



Report for UCU

A comparison of TPS with USS

with and without a salary threshold

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Introduction

This report has been prepared for the Universities and Colleges Union, on the instructions of Matt Waddup. We were asked to illustrate the benefits of the Universities Superannuation Scheme (USS) for university staff and school teachers. We were asked to illustrate a reduction to the current terms of the USS to allow for a defined benefit salary limit of zero i.e. no defined benefit (DB) pension accrual.

The salary threshold sets the divide between defined benefit and defined contribution provision: defined benefits being provided on salary less than the threshold and defined contributions on salary above the threshold.

We have also included results using the £55,000 salary threshold for comparison.

We have previously prepared comparisons of the USS with the TPS, see our reports:

- “A comparison of USS with TPS” dated 11 May 2017,
- “A comparison of TPS with reduced benefits in USS” dated 18 September 2017, and
- “A comparison of TPS with USS for school teachers” dated 8 November 2017.
- “A comparison of TPS with USS using different salary thresholds” dated 17 November 2017.

In this report, we have used the same selection of example members of university staff and school teachers from our report dated 17 November 2017. These are described in Appendix A.

Notes on our calculations

We have worked in real terms relative to CPI.

The sum of each member's contributions is net of income tax relief. Therefore the total contribution is the total deduction from take home pay. We calculated the tax relief due on each year's contribution, allowing for standard and higher rates of tax.

In calculating the total benefits paid, we assumed an average of 27 years life expectancy of the member and partner. We assumed all pensions were taxed at 20%, having first allowed for tax free cash to be taken.

The TPS provides cash by commutation of pension, using a factor of £12 cash for £1 pension given up, regardless of age or gender.

In our calculations, in order to make fair comparisons between the TPS and the USS with salary thresholds of zero and £55,000, we have calculated the lowest maximum amount of tax-free cash available in either the USS and the TPS. We have then assumed that this amount of tax-free cash is taken from both schemes.

Notwithstanding the fact that the headline design of the USS is annual accrual of 1/75 of salary pension plus 3/75 of salary cash, members have the option to exchange pension for more cash up to the HMRC limit, or to exchange the 3/75 cash for additional pension. We have allowed for the potential to exchange pension for additional cash in our calculations of USS benefits.

We further assumed that the contribution rates to the Defined Contribution (DC) pot on salary above any salary threshold are at 8% from the member and 12% from the employer.

In the USS, we have assumed that, in the first instance, cash is taken from the DC pot. On one hand, if the DC pot is not large enough to provide all the tax-free cash, then some DB pension will be commuted at the member's age-related commutation factor. On the other hand, if the DC pot is large enough to provide the maximum amount of tax-free cash, then the balance of the DC pot will be used to buy an annuity. We have assumed an annuity rate following the prescribed assumptions for a Statutory Money Purchase Illustration (SMPI) of an index-linked pension.

Results of our calculations

We have given the results of our calculations in charts and in tables of data. The 6 example members of university staff and 6 example members of school teachers are labelled in the charts, and summarised opposite.

The following conclusions can be drawn from the graphs and tables on subsequent pages:

- In all cases, the benefits of TPS exceed the benefits of USS
- In most cases, the member's contributions to TPS exceed the contributions to USS.
- In all cases, the extra benefits of TPS (for a member of average life expectancy) more than exceed the extra member contributions.

Example member calculations

University staff

Member	Brief description	Years' service
M1	Researcher, works point 30 to 46	20
M4	Academic lecturer, works point 37 to 43	30
M6	Academic, works point 37 to 50	30
M7	Professor, works point 37 to 48 then band C	20
M10	Professor, works point 37 to 48 then band C to A	30
M12	Academic lecturer, works point 37 to 41, leaves early	5

School teachers

Member	Brief description	Start age
1	Classroom teacher, full-time, sticks at M6	25
4	Classroom teacher, 60% part-time, sticks at M6	41
5	Leadership Group, full-time, sticks at L21 (Group 2)	25
7	Upper tier, full-time, sticks at U3	25
10	Upper tier, full-time, sticks at U3, inner London	25
12	Classroom teacher, full-time, sticks at M6, 10-year career break	25

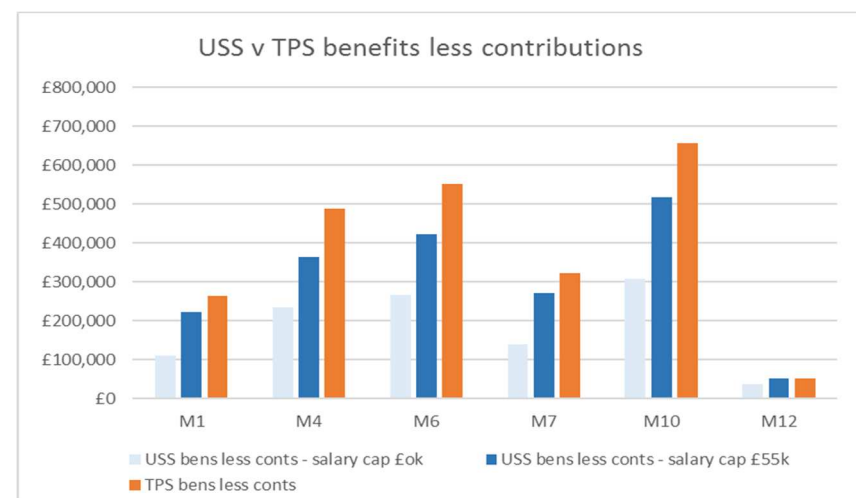
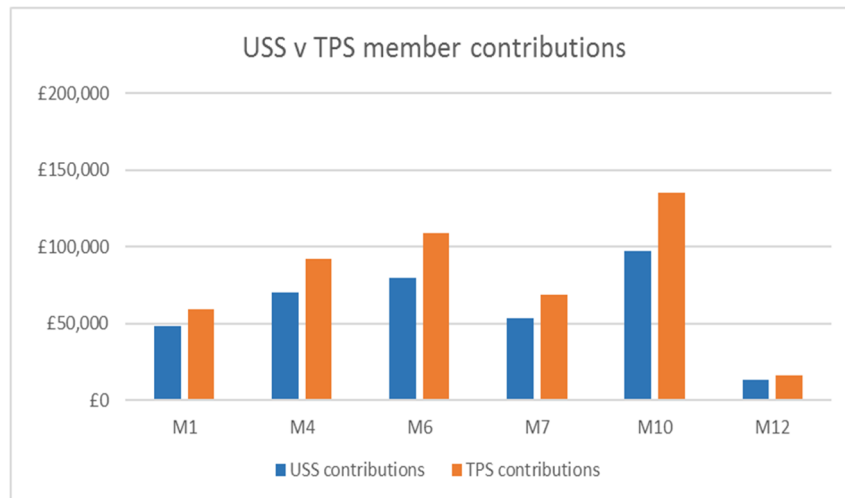
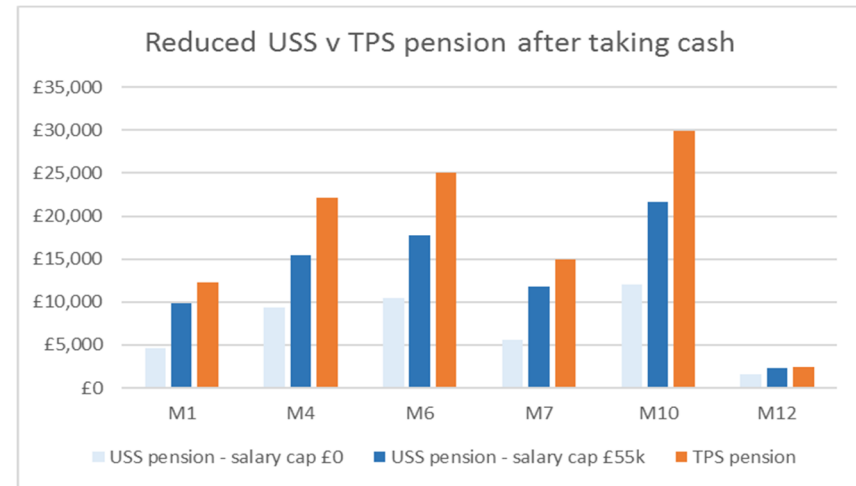
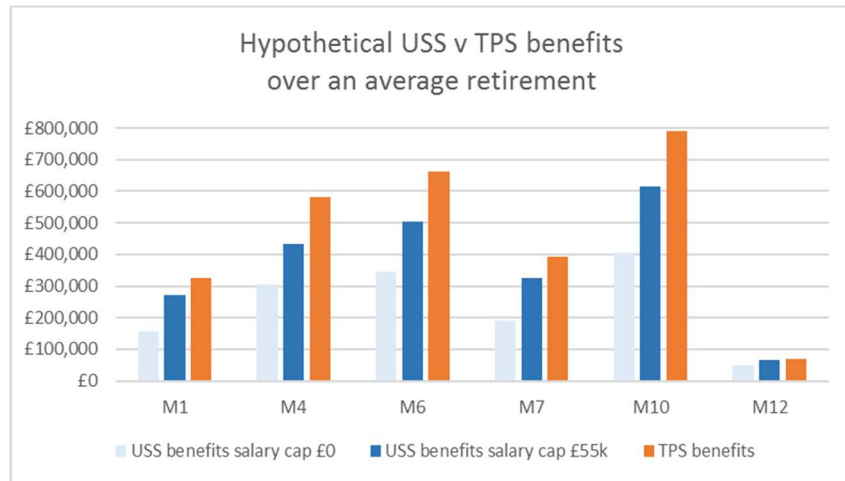
Please note that the school teacher pay ranges have been taken directly from the NASUWT website, as instructed by Christine Haswell in her e-mail dated 19 October 2017.

The following page contains graphs comparing the benefits and contributions for example members of university staff and school teachers from both USS and TPS.

The figures used to create the graphs, providing more detail on each specific example member can be found in tables on the subsequent pages.

It is worth noting that the contributions graph is the same as in previous reports as member contributions in the USS and TPS are unchanged.

University staff



Member M1			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£58,200	£58,200	£58,200
Pension	£4,600	£9,800	£12,300
Benefits received	£158,000	£270,000	£324,000
Contributions paid	£48,000	£48,000	£59,000
Difference	£110,000	£222,000	£265,000

Member M6			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£118,600	£118,600	£118,600
Pension	£10,500	£17,800	£25,100
Benefits received	£346,000	£503,000	£662,000
Contributions paid	£80,000	£80,000	£109,000
Difference	£266,000	£423,000	£553,000

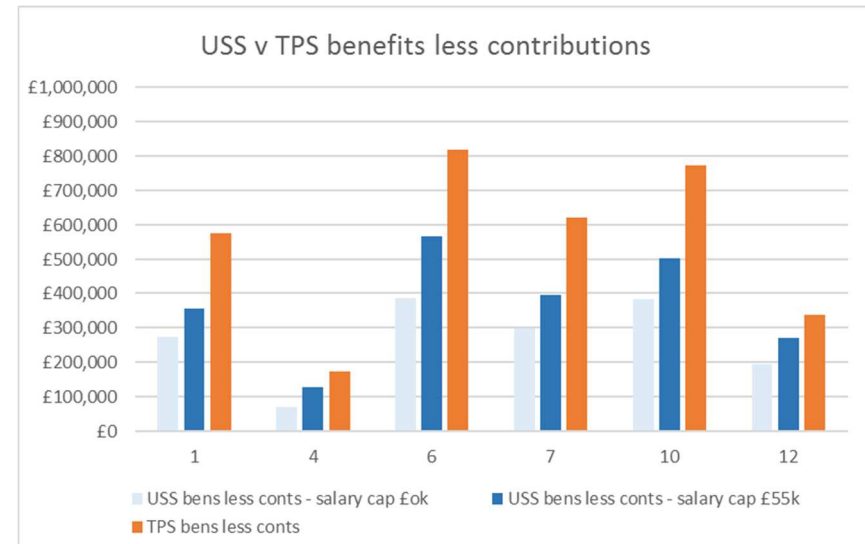
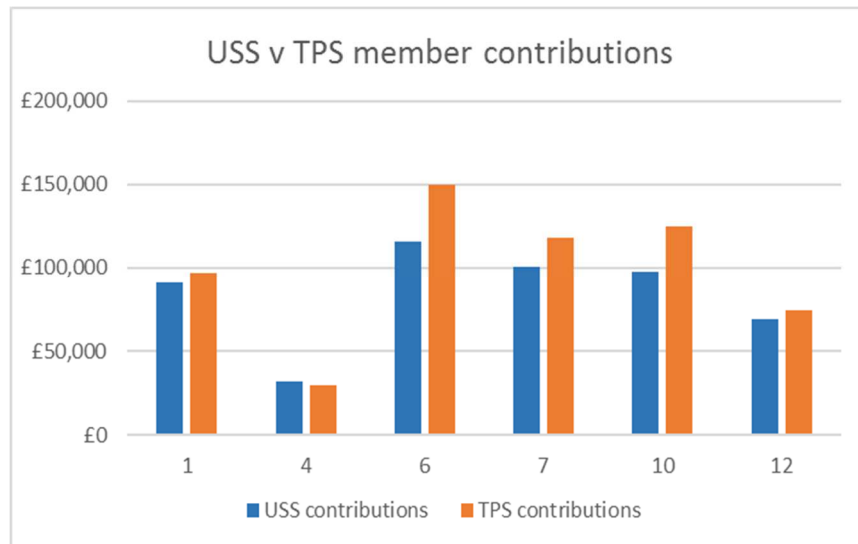
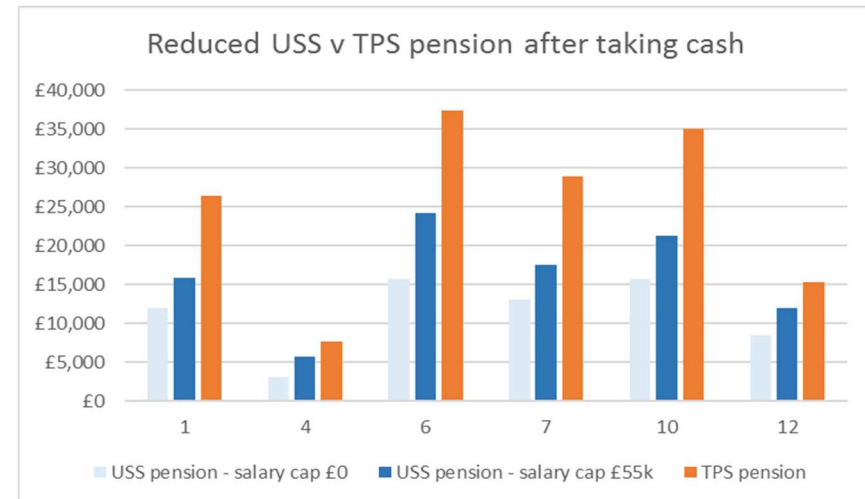
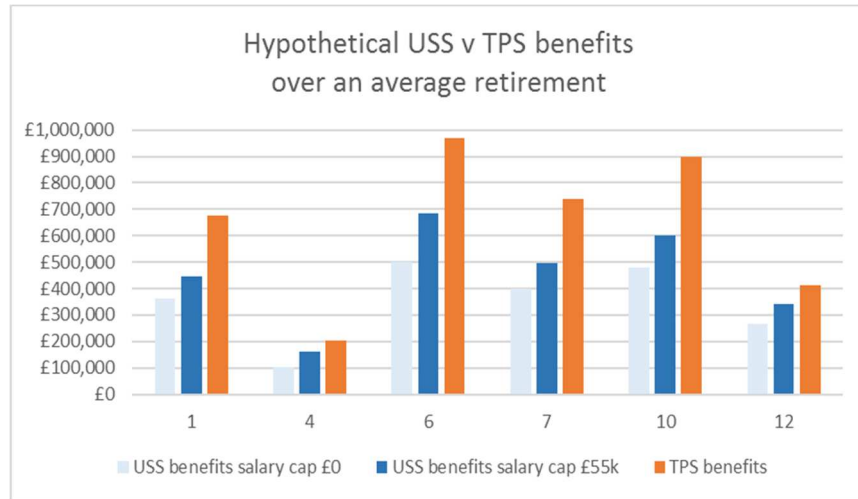
Member M10			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£144,800	£144,800	£144,800
Pension	£12,100	£21,700	£29,900
Benefits received	£406,000	£614,000	£791,000
Contributions paid	£97,000	£97,000	£135,000
Difference	£309,000	£517,000	£656,000

Member M4			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£102,400	£102,400	£102,400
Pension	£9,400	£15,400	£22,100
Benefits received	£305,000	£434,000	£580,000
Contributions paid	£70,000	£70,000	£92,000
Difference	£235,000	£364,000	£488,000

Member M7			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£70,500	£70,500	£70,500
Pension	£5,600	£11,800	£14,900
Benefits received	£192,000	£325,000	£392,000
Contributions paid	£53,000	£53,000	£69,000
Difference	£139,000	£272,000	£323,000

Member M12			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£15,600	£15,600	£15,600
Pension	£1,600	£2,300	£2,500
Benefits received	£50,000	£66,000	£69,000
Contributions paid	£13,000	£13,000	£16,000
Difference	£37,000	£53,000	£53,000

School teachers



Member 1			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£105,300	£105,300	£105,300
Pension	£12,000	£15,800	£26,400
Benefits received	£364,000	£446,000	£675,000
Contributions paid	£91,000	£91,000	£97,000
Difference	£273,000	£355,000	£578,000

Member 5			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£150,800	£150,800	£150,800
Pension	£15,200	£22,600	£35,400
Benefits received	£478,000	£639,000	£916,000
Contributions paid	£108,000	£108,000	£139,000
Difference	£370,000	£531,000	£777,000

Member 10			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£141,700	£141,700	£141,700
Pension	£15,700	£21,300	£35,000
Benefits received	£481,000	£601,000	£898,000
Contributions paid	£98,000	£98,000	£125,000
Difference	£383,000	£503,000	£773,000

Member 4			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£37,800	£37,800	£37,800
Pension	£3,000	£5,700	£7,700
Benefits received	£102,000	£160,000	£204,000
Contributions paid	£32,000	£32,000	£30,000
Difference	£70,000	£128,000	£174,000

Member 7			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£116,800	£116,800	£116,800
Pension	£13,000	£17,500	£28,900
Benefits received	£398,000	£495,000	£741,000
Contributions paid	£101,000	£101,000	£118,000
Difference	£297,000	£394,000	£623,000

Member 12			
Scheme	USS – zero cap	USS - £55k cap	TPS
Tax free cash	£80,200	£80,200	£80,200
Pension	£8,500	£12,000	£15,300
Benefits received	£265,000	£340,000	£412,000
Contributions paid	£69,000	£69,000	£74,000
Difference	£196,000	£271,000	£338,000

Comparing pension amounts within the USS for members with past service

In addition to the above, Matt Waddup also asked us to produce further examples for members who have past service in the USS. The charts and tables on the following page show the impact of reducing the salary threshold to zero from £55,000 for three more example university staff and three more example school teachers. Further details of these members beyond the tables opposite are in the Appendix.

The charts show annual pension amounts from State Pension Age, split by final salary section (which closed to future accrual with effect from 1 April 2016), CARE pension (which for the example members chosen, started with effect from 1 April 2016), and DC pension. Like the calculations above, we have assumed an annuity rate following the prescribed assumptions for a SMPI of an index-linked pension.

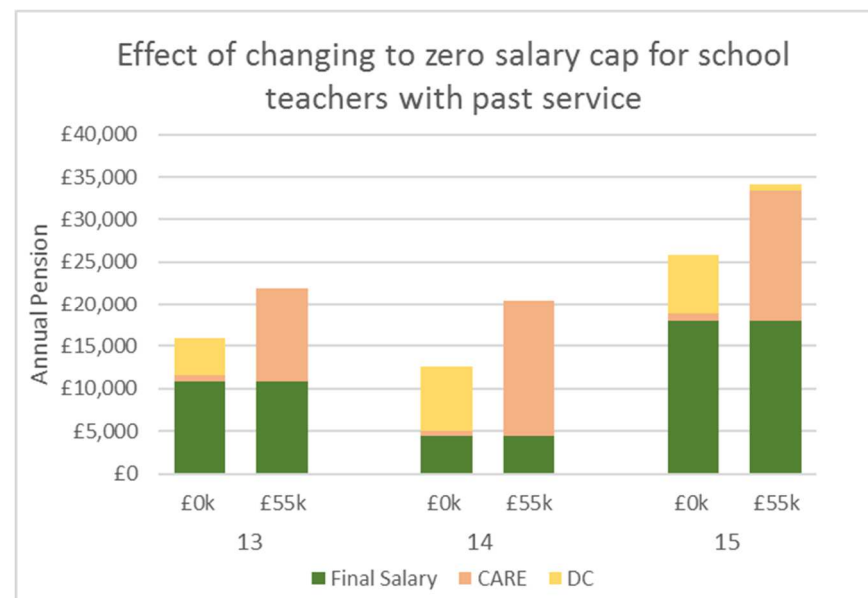
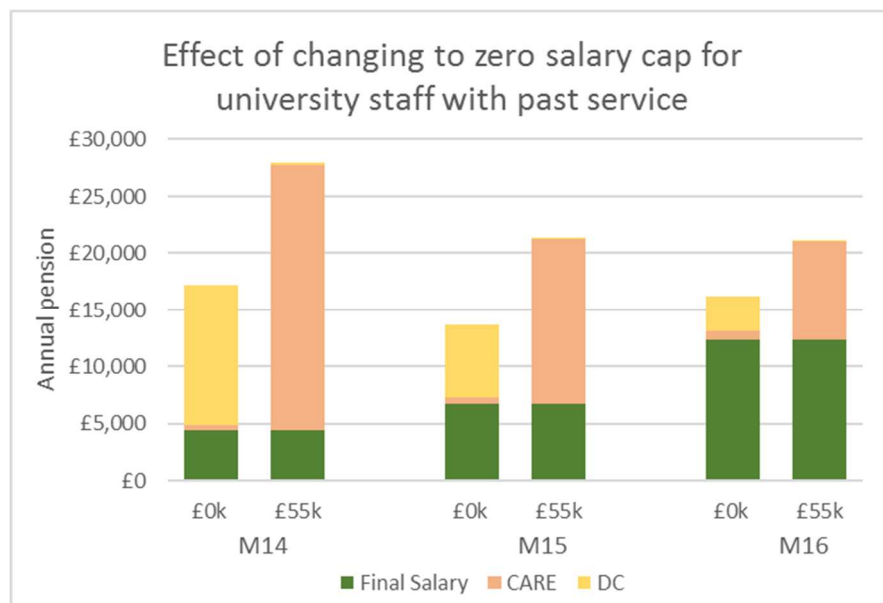
It is noticeable in the numbers that the older the member, the worse the disparity between the USS defined benefits and the expected outcome from defined contributions. As well as being expected to be worse, the defined contribution pension outcome is also very uncertain.

University staff

Member	Brief description	Years' service
M14	Researcher, works point 31 to 51, 10 years' past service	30
M15	Researcher, works point 31 to 51, 15 years' past service	20
M16	Academic lecturer, works point 41 to 51, 20 years' past service	10

School teachers

Member	Brief description	Start age
13	Classroom teacher, full-time, 20 years' past service, sticks at U3	50
14	Classroom teacher, full-time, 10 years' past service, sticks at U3	41
15	Headteacher, full-time, 25 years' past service, sticks at L35 (Group 6 for Headteachers)	50



Member	Scheme	USS – zero cap	USS - £55k cap
M14	Final Salary	£4,400	£4,400
	CARE	£500	£23,300
	DC	£12,300	£300
M15	Final Salary	£6,800	£6,800
	CARE	£500	£14,500
	DC	£6,400	£20
M16	Final Salary	£12,400	£12,400
	CARE	£700	£8,600
	DC	£3,100	£20

Member	Scheme	USS – zero cap	USS - £55k cap
13	Final Salary	£10,900	£10,900
	CARE	£600	£11,000
	DC	£4,500	£0
14	Final Salary	£4,500	£4,500
	CARE	£500	£16,000
	DC	£7,600	£0
15	Final Salary	£18,000	£18,000
	CARE	£800	£15,400
	DC	£7,100	£700

The numbers and graphs on the previous page compare pension amounts assuming no cash is taken. For each member, the tables below show:

- the amount of pension before cash is taken;
- the amount of tax-free cash if it were to be taken, along with a reduced pension after cash; and
- the total value of the benefits received.

University staff

Member M14		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£17,200	£28,000
Tax free cash	£132,600	£132,600
Pension after cash	£13,800	£19,900
Benefits received	£431,000	£562,000

Member M15		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£13,700	£21,320
Tax free cash	£97,300	£97,300
Pension after cash	£11,200	£15,300
Benefits received	£339,000	£427,000

Member M16		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£16,200	£21,020
Tax free cash	£95,000	£95,000
Pension after cash	£13,700	£15,300
Benefits received	£391,000	£426,000

School teachers

Member 13		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£16,000	£21,900
Tax free cash	£101,400	£101,400
Pension after cash	£13,400	£15,600
Benefits received	£391,000	£438,000

Member 14		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£12,600	£20,500
Tax free cash	£96,500	£96,500
Pension after cash	£10,200	£14,500
Benefits received	£318,000	£409,000

Member 15		
Scheme	USS – zero cap	USS - £55k cap
Pension before cash	£25,900	£34,100
Tax free cash	£162,600	£162,600
Pension after cash	£21,700	£25,100
Benefits received	£631,000	£704,000

Yours faithfully



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Appendix A: Example members

University staff

Member 1

Researcher, academic and academic related staff

Age at joining: 47
 State pension age: 67
 Service: 20 years
 Pay progression: Join at spine point 30, reach spine point 48 and remain there

Member 4

Academic lecturer

Age at joining: 38
 State pension age: 68
 Service: 30 years
 Pay progression: Join at spine point 37, reach spine point 43 and remain there

Member 6

Academic

Age at joining: 38
 State pension age: 68
 Service: 30 years
 Pay progression: Join at spine point 37, reach spine point 50 and remain there

Member 7

Professor

Age at joining: 47
 State pension age: 67
 Service: 20 years
 Pay progression: Join at spine point 37, reach spine point 48 for 5 years, Prof C lower quartile £62,843 for 5 years, Prof C upper quartile £69,143 for remaining service

Member 10

Professor

Age at joining: 38
 State pension age: 68
 Service: 30 years
 Pay progression: Join at spine point 37, reach spine point 48 Prof C lower quartile £62,843 for 5 years, Prof C upper quartile £69,143 for 5 years Prof B lower quartile £72,500 for 2 years, Prof B upper quartile £88,968 for 2 years Prof A lower quartile £88,968 for 1 year, Prof A upper quartile £110,217 for remaining service

Member 12

Academic lecturer

Age at joining: 47

State pension age: 67

Service: 5 years

Pay progression: Join at spine point 37,
reach spine point 41 then leave*Member 14*

Researcher

Current age: 38

State pension age: 68

Past service: 10 years

Future service: 30 years

Pay progression: Currently at spine point 31,
reach spine point 51 and remain there*Member 15*

Researcher

Current age: 47

State pension age: 67

Past service: 15 years

Future service: 20 years

Pay progression: Currently at spine point 31,
reach spine point 51*Member 16*

Academic lecturer

Current age: 56

State pension age: 66

Past service: 20 years

Future service: 10 years

Pay progression: Currently at spine point 41,
reach spine point 51

School teachers*Member 1*

Classroom teacher

Age at joining: 25

State pension age: 68

Service: 43 years

Pay progression: Join at spine point M1, reach spine point M6 and remain there

Member 4

Classroom teacher, part-time is assumed to be 60% of full time hours

Age at joining: 41

State pension age: 67

Service: 26 years

Pay progression: Join at spine point M1, reach spine point M6 and remain there

Member 5

Leader

Age at joining: 25

State pension age: 68

Service: 43 years

Pay progression: Join at classroom teacher spine point M1, reach spine point M6
At age 35, join Upper Pay range at spine point U1, reach spine point U3
At age 45, join Leadership Group on spine point L8 (Group 2 on Headteacher scale), reach spine point L21 and remain there.*Member 7*

Classroom teacher, upper tier

Age at joining: 25

State pension age: 68

Service: 43 years

Pay progression: Join at classroom teacher spine point M1, reach spine point M6
At age 35, join Upper Pay range at spine point U1, reach spine point U3 and remain there

Member 10

Classroom teacher, upper tier, inner London pay-scale

Age at joining: 25
 State pension age: 68
 Service: 43 years
 Pay progression: Join at classroom teacher spine point M1 for Inner London, reach spine point M6
 At age 35, join Upper Pay range at spine point U1 for Inner London, reach spine point U3 and remain there

Member 12

Classroom teacher, 10-year career break

Age at joining: 25
 State pension age: 68
 Service: 33 years
 Pay progression: Join at spine point M1, reach spine point M6
 At age 35, take 10-year career break, then return at spine point M6 and remain there.
 By taking a career break of more than 5 years, member loses 1.6% pa additional revaluation rate above CPI for first period of service in TPS

Member 13

Classroom teacher, upper tier

Current age: 50
 State pension age: 67
 Past service: 20 years
 Future service: 17 years
 Pay progression: Remain at spine point U3

Member 14

Classroom teacher, upper tier

Current age: 41
 State pension age: 67
 Past service: 10 years
 Service: 43 years
 Pay progression: Classroom teacher currently at spine point M6
 At age 46, join Upper Pay range at spine point U1, reach spine point U3 and remain there

Member 15

Headteacher, upper tier

Age at joining: 50
 State pension age: 67
 Past service: 25 years
 Service: 43 years
 Pay progression: Headteacher at spine point L11, reach spine point L27