MERCER

CONSULTING. OUTSOURCING. INVESTMENTS.

SCHEME FUNDING REPORT OF THE ACTUARIAL VALUATION AS AT 31 MARCH 2011

UNIVERSITIES SUPERANNUATION SCHEME

15 June 2012

MARSH & McLENNAN COMPANIES

CONTENTS

1. Introduction 1

2. Key results of the scheme funding assessment – technical provisions 2

3. Experience since last valuation 3

4. Projected future funding level and volatility 6

5. Contribution requirements 9

6. Key results of the scheme funding assessment – historic gilts basis 12

7. Wind-up position 13

8. Pension Protection Fund (PPF) position 14

Appendix A: Assumptions 15

Appendix B: Summary membership data 23

Appendix C: Assets 24

Appendix D: Benefit summary 25

Appendix E: Certificate of technical provisions 26

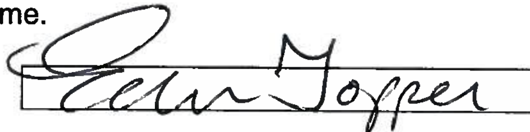
1

Introduction

This report is addressed to the Trustee of the Universities Superannuation Scheme ("the Scheme") and is provided to meet the requirements of Section 224(2)(a) of the Pensions Act 2004. It describes the factors considered by the Trustee when carrying out the actuarial valuation as at 31 March 2011 and the decisions reached as a result.

The purpose of the actuarial valuation is for the Trustee to determine:

- The expected cost of providing the benefits built up by members at the valuation date (the "liabilities") and compare this against the funds held by the Scheme (the "assets").
- An appropriate plan for making up the shortfall if the Scheme has less assets than liabilities.
- The contributions needed to cover the cost of the benefits that active members will build up in the future and other costs incurred in running the Scheme.

Signature		**Date of signing**	15 June 2012
Scheme Actuary	Edwin Topper	**Qualification**	Fellow of the Institute and Faculty of Actuaries

This report has been prepared in accordance with the version of the *Pensions Technical Actuarial Standard* current at the date this report is signed. It also complies with the relevant requirements of *Technical Actuarial Standards R: Reporting Actuarial Information, D: Data* and *M: Modelling*, where they apply to this report. These Standards are all issued by the Board for Actuarial Standards. The calculations referred to in the report use methods and assumptions appropriate for reviewing the financial position of the Scheme and determining a contribution rate for the future. Mercer does not accept liability to any third party in respect of this report; nor do we accept liability to the Trustee if the information provided in this report is used for any purpose other than that stated. The report may be disclosed to members and others who have a statutory right to see it. It may also be disclosed to any participating employer and, if the Trustee and Mercer consent, it may be disclosed to other third parties.

2

Key results of the scheme funding assessment – technical provisions

2.1. Past service funding position

The table on the right compares the assets and liabilities of the Scheme at 31 March 2011. Figures are also shown for the last valuation as at 31 March 2008 for comparison.

The table shows that at 31 March 2011 there was a shortfall of £2,910.2 million. An alternative way of expressing the position is that the Scheme's assets were sufficient to cover 92% of its liabilities – this percentage is known as the funding level of the Scheme.

At the previous valuation at 31 March 2008 the surplus was £707.3 million, equivalent to a funding level of 103%. The key reasons for the changes between the two valuations are considered in 3.2.

	£m	
	31 March 2011	31 March 2008
Total assets	32,433.5	28,842.6
Liabilities:		
Active members	18,447.7	14,774.6
Deferred pensioners	2,792.1	2,229.3
Pensioners	14,103.9	11,131.4
Total liabilities	35,343.7	28,135.3
Past service surplus / (shortfall)	(2,910.2)	707.3
Funding level	92%	103%

The assets and liabilities of the Supplementary section of the Scheme are included in the figures above. The Supplementary section of the Scheme had a surplus of £173.5 million hence the Main section of the Scheme had a shortfall of £3,083.7 million at 31 March 2011 on the technical provisions basis.

The liability value at 31 March 2011 shown in the table above is known as the Scheme's "technical provisions". The technical provisions are calculated using assumptions that the Trustee has determined, having consulted with the Employers over the approach. Throughout this report "Employers" means all institutions that have a liability in the Scheme.

Further details of the way in which the technical provisions are calculated are set out in Appendix A.

3

Experience since last valuation

3.1 Summary of key inter-valuation experience

The last actuarial valuation was carried out with an effective date of 31 March 2008. Since the last valuation:

- The UK Government announced on 8 July 2010 that statutory pension increases or revaluations would be based on the Consumer Prices Index measure of price inflation from 2011, rather than the Retail Prices Index measure of price inflation. Increases in benefits under the Scheme Rules are made on broadly the same basis as statutory increases to official pensions.

In addition, since the last valuation extensive discussions and negotiations in relation to the Scheme benefits have taken place and, in May 2011, a number of changes to the benefits provided by the Scheme were agreed to come into force on 1 October 2011. The changes agreed include:

- The Scheme benefits for new entrants, other than in specific, limited circumstances, are now provided on a Career Revalued Benefits basis rather than a Final Salary basis. This change has created two sections of the Scheme, the Final Salary (FS) Section and the Career Revalued Benefits (CRB) Section.
- The Normal Retirement Age was increased for future service and new entrants, to age 65.
- A Flexible Retirement option was introduced
- Member contributions increased to 7.5% p.a. for FS Section members and 6.5% p.a. for CRB Section members
- Cost sharing was introduced such that, should the total contribution level exceed 23.5% of Salaries per annum, the Employers will pay additional contributions to fund 65% of the excess over 23.5% and members would pay the remaining 35%.
- Increases to pensions in payment or deferment have been capped in so far as derived from service after 30 September 2011. USS will match increases in official pensions for the first 5%. If official pensions increase by more than 5% then USS will pay half of the difference up to a maximum increase of 10%.

The average Salary increase for the Scheme members who were in service for the whole of the inter-valuation period was 6.6% per annum.

Pensions in payment (in excess of Guaranteed Minimum Pensions (GMPs)) were increased as guaranteed under the Scheme as follows:

- April 2008 3.9%
- April 2009 5.0%
- April 2010 0.0%
- April 2011 3.1%

Over the inter-valuation period, the investment return on the Scheme's assets has been 9.9% (3.2% per annum).

The table summarises the contributions paid over the inter-valuation period. These figures are from the audited accounts and are in line with the rates agreed at the last actuarial valuation.

Date	Employer contributions	Member contributions
31 March 2008 to 30 September 2009	14.0% of salaries	6.35% of salaries
1 October 2009 to 31 March 2011	16.0% of salaries	6.35% of salaries

3.2 Reasons for the change in funding position since the last actuarial valuation

As noted in 2.1, the surplus at the last valuation date was £707.3 million. The table below sets out the main reasons for the change in the surplus between 31 March 2008 and 31 March 2011.

	£ bn
(Shortfall) / Surplus at 31 March 2008	**0.7**
Expected interest on surplus	0.1
Lower than expected investment returns	(2.9)
Lower than expected general pay growth	0.8
Higher than expected incremental salary increases	(1.9)
Lower than expected pension increases	0.2
Change in underlying financial conditions	
0.1% higher inflation	(0.3)
Impact of the move to CPI	2.9
Impact of allowing for improved life expectancy	(0.6)
Change in other assumptions	
Proportions married	0.2
Short-term GPG of RPI +0.25% for 3 years	0.4
Change in discount rate	(1.8)
Miscellaneous	(0.7)
(Shortfall) / Surplus at 31 March 2011	**(2.9)**

4

Projected future funding level and volatility

4.1 Projected funding position at next actuarial valuation

As part of this valuation, the Trustee has determined, after consultation with Universities UK, a recovery plan to pay off the shortfall by 31 March 2021. The next actuarial valuation will take place with an effective date no later than 31 March 2014. If experience up to that date is in line with the assumptions made for this current actuarial valuation and contributions are paid at the determined rates or amounts, the shortfall at 31 March 2014 would be about £2.2 billion, equivalent to a funding level of 95%.

4.2 Material risks faced by the Scheme

The Scheme is subject to some potentially material risks that are, to an extent, outside the Trustee's control, but could affect the funding level. Any material worsening of the funding level will mean more contributions are needed (either at an increased rate or at the same rate over a longer period) to be able to provide the benefits built up in the Scheme – unless experience subsequently acts in other ways to improve the funding level. Examples of such risks, and how the Trustee manages them, are:

- If the Employers become unable to pay contributions or to make good deficits in the future, the Scheme's assets will be lower than expected and the funding level will be worse than expected. The Trustee monitors the financial strength of the Employers.
- If future investment returns on assets are lower than assumed in the valuation, the Scheme's assets will be lower, and the funding level worse, than expected. It is likely that an increase in contributions would be required, or alternatively the Employers may seek to reduce the value of the benefits being built up. The Trustee has a process in place to monitor investment performance regularly and it reviews the Scheme's investment strategy alongside each actuarial valuation. It has taken the following action to mitigate the risk:
  - The investment strategy takes the make up of the Scheme's membership into account (for example, cashflow generation, by way of contributions and dividend income, is sufficient to obviate the need for forced selling of investments to pay current benefits due).

If gilt yields change such that the liability values increase by more (or decrease by less) than the assets, the funding level against the technical provisions and on the wind-up basis (see section 7) will be worse than expected. The Trustee has taken the following action to mitigate the risk:

- A proportion of the Scheme's assets is invested in gilts, which will help to offset some of the risk associated with movements in gilt yields.

- If improvements in life expectancy are greater than assumed, the cost of benefits will increase because members are living longer than expected. This will mean the funding level will be worse than expected.
  - The Trustee manages this risk by regularly reviewing the Scheme's experience and ensuring that the assumptions (including assumptions as to future rates of improvement in longevity) it makes about members' life expectancy take the most recent Scheme-specific information and research available into account.
- If pay growth, in particular incremental pay growth, is greater than assumed, the cost of benefits will increase
  - The switch to Career Revalued Benefits for new entrants will gradually cap this risk.
- If members make decisions about their options which increase the Scheme's liabilities, the funding level will be worse than expected.
  - The Trustee manages this risk by regularly reviewing the Scheme's experience and ensuring that the treatment of member options remains appropriate with prudent costing assumptions.

4.3 Sensitivity of funding position to changes in key assumptions

The value placed on the Scheme's liabilities is critically dependent on the assumptions used to carry out the calculations. If future experience differs from the assumptions the Trustee has used after consulting with the Employers, then the projected future funding level will be different from the level described above in 4.1.

Date	Change in shortfall at 31 March 2011 (£bn)
Investment return is 0.25% lower than assumed	+1.6
The gap between RPI and CPI narrowed by 0.25%	+1.0
Salary growth (GPG) is 0.25% higher than assumed	+0.6
Members live one year longer than assumed	+0.8
Equity markets in isolation fall by 25%	+4.6

To illustrate how sensitive the funding level is to experience being different from assumed, the table on the left shows how the valuation results at 31 March 2011 would have differed given indicative changes in the key assumptions. An equivalent change in the assumption in the opposite direction would decrease the shortfall by a similar amount.

5

Contribution requirements

5.1 Future service contributions

The valuation also looks at the cost of the benefits that will be built up over the three years following the valuation date. A summary of the assumptions used is provided in Appendix A.

The table below gives a breakdown of the future service cost for both Sections of the Scheme at 31 March 2011 and also shows the cost at 31 March 2008 for comparison.

	FS Section % of Salaries		CRB Section % of Salaries	
	31 March 2011	**31 March 2008**	**31 March 2011**	**31 March 2008**
Total normal cost of pension benefits (including life assurance costs)	19.90% p.a.	22.05% p.a.	11.30% p.a.	n/a
Allowance for expenses	0.40% p.a.	0.30% p.a.	0.40% p.a.	n/a
Less members' contributions	(7.50%) p.a.	(6.35%) p.a.	(6.50%) p.a.	n/a
Implied Employer future service contribution rate	12.80% p.a.	16.00% p.a.	5.20% p.a.	n/a

As described above, following the closure of the FS Section of the Scheme to new entrants with effect from 1 October 2011, new joiners to the Scheme post 1 October 2011 will accrue benefits in the CRB Section. The cost of future benefits earned by members in the CRB Section is expected to differ from the cost of future benefits earned by members in the FS section, however the Trustee has set a single blended/combined rate of contribution to cover the cost of future accrual.

It will take a number of years before the CRB Section of the Scheme has sufficient members to enable their data to be analysed and an appropriate contribution rate for this Section of the Scheme to be calculated. For the purposes of the 31 March 2011 valuation, the Trustee has assumed that new entrants to the CRB Section will join the Scheme at an average age of 37. This assumption is key to the calculation of the future service contribution rate for the CRB Section, shown in the table on the previous page.

In practice a blended rate of contribution will be levied across the total active member payroll, based on a global assumption that CRB members join the Scheme uniformly over time at a rate equating to 5% of active payroll per annum in real terms.

In the first year (31 March 2011 to 31 March 2012) this blended Employer rate amounts to 20.1% p.a. of salary less members' contributions.

5.2 Correcting the shortfall

The Trustee has determined (after consultation with the Employers) a plan to pay off the shortfall of £2,910.2 million which requires the Employers to make the following payments.

Periods up to 31 March 2017

The Employers' deficit contributions in the first six years of the recovery plan will amount to 16% p.a. of salaries less the blended Employer future service cost of accrual, giving rise to deficit contributions of 3.4% of salaries for the period 31 March 2011 to 31 March 2012.

The deficit recovery plan has been put together on the basis that the above deficit contribution of 3.4% is paid **each** year for the first six years even though, on the assumptions made, the actual blended cost of accrual will reduce (and therefore the Employers' deficit contributions increase) each year as the CRB Section population grows.

Periods after 31 March 2017 until 31 March 2021

The Employers will pay an additional 2% of salaries (in excess of the blended Employer future service cost of accruals).

Based on the data, models and assumptions used by the Trustee for the purposes of the 31 March 2011 actuarial valuation, the estimated blended joint member/Employer future service rates are expected to be approximately:

Date	Year	Contribution rate
31/3/2011 – 31/3/2012	1	20.1%
31/3/2012 – 31/3/2013	2	19.9%
31/3/2013 – 31/3/2014	3	19.6%
31/3/2014 – 31/3/2015	4	19.3%
31/3/2015 – 31/3/2016	5	19.0%
31/3/2016 – 31/3/2017	6	18.7%
31/3/2017 – 31/3/2018	7	18.4%
31/3/2018 – 31/3/2019	8	18.1%
31/3/2019 – 31/3/2020	9	17.8%
31/3/2020 – 31/3/2021	10	17.5%

This table will be updated/re-calibrated at each triennial valuation, taking account of actual experience to that point and contributions then agreed for the next triennium rather than being reassessed every year.

6

Key results of the scheme funding assessment – historic gilts basis

The table on the right compares the assets and liabilities (on the Trustee's secondary funding objective; the historic gilts basis) of the Scheme at 31 March 2011. Figures are also shown for the last valuation as at 31 March 2008 for comparison.

The table shows that at 31 March 2011 there was a shortfall of £15,160.4 million. An alternative way of expressing the position is that the Scheme's assets were sufficient to cover 68% of its liabilities.

At the previous valuation at 31 March 2008 the shortfall on the historic gilts basis was £11,776.6 million, equivalent to a funding level of 71%.

	£m	
	31 March 2011	31 March 2008
Total assets	32,433.5	28,842.6
Liabilities:		
Active members	26,743.9	23,171.7
Deferred pensioners	4,049.7	3,548.9
Pensioners	16,800.3	13,898.6
Total liabilities	47,593.9	40,619.2
Past service surplus / (shortfall)	(15,160.4)	(11,776.6)
Funding level	68%	71%

The assumptions used to calculate the Scheme's liabilities on the historic funding basis differ from those used to calculate the technical provisions liabilities in the following way:

- The historic gilts basis makes no allowance for expected future asset outperformance over the gilt yield, therefore the discount rate used to calculate the past and future service liabilities as at 31 March 2011 is 4.4% p.a. rather than the 6.1% p.a. shown in Appendix A.

All other assumptions used to calculate the liabilities on the historic gilts basis are the same as those set out in Appendix A.

7

Wind-up position

In extreme circumstances if all of the Employers were to become insolvent or decide not to support the Scheme, the Trustee could decide to wind up the Scheme and secure the benefits built up with an insurance company. Insurance companies use different assumptions to the Trustee when calculating the value of the Scheme's liabilities and the price they would charge to provide the benefits

The table on the right shows an estimate of the funding level of the Scheme at 31 March 2011 assuming all benefits were bought out with an insurer. The wind-up position at 31 March 2008 is also shown for comparison. The wind-up position is shown for information only, and does not mean that the Trustee or Employers are considering winding up the Scheme.

	£ m	
	31 March 2011	**31 March 2008**
Total assets	32,433.5	28,842.6
Liabilities:		
Active members	31,228.6	18,932.1
Deferred pensioners	5,820.5	3,500.8
Pensioners	18,150.3	13,471.7
Expenses	2,077.0	718.1
Total liabilities	57,276.4	36,622.7
Past service surplus / (shortfall)	(24,842.9)	(7,780.1)
Funding level	57%	79%

As the table shows, the Scheme would have had an estimated shortfall of £24,842.9 million if it had been wound up at 31 March 2011. This means that, on average, members could only expect to receive 57% of the benefits earned to date (although the percentage coverage would differ between members depending on their age and when their benefit was earned).

In practice, if the Scheme was wound up due to the Employers becoming insolvent, the members may be eligible for compensation from the Pension Protection Fund (PPF) if the Scheme's assets were less than needed to buy that compensation from an insurance company. If this was the case, members could receive a lower proportion of the benefits they have earned to date.

If experience is in line with the assumptions and investment returns are as expected as per the recovery plan assumption, and contributions are paid at the agreed rates or amounts, the shortfall projected at 31 March 2014 on a wind-up basis would be about £27bn, equivalent to a funding level of 60%.

8

Pension Protection Fund (PPF) position

If all of the Scheme's participating Employers are insolvent, its members may be eligible for compensation from the Pension Protection Fund. Normally, a scheme's assets and liabilities would only transfer to the PPF if the assets were insufficient to buy out the benefits provided by the PPF. The compensation that the PPF could provide would be broadly 100% of the pension in payment for members over pension age and 90% of a capped amount of the pension built up for members under pension age. Under the current PPF provisions:

- Pensions in payment will be increased annually, at the lower of 2.5% and the change in the Consumer Prices Index (CPI), in respect of service after 5 April 1997 only. Pensions accrued before April 1997 are not increased.

- Benefits in deferment are revalued in line with the scheme's rules for any period between the member's exit and the scheme's entry into the PPF. Revaluation between the entry date and 30 March 2011 will be in line with increases in the RPI subject to a maximum of 5% per annum compounded over the revaluation period in respect of service pre-6 April 2009, and RPI subject to a maximum of 2.5% per annum for service post-5 April 2009. Revaluation between 31 March 2011 and the member's normal pension age will be as noted above for service before and after 5 April 2009, but using the Consumer Prices Index (CPI) rather than the RPI as the inflation index. Where scheme rules do not provide for revaluation in respect of a period of service, then no revaluation will be provided under the PPF in respect of that service.

- Spouses' pensions will be 50% of members' PPF compensation.

- The pensions of members aged less than their scheme's normal pension age when the scheme enters the PPF will be capped. The cap depends on the member's age when the pension is paid and is increased from time to time. For example, in 2011/12 the cap is £33,219 at age 65 – so, the maximum amount of compensation for members retiring at their normal pension age of 65 will be 90% of this, £29,897 per annum.

Based on the PPF benefits and the financial and demographic assumptions prescribed by the PPF, the Scheme is estimated to be 93% funded at 31 March 2011.

APPENDIX A

Assumptions

A.1. How the benefits are valued

In order to calculate the liabilities, the Trustee needs to make assumptions about various factors that affect the cost of the benefits provided by the Scheme – for example, how long members will live, or the future level of inflation. The table below explains the key assumptions being made in the valuation.

Assumption	Why it is important and how it impacts on the liabilities
Discount rate	The majority of benefits in a pension scheme are paid many years in the future. In the period before the benefits are paid, the Trustee invests the funds held by the Scheme with the aim of achieving a return on those funds. When calculating how much money is needed now to make these benefit payments, it is appropriate to make allowance for the investment return that is expected to be earned on these funds. This is known as "discounting". The higher the investment return achieved, the less money needs to be set aside now to pay for benefits. The calculation reflects this by placing a lower value on the liabilities if the "discount rate" is higher.
Inflation	Pensions in payment typically increase in line with price inflation, subject to a cap. Salary growth is also normally linked to price inflation. A higher inflation assumption will, all other things being equal, lead to a higher value being placed on the liabilities.
Salary growth	Pensions for active members are based on their salaries (each year for Career Revalued Benefit Section members / immediately before retirement for Final Salary Section members), so it is necessary to make an assumption about future salary growth. The higher this assumption, the higher the value placed on the liabilities for active members.
Life expectancy	Pensions are paid while the member (and potentially their spouse or partner) is alive. The longer people live, the greater is the cost of providing a pension. Allowing for longer life expectancy therefore increases the liabilities.

The liabilities of the Scheme are calculated projecting forward all of the future benefit cash flows and discounting them back to the effective date of the valuation, using these assumptions. For example, the liability for a pensioner with no spouse or partner is calculated by

estimating the amount of each pension payment he/she will receive in the future, multiplying by the probability that the member will be still be alive by the date of each payment, then discounting each payment back to the effective date of the valuation; and then summing up all of these discounted amounts. The liabilities for the whole Scheme are calculated by summing the liabilities for each of the individual members.

A.2. Assumptions used to calculate technical provisions

The tables below summarise the key assumptions used in the calculation of the technical provisions and those used for the 31 March 2008 actuarial valuation.

Financial assumptions	31 March 2011 Past Service	31 March 2011 Future Service	31 March 2008 Past Service	31 March 2008 Future Service
Discount rate	6.1% p.a.	6.1% p.a.	6.4% p.a.	6.1% p.a.
Price inflation (RPI)	3.4% p.a.	3.4% p.a.	3.3% p.a.	3.3% p.a.
Price inflation (CPI)	2.6% p.a.	2.6% p.a.	n/a	n/a
General Pay Growth (GPG)	4.4% p.a. plus short-term GPG at 3.65% p.a.	4.4% p.a. plus short-term GPG at 3.65% p.a.	4.3% p.a.	4.3% p.a.
Incremental salary increases	Scale +£0.85bn*	Scale	Scale + £1.35bn*	Scale
Pension increases	3.4% p.a. for the 3 years following the valuation then 2.6% p.a. thereafter	3.4% p.a. for the 3 years following the valuation then 2.6% p.a. thereafter	3.3% p.a.	3.3% p.a.

* The promotional salary increases are monitored on a regular basis. At the previous valuation a £1.35 billion reserve was built into the past service basis. We have retained the same predicted experience allowance at this valuation for promotional salary increases but we have reduced the extra reserve to £0.85 billion, reflecting changes in the membership profile.

Demographic assumptions	31 March 2011 Past Service	31 March 2011 Future Service	31 March 2008 Past Service	31 March 2008 Future Service
Retirement age (active members)	62	65	62	62
Mortality – base table	S1NA ["light"] year of birth tables adjusted down by one year for females		PA92 year of birth tables adjusted down by 1 year for males	
Mortality – future improvements:				
Males	CMI 2009 projections with a 1.25% p.a. long term rate		Medium cohort projections	
Females	CMI 2009 projections with a 1.25% p.a. long term rate		Medium cohort projections	
Ill health retirement:				
Males	31.4 % of LG 59/60 table for male lives		31.4 % of LG 59/60 table for male lives	
	Sample rates of ill health retirement (% retiring p.a.): Age 35 0.01 Age 45 0.06 Age 55 0.21		Sample rates of ill health retirement (% retiring p.a.): Age 35 0.01 Age 45 0.06 Age 55 0.21	
Females	20% of LG 59/60 table for female lives		20% of LG 59/60 table for female lives	
	Sample rates of ill health retirement (% retiring p.a.): Age 35 0.01 Age 45 0.08 Age 55 0.37		Sample rates of ill health retirement (% retiring p.a.): Age 35 0.01 Age 45 0.08 Age 55 0.37	

Demographic assumptions	**31 March 2011 Past Service**	**31 March 2011 Future Service**	**31 March 2008 Past Service**	**31 March 2008 Future Service**
Withdrawals:				
Males	270% of LG 59/60 table for male lives		270% of LG 59/60 table for male lives	
	Sample rates of withdrawal (% leaving p.a.): Age 25 14.42 Age 35 9.19 Age 45 3.79		Sample rates of withdrawal (% leaving p.a.): Age 25 14.42 Age 35 9.19 Age 45 3.79	
Females	113% of LG 59/60 table for female lives		113% of LG 59/60 table for female lives	
	Sample rates of withdrawal (% leaving p.a.): Age 25 19.28 Age 35 11.40 Age 45 3.83		Sample rates of withdrawal (% leaving p.a.): Age 25 19.28 Age 35 11.40 Age 45 3.83	

Demographic assumptions	31 March 2011 Past Service	31 March 2011 Future Service	31 March 2008 Past Service	31 March 2008 Future Service
Proportions married:				
Males	109% ONS 2008 tables for male lives		LG 59/60 for male lives	
	Sample proportions of members with an eligible spouse/partner at the time of retirement or earlier death: Age 25 10.90% Age 35 53.41% Age 45 69.76%		Sample proportions of members with an eligible spouse/partner at the time of retirement or earlier death: Age 25 34.00% Age 35 81.00% Age 45 92.00%	
Females	109% ONS 2008 tables for male lives		LG 59/60 for female lives	
	Sample proportions of members with an eligible spouse/partner at the time of retirement or earlier death: Age 25 10.90% Age 35 53.41% Age 45 69.76%		Sample proportions of members with an eligible spouse/partner at the time of retirement or earlier death: Age 25 56.00% Age 35 84.00% Age 45 93.00%	
Spouse's age	Surviving spouses/partners are 3 years younger than their deceased spouse/partner		Surviving spouses/partners are 3 years younger than their deceased spouse/partner	

The mortality assumptions used for the 31 March 2011 valuation result in the following life expectancies. This information may be useful to the Trustee when completing the annual scheme return.

	Cohort*	Period**
Life expectancy for a male aged 65 now	23.7	21.7
Life expectancy at 65 for a male aged 45 now	25.5	n/a
Life expectancy for a female aged 65 now	25.6	23.5
Life expectancy at 65 for a female aged 45 now	27.6	n/a

* This shows examples of the life expectancy being assumed (these include the assumed allowance for future improvements).
** This shows examples of life expectancy but excluding post valuation future improvements, that is using only the base table.

All the assumptions have been selected by the Trustee to reflect its funding objective, after consulting with the Employers and Unions. In setting the assumptions, the Trustee has assumed that the Scheme is ongoing (it is not in the process of being wound up). In particular, the assumptions allow for future salary increases for active members. The Trustee's stated funding objective (which has also been consulted on with the Employers and Unions) is to reach a position where the assets are sufficient to fully cover the technical provisions by 31 March 2021.

A.3. Assumptions used to calculate the wind-up position

The wind-up position looks at the Scheme's funding on the assumption that it had been discontinued on the valuation date and the benefits bought out with an insurance company. In doing this, it is assumed that no further benefits accrue, no further contributions are paid and active members are entitled to benefits on the basis they had left service on the valuation date. There is no allowance for any discretionary benefits being paid in the future.

The wind-up position has been estimated using Mercer's experience of recent buyout quotations and our understanding of the factors affecting this market. Detailed analysis of the reserves that would need to be held by an insurance company has not been carried out. Consideration has been given of the market terms for the financial instruments in which insurance companies would be expected to invest. An approximate allowance has been made for the reserves an insurance company would maintain to cover the risks involved and the statutory reserving requirements. The results are, therefore, only a guide to the wind-up position and should not be taken as a quotation. Market changes, both in interest rates and in supply and demand for buyout business, mean that if a buyout ultimately proceeds, actual quotations may differ.

The wind-up funding level is only an estimate since it is not based on an actual quotation. The true position could only be established by completing a buyout.

The tables below set out the assumptions used to assess the funding level in the event of the Scheme being wound up. The assumptions used at 31 March 2008 are also shown for comparison.

Financial assumptions	**31 March 2011**	**31 March 2008**
Discount rate:		
Non-pensioners - pre retirement	3.7% p.a.	4.8% p.a.
Non-pensioners - post retirement	4.5% p.a.	5.0% p.a.
Pensioners	4.5% p.a.	5.0% p.a.
RPI pension increases* - non-pensioner	3.9% p.a.	3.6% p.a.
RPI pension increases* - pensioner	3.6% p.a.	3.6% p.a.

Financial assumptions	31 March 2011	31 March 2008
Expense allowance	2% of liabilities plus 3% of the assets (in respect of the cost of transitioning assets plus Trustee and insurance company expenses)	2% of liabilities (in respect of Trustee and insurance company expenses)

* Currently it is unlikely to be possible to secure wind-up on CPI terms and so RPI increases have been assumed.

Demographic assumptions	31 March 2011	31 March 2008
Retirement (current active members)	62	62
Mortality – base table	S1NA ("Light") tables using year of birth and adjusted down by one year for females	PA92 tables using year of birth and adjusted by -1 year for males
Mortality – future improvements:	Medium cohort projections with 1.5% minimum improvement p.a. for males and females	Medium cohort projections with 1.5% minimum improvement p.a. for males and 1.0% minimum improvement p.a.for females
Proportion married	109% ONS 2008 tables for male lives	LG59/60, with a +3 age rating for females
Spouse's age	Surviving spouses/partners are 3 years younger than their deceased spouse/partner	Surviving spouses/partners are 3 years younger than their deceased spouse/partner

As the Trustee's current investment policy includes investment in different assets than would typically be held by an insurer, the wind-up position on a given date may be significantly different from the position estimated at the valuation date.

APPENDIX B

Summary membership data

The membership data is summarised in the table, with figures at the previous valuation shown for comparison.

Data in relation to members of the Scheme were supplied by USS. The accuracy of the data provided has been relied on. While reasonableness checks on the data have been carried out, they do not guarantee the completeness or the accuracy of the data. Consequently Mercer does not accept any liability in respect of its advice where it has relied on data that is incomplete or inaccurate.

* 3,658 actives were missing from the data taking the total number of actives to 139,905. The data in the table is in respect of the known active members only. The active liabilities were increased by 2.8% to allow for the missing members.

** The salary figures include actual salaries for part time members. Members with more than one post are included in the figures as number of appointments, rather than one member. Members who joined during the year have had their salary annualised.

	31 March 2011	31 March 2008
Active members		
Number	136,247*	130,450
Total Pensionable Salaries (£ p.a.)**	£5,742.1 million	£4,950.3 million
Average Pensionable Salary (£ p.a.)**	£42,145	£37,947
Average age	43.8	43.7
Average past service (years)	10.4	10.5
Deferred pensioners		
Number	91,048	76,104
Total deferred pensions revalued to valuation date (£ p.a.)	£162.8 million	£155.5 million
Average deferred pension (£ p.a.)	£1,788	£2,044
Average age	44.5	43.7
Pensioners		
Number	50,092	40,945
Total pensions payable (£ p.a.)	£906.7 million	£714.0million
Average pension (£ p.a.)	£18,100	£17,438
Average age	70.1	69.8
Dependents		
Number	9,462	8,057
Total pensions payable (£ p.a.)	£95.4 million	£76.9 million
Average pension (£ p.a.)	£10,085	£9,543
Average age	73.6	72.5
Children		
Number	987	894

APPENDIX C

Assets

The market value of the Scheme's assets (excluding Additional Voluntary Contributions (AVCs) which are separately invested) was £32,433.5 million on the valuation date.

The actual distribution of assets will vary over time due to changes in financial markets. The table also shows the distribution of assets at the valuation date.

The Trustees also hold additional voluntary contributions (AVCs), which are separately invested. These assets have been excluded from the market value shown as they exactly match the value of the benefits they cover.

The details of the assets at the valuation date and the financial transactions during the inter-valuation period have been obtained from the audited accounts for the Scheme.

	Investment Strategy	Actual market value of assets at 31 March 2011	
	%	£ m	%
Equities			
UK	58	7,153.6	22.1
Overseas		11,395.6	35.1
Bonds			
UK Fixed Interest - public sector	16	1,116.2	3.5
UK Fixed Interest - other		91.2	0.3
Overseas Bonds		2,768.4	8.5
Property	10	2,260.7	7.0
Alternatives	16	5,205.1	16.0
Cash deposits/Other	0	2,344.5	7.2
Net current assets/(liabilities)		98.2	0.3
Total	100	32,433.5	100.0

APPENDIX D

Benefit summary

The benefits valued are as set out in the Scheme Rules dated 1 May 2009 incorporating all Deeds of Amendment up to and including the Third Deed of Amendment dated 19 January 2011.

In particular, the valuation anticipates changes to benefits brought in with effect from October 2011 namely:

- The Scheme benefits for new entrants, other than in specific, limited circumstances, are now provided on a Career Revalued Benefits basis rather than a Final Salary basis.
- The Normal Retirement Age was increased for future service and new entrants, to age 65.
- A Flexible Retirement option was introduced
- Member contributions increased to 7.5% p.a. for FS Section members and 6.5% p.a. for CRB Section members
- Cost sharing was introduced such that, should the total contribution level exceed 23.5% of Salaries per annum, the Employers will pay additional contributions to fund 65% of the excess over 23.5% and members would pay the remaining 35%.
- Increases to pensions in payment or deferment have been capped in so far as derived from service after 30 September 2011. Increases are linked to increases in official pensions paid to public sector employees. USS will match increases in official pensions for the first 5%. If official pensions increase by more than 5% then USS will pay half of the difference up to a maximum increase of 10%.

The benefits that will emerge from money purchase AVCs paid by members have been excluded from the valuation, as have the corresponding assets, since the value of these liabilities is exactly matched by these assets.

UK and European law requires pension schemes to provide equal benefits to men and women in respect of service after 17 May 1990 (the date of the "Barber" judgement). The Department for Work and Pensions' view is that this includes any inequality arising from the GMP rules, however there is still uncertainty as to how schemes should equalise their benefits in respect of GMPs. The valuation makes no allowance for equalisation of these inequalities. It is consequently possible that additional funding will be required for equalisation once the law has been clarified.

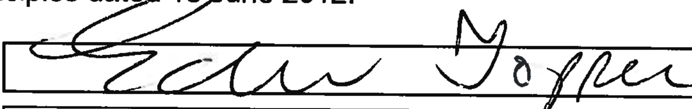
APPENDIX E

Certificate of technical provisions

Name of the Scheme	Universities Superannuation Scheme

Calculation of technical provisions

I certify that, in my opinion, the calculation of the Scheme's technical provisions as at 31 March 2011 is made in accordance with regulations under section 222 of the Pensions Act 2004. The calculation uses a method and assumptions determined by the Trustee of the Scheme and set out in the statement of funding principles dated 15 June 2012.

Signature	
Name	Edwin Topper
Date of signing	15 June 2012
Name of employer	Mercer Limited
Address	Belvedere 12 Booth Street Manchester M2 4 AW
Qualification	Fellow of the Institute and Faculty of Actuaries

Mercer Limited
Belvedere
12 Booth Street
Manchester
M2 4AW
+44 (0)161 832 5688

Mercer Limited is authorised and regulated by the Financial Services Authority
Registered in England No. 984275 Registered Office: 1 Tower Place West, Tower Place, London EC3R 5BU