve at 18 years plus a margin to allow for this expected out-performance. The Management Committee has determined that for the purposes of the calculations as at 31 March 2017 the margin to be adopted is 1.9% per annum.

Retail Price Inflation (RPI)

RPI will be determined at the valuation date and is based on the Bank of England's published implied inflation rate yield curve, using the rate at 18 years.

As RPI may be over- or understated using this method due to varying demand for index linked gilts, the Management Committee can adjust the calculated yield by up to 0.25% per annum and then round the answer to the nearest 0.05%. For the calculation at 31 March 2017 they applied a reduction of 0.15% per annum.

Consumer Price Inflation (CPI)

CPI will be determined by making an adjustment to the assumption adopted for RPI. The Management Committee have agreed to determine the assumption for CPI by making a 1.0% per annum deduction from the assumption for RPI, in line with best estimates from the Office of Budget Responsibility.

Pension Increases in payment

Pension increases in payment, depending on the College Section and where benefits were accrued, are defined in the Rules as either:

- Increasing in line with RPI;
- Increasing in line with RPI to a maximum of 5% per annum compound;
- Increasing in line with CPI to a maximum of 3% per annum compound (post April 1988 GMP);
- Increasing in line with CPI to a maximum of 2.5% per annum compound (post March 2016 pensions);
- Level in payment (pre April 1988 GMP only).

To derive these increases the Management Committee will adopt the Black-Scholes analytic pricing model resulting in the following:

Pension Increase	Assumption
RPI (min 0%; no max)	3.35% p.a.
RPI (min 0%; max 5%)	3.25% p.a.
CPI (min 0%; max 3%)	2.05% p.a.
CPI (min 0%; max 2½%)	1.85% p.a.

Pension Increases in Deferment

The Management Committee's assumption is the same as the expected future increase in the CPI up to a maximum of 5% per annum (2½% per annum for Pensionable Service after 5 April 2009).

Pay Increases

After discussion with the Colleges, the Management Committee believe that, due to Colleges' salary banding structure and limits to comparable salaries in the Public Sector, it is appropriate to assume that in future salary increases will be limited to CPI plus 0.5% per annum.

Mortality

It is the intention of the Management Committee to use both pre- and post-retirement 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.

The Management Committee have agreed to adopt the S2 normal pensioner average mortality table produced by the Continuous Mortality Investigation Bureau (CMIB).

In addition, the Management Committee wish to make provision for future longevity improvements by adopting the CMI_2016 projection model produced by the CMIB, with a 1.25% per annum long term improvement rate for future longevity.

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 Management Committee does not allow explicitly for new entrants. However, by adopting the Projected Unit Method for Colleges open to new entrants, 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

The Management Committee believe that the vast majority of members take the maximum tax free cash option at retirement.

The Committee therefore wish to make allowance for this as follows:

- 100% of members take maximum tax free cash at retirement;
- Commutation (cash) factors are those in force at the valuation date.

This feature will be monitored at each future valuation.

Withdrawals from Active Service

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

Retirement

The Scheme's Pensionable Age is 65 although many members have the right to take at least part of their pension benefits without actuarial reduction at age 60. The Management Committee wishes to fund active member benefits to assumed average expected ages of retirement for all Males and Benefit Option 2 & 3 Females of age 65 and for Benefit Option 1 Females of age 63 for service to 31 March 2016.

For service accrued to 31 March 2016, for members who have previously left the Scheme the Management Committee will assume that Benefit Option 1 Females retire at age 60, and other members will retire at age 62.

For service accrued on or after 1 April 2016 all members are assumed to retire at age 65.

These retirement ages will continue to be reviewed by the Actuary

Age Difference of Dependants

Husbands are assumed to be 3 years' older than their wives.

Percentage with Dependant's Benefits at Death

80% of members are assumed to be married at death.

Expenses

Expenses of administering the Scheme are borne by the Scheme.

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

The Actuary has reviewed the expense provisions in the light of recent experience and recommended that a per member and per College Section charge be made to each College Section. These are as follows:

- College Section Charge = £3,000.00 per annum
- Active Member Charge = £181.36 per annum
- Deferred Member Charge = £69.25 per annum
- Pensioner Member Charge = £135.20 per annum

These charges will be reviewed at each future valuation.

In addition, each College will pay the directly attributable PPF levies plus any directly attributable actuarial or legal fees.

Policy on discretionary increases and funding strategy

No allowance has been made for any discretionary increases in benefits in the calculation of the technical provisions.

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

Any funding shortfalls identified at an actuarial valuation are to be eliminated by the payment of additional contributions. In determining the length of the recovery period at any particular valuation the Management Committee's principles are to take into account the following factors:

- the size of the funding shortfall;
- the maturity of the Section concerned;
- the Management Committee's assessment of the financial covenant of the Colleges; and
- any contingent security offered by the Colleges.

The assumptions to be used in the calculations to determine the additional contributions required will be those set out above for calculating the Technical Provisions, except that the expected rate of return (the return on existing assets and on new contributions paid during the recovery period) will be the gross redemption yield on Bank of England's published gilt yield at duration 18 years plus a margin of up to 4% per annum, the exact level of the margin will be such as the Management Committee determine to be appropriate in any particular case.

The assumption adopted for the valuation at 31 March 2017 is 3.9% per annum, i.e. a margin of 2.15% over gilt yields.

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

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

Policy on reduction of cash equivalent transfer values (CETVs)

The Management Committee asks the Scheme Actuary to advise them 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 Management Committee are 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 Management Committee will commission a report from the Scheme Actuary to decide whether, and to what extent, CETVs should be reduced.

Payments to the Colleges

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 Colleges 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 Management Committee will consider whether a payment would be in the interest of the members, and if so, the Management Committee 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 March 2017 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 for College Sections whose membership exceeds 100.

The Management Committee 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 Management Committee will consult with the Colleges before doing so.

Signed on behalf of the Management Committee

Signature: Martin Harris

Name: Sir Martin Harris

Position: Chair

Date: 28 June 2018

Appendix E – Assumptions

The 2017 Funding Basis is based on Statutory Funding Objective and the Statement of Funding Principles adopted by the Management Committee. The 2014 Funding Basis sets out the assumptions used in the previous valuation for comparison purposes.

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

Economic	Assumptions for valuation as at 31 March 2017 (% per annum compound)	Assumptions used in valuation as at 31 March 2014 (% per annum compound)
Rate of interest:		
• before retirement	3.65	5.4
• after retirement	3.65	5.4
Asset return for Recovery Plan	3.90	5.9
Rate of salary increases:	2.85	1.5 for 3 years, then 3.05
Rate of increase in pensions in payment:		
• Guaranteed Minimum Pension (GMP) earned for service before 6 April 1988	0.0	0.0
• GMP earned for service between 6 April 1988 and 5 April 1997	2.05	2.35
• Pension in excess of GMP earned to 31 March 2004	3.35	3.35
• Pension earned between 1 April 2004 and 31 March 2016	3.35/3.25	3.35 or 3.15
• Pension earned after 31 March 2016	1.85	N/A

	Assumptions for valuation as at 31 March 2017 (% per annum compound)	Assumptions used in valuation as at 31 March 2014 (% per annum compound)
Rate of increases to pensions in deferment: • Excess pension accrued prior to 6 April 2009 • Excess pension accrued from 6 April 2009 • GMP	 2.35 2.35 Statutory	 2.55 2.5 Statutory
Other		
Valuation of assets:	Surrender value of the assets	Surrender value of the assets
Expenses:	• College Section Charge = £3,000 p.a. • Active Member Charge = £181.36 p.a. • Deferred Member Charge = £69.25 p.a. • Pensioner Member Charge = £135.20 p.a.	• College Section Charge = £3,000 p.a. • Active Member Charge = £152.38 p.a. • Deferred Member Charge = £58.18 p.a. • Pensioner Member Charge = £113.59 p.a.
Death in Service Premiums:	As paid by the individual College	As paid by the individual College
Pension Protection Fund levy and other directly attributable expenses:	Paid for in addition to the above expenses	Paid for in addition to the above expenses
Demographic		
Mortality tables	S2 SAPS normal pensioner mortality tables plus the CMI_2016 projection based on year of birth and with long term improvements of 1.25% p.a.	S2 SAPS normal pensioner mortality tables plus the CMI_2013 projection based on year of birth and with long term improvements of 1% p.a.

	Assumptions for valuation as at 31 March 2017 (% per annum compound)	Assumptions used in valuation as at 31 March 2014 (% per annum compound)
Assumed Retirement Age (ARD) Males: Active Members	Age 65	Age 65
Deferred Members: • Service to 31 March 2016 • Service from 1 April 2016	Age 62 Age 65	Age 62 N/A
Females: Active Members	Age 63 for Benefit Option 1 members to 31 March 2016 and Age 65 for Benefit Option 2&3 members and service on or after 1 April 2016	Age 63 for Benefit Option 1 members and Age 65 for Benefit Option 2&3 members
Deferred Members	Age 60 for Benefit Option 1 members to 31 March 2016 Age 62 for Benefit Option 2&3 Members to 31 March 2016 and Age 65 for service on or after 1 April 2016	Age 60 for Benefit Option 1 members and Age 62 for Benefit Option 2&3 Members
Proportion Married:	Males and Females 80%	Males and Females 80%
Age Difference:	Wives 3 years younger than their husbands	Wives 3 years younger than their husbands
Commutation of pension for cash:	100% of Members will take their maximum tax free cash allowance on the basis that current commutation factors are maintained.	100% of Members will take their maximum tax free cash allowance on the basis that commutation factors are 93% of the funding basis factors.
Withdrawal rates:	No allowance	No allowance
Other Member Options:	No allowance	No allowance

Appendix F – College Contribution Levels

College	From 1 April 2017 to 30 June 2018			From 1 July 2018				
	Employee Contribution Rate (%)	Employer Contribution Rate (%)	Recovery Plan Amounts (15 months)	Employee Contribution Rate (%)	Employer Contribution Rate (%)	Recovery Plan Amounts (£ p.a.)	Recovery Plan Cessation Date	
Contracted-out Colleges with BSP Offset Removed								
Christ's	10.00	12.78	107,558	10.00	22.15	178,856	31 March 2034	*
Churchill	-	-	60,348	-	-	Nil		**
Corpus Christi	15.00	8.63	0	15.00	15.18	Nil		*
Downing	15.00	14.68	39,105	15.00	22.26	39,105	30 April 2031	*
Emmanuel	8.00	17.08	14,543	8.00	23.44	70,759	31 March 2034	
Girton	8.50	15.24	69,976	8.50	24.71	169,569	31 March 2034	*
Gonville & Caius	8.00	18.35	140,565	8.00	25.92	140,565	30 September 2032	*
Magdalene	15.00	14.26	48,974	15.00	16.99	48,974	31 July 2033	*
Murray Edwards	15.00	14.65	62,097	15.00	20.20	62,097	30 September 2028	*
Newnham	8.00	20.27	24,375	8.00	25.91	24,375	30 September 2022	*
Pembroke	7.14	21.26	99,290	9.00	24.96	120,220	31 March 2034	*
Peterhouse	6.00	19.86	11,575	6.00	26.49	44,764	31 March 2034	
Queens'	7.85	15.56	171,782	8.60	21.83	274,247	31 March 2029	
Selwyn	7.50	17.37	37,074	7.50	23.70	99,277	31 March 2034	
St Catharine's	9.60	16.32	59,387	9.60	22.49	116,522	31 March 2034	*
St John's	7.25	15.73	401,899	8.50	22.06	401,899	31 March 2030	*
Trinity Hall	12.00	12.29	90,844	12.00	18.51	170,487	31 March 2034	*
Contracted-out Colleges with BSP Offset Retained								
King's	-	-	136,777	-	-	136,777	30 September 2024	**
Robinson	*8.50*	*19.32*	131,145	8.50	30.26	181,164	31 March 2034	*
Contracted-in Colleges with BSP Offset Removed								
Clare Hall	8.00	16.09	2,823	8.00	23.26	10,411	31 March 2034	
Darwin	5.00	19.19	23,772	5.00	26.49	35,653	31 March 2034	
Lucy Cavendish	-	-	2,945	-	-	3,390	31 March 2034	**
St Edmund's	6.50	17.43	2,597	8.00	24.58	7,747	31 March 2034	*
Wolfson	5.00	19.53	34,697	7.00	24.64	35,069	31 March 2034	*
Contracted-in Colleges with BSP Offset Retained								
Hughes Hall	-	-	6,111	-	-	6,111	31 August 2032	**

**   Closed to New Entrants*
*** Closed to Future Accrual*
Also please see notes overleaf

General	*Notes*
Scheme Expenses	Additional contributions are payable to fund Scheme expenses at the rate per College Section of £3,000 p.a. plus £181.36 per active members, £69.25 per deferred member, and £135.20 per pensioner based on statistics at 31 March 2017.
Insurance Premiums	The contribution rates shown are inclusive of the insurance premiums payable for death-in-service and group income protection benefits (where applicable).
Frequency of Contributions	Contributions are payable monthly unless otherwise indicated on the College's individual Schedule of Contributions. Monthly contributions are to be paid on or before the 4th day of the calendar month following that to which the payment relates.
College	Notes
Queens' College	Employee Rate will increase to 8.60% on 1 April 2018, and 9.35% on 1 April 2019. Retirement Rate paid by the College will reduce by 0.75% & 0.75% on the same dates as a result.
St Edmund's College	Employee Rate will increase to 8.0% on 1 August 2017. The pre July 2018 rate paid by the College will reduce by 1.5% on the same date as a result.
St John's College	Employee Rate increases to 8.5% on 1 October 2017. The pre July 2018 rate paid by the College will be reduced as a result by 1.25% from 1 October 2017.
Wolfson College	Employee Rate will increase by 1% to 8.0% from 1 July 2019. The rate paid by the College will be reduced by 1% as a result from 1 July 2019.

Appendix G – College Funding Levels

College	Funding Objective Basis				Solvency Funding Basis				PPF Basis			
	Technical Provisions (£)	Asset Values (£)	Surplus/ (Deficiency) (£)	Funding Level (%)	Technical Provisions (£)	Asset Values (£)	Surplus/ (Deficiency) (£)	Funding Level (%)	Technical Provisions (£)	Asset Values (£)	Surplus/ (Deficiency) (£)	Funding Level (%)
Contracted-out Colleges with BSP Offset Removed												
Christ's	13,499,427	10,913,015	(2,586,412)	81%	26,874,132	10,913,015	(15,961,117)	41%	19,582,359	10,913,015	(8,669,344)	56%
Churchill	8,230,390	8,221,948	(8,442)	100%	13,929,777	8,221,948	(5,707,829)	59%	10,693,376	8,221,948	(2,471,428)	77%
Corpus Christi	6,881,559	7,892,227	1,010,668	115%	11,948,702	7,892,227	(4,056,475)	66%	8,734,010	7,892,227	(841,783)	90%
Downing	5,657,406	5,044,396	(613,010)	89%	10,370,414	5,044,396	(5,326,018)	49%	7,732,584	5,044,396	(2,688,188)	65%
Emmanuel	11,965,032	10,771,030	(1,194,002)	90%	25,057,365	10,771,030	(14,286,335)	43%	18,228,855	10,771,030	(7,457,825)	59%
Girton	15,061,564	12,597,931	(2,463,633)	84%	30,695,643	12,597,931	(18,097,712)	41%	22,352,486	12,597,931	(9,754,555)	56%
Gonville & Caius	14,901,749	12,776,001	(2,125,748)	86%	28,021,974	12,776,001	(15,245,973)	46%	20,774,610	12,776,001	(7,998,609)	61%
Magdalene	6,995,095	6,133,434	(861,661)	88%	12,686,015	6,133,434	(6,552,581)	48%	9,573,294	6,133,434	(3,439,860)	64%
Murray Edwards	5,273,031	4,556,134	(716,897)	86%	9,326,777	4,556,134	(4,770,643)	49%	7,056,569	4,556,134	(2,500,435)	65%
Newnham	5,030,528	4,858,140	(172,388)	97%	8,822,459	4,858,140	(3,964,319)	55%	6,772,062	4,858,140	(1,913,922)	72%
Pembroke	10,151,464	8,309,284	(1,842,180)	82%	18,802,437	8,309,284	(10,493,153)	44%	14,228,074	8,309,284	(5,918,790)	58%
Peterhouse	11,361,019	10,459,508	(901,511)	92%	23,169,910	10,459,508	(12,710,402)	45%	16,837,860	10,459,508	(6,378,352)	62%
Queens'	17,730,272	14,916,600	(2,813,672)	84%	35,525,057	14,916,600	(20,608,457)	42%	25,456,097	14,916,600	(10,539,497)	59%
Selwyn	11,551,596	10,060,382	(1,491,214)	87%	23,736,317	10,060,382	(13,675,935)	42%	17,596,009	10,060,382	(7,535,627)	57%
St Catharine's	10,067,316	8,332,809	(1,734,507)	83%	19,919,249	8,332,809	(11,586,440)	42%	14,561,468	8,332,809	(6,228,659)	57%
St John's	35,399,658	30,625,505	(4,774,153)	87%	80,125,785	30,625,505	(49,500,280)	38%	57,420,665	30,625,505	(26,795,160)	53%
Trinity Hall	13,104,503	10,621,387	(2,483,116)	81%	27,451,048	10,621,387	(16,829,661)	39%	19,882,379	10,621,387	(9,260,992)	53%
Contracted-out Colleges with BSP Offset Retained												
King's	13,977,282	12,840,871	(1,136,411)	92%	24,017,794	12,840,871	(11,176,923)	53%	17,709,810	12,840,871	(4,868,939)	73%
Robinson	13,387,175	10,730,951	(2,656,224)	80%	25,455,078	10,730,951	(14,724,127)	42%	18,628,630	10,730,951	(7,897,679)	58%
Contracted-in Colleges with BSP Offset Removed												
Clare Hall	1,999,471	1,837,326	(162,145)	92%	3,627,578	1,837,326	(1,790,252)	51%	2,771,680	1,837,326	(934,354)	66%
Darwin	3,777,334	3,251,206	(526,128)	86%	7,462,821	3,251,206	(4,211,615)	44%	5,590,063	3,251,206	(2,338,857)	58%
Lucy Cavendish	362,066	305,710	(56,356)	84%	635,639	305,710	(329,929)	48%	489,026	305,710	(183,316)	63%
St Edmund's	816,450	700,670	(115,780)	86%	1,781,120	700,670	(1,080,450)	39%	1,286,227	700,670	(585,557)	54%
Wolfson	5,253,966	4,643,632	(610,334)	88%	10,383,783	4,643,632	(5,740,151)	45%	7,642,369	4,643,632	(2,998,737)	61%
Contracted-in Colleges with BSP Offset Retained												
Hughes Hall	711,879	614,771	(97,108)	86%	1,032,013	614,771	(417,242)	60%	805,920	614,771	(191,149)	76%

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

Name of Scheme: Cambridge Colleges' Federated Pension Scheme

Calculation of Technical Provisions

I certify that, in my opinion, the calculation of the Scheme's technical provisions as at 31 March 2017 is made in accordance with regulations under section 222 of the Pensions Act 2004. The calculation uses a method and assumptions determined by the Management Committee acting as the Trustee of the Scheme and set out in the Statement of Funding Principles dated 28 June 2018.

Signed:		Date:	28 June 2018
Name:	Robert 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 I – 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 Trustees 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 Trustees have 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 Trustees and Employer should aim to fund 100% of the Scheme's Technical Provisions.