

UUK

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Modelling of UUK's proposed USS benefit changes

Introduction

This paper sets out the results of our initial modelling of UUK's proposed benefit changes through the agreed seven example member scenarios. This modelling aims to provide balanced information to employers in advance of more detailed information to be delivered as appropriate following further consideration of the detail of proposed changes to the USS benefit design. In practice benefits for individual members could be higher or lower than the examples provided in this note.

UUK change proposal

The key proposals are:

- Move threshold down from £55,550 to zero, so that future accrual benefits are DC.
- Remove 1% employer match, but increase employer DC contribution from 12% to a proposed 13.25%.
- Death and incapacity benefits similar to now.
- Maintain employer subsidy for investment management expenses.

Comparison with typical DC pension schemes

The average default employer contribution rate for the largest DC schemes (DC schemes with 5,000+ members and funds in excess of £500M) is 7% based on the 2017 Aon Hewitt DC scheme survey.

For the same group of schemes the average maximum employer contribution available based on a contribution matching design is 11.1%. This requires employees to contribute an extra 3.1% of salary on average in addition to the default employee contribution rate.

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Notes on the example member scenarios

Examples have been selected for each salary band to cover the majority of members plus an example new joiner.

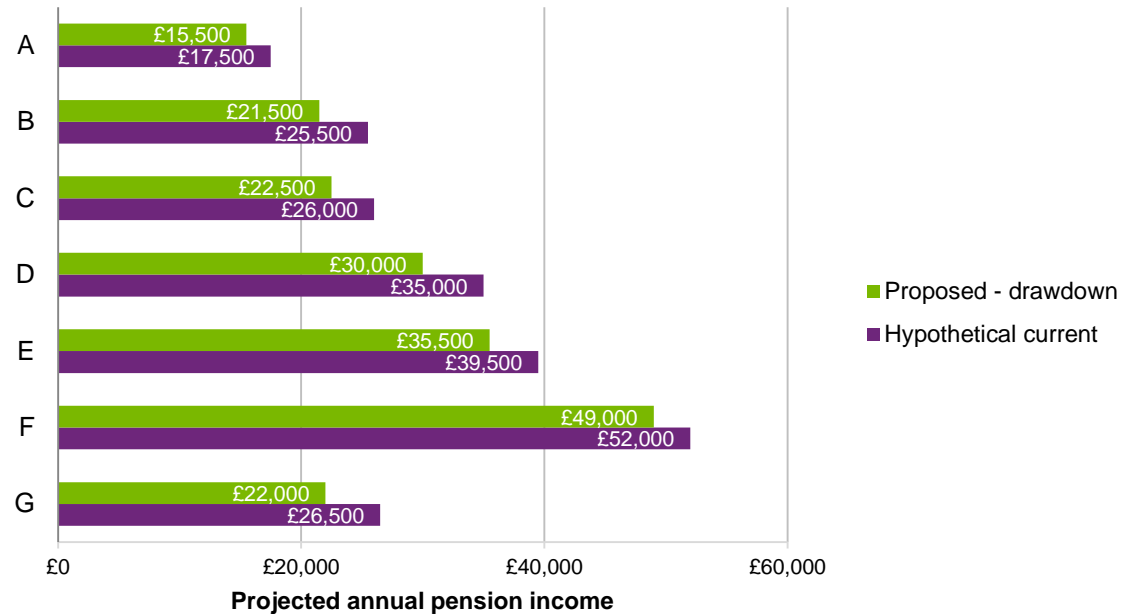
The ages and length of pensionable service are based on the average for each salary band.

The intention is to show a fair representation of typical USS members in each band, and the potential effect of the proposed change on their retirement outcomes.

Example member scenarios

Reference	A	B	C	D	E	F	G (new joiner)
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
Proportion of members in salary band (based on 2014 data)	11.4%	17.2%	24.9%	24.2%	10.1%	12.4%	0.0%
Age (average for salary band)	46	41	48	47	50	53	35
Service (average for salary band)	7	8	10	15	19	22	0
Salary (mid band)	£20,000	£30,000	£40,000	£50,000	£60,000	£90,000	£30,000

Summary of example member scenarios



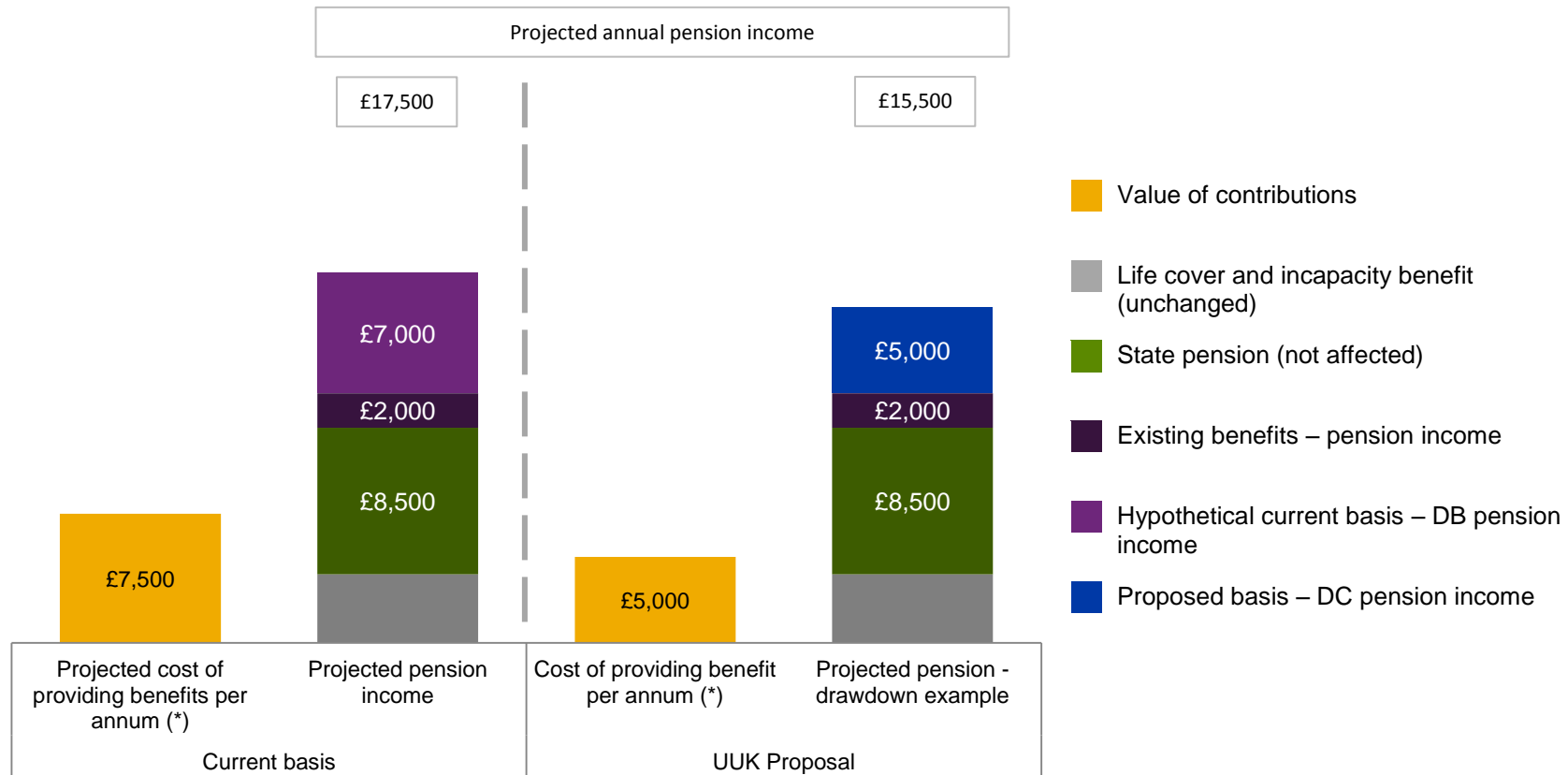
Notes on the charts

The charts below show a breakdown of the comparison of the estimated benefit costs and pension income a USS member could expect to receive at a retirement age of 65 based on the current design (left hand side) compared to the proposed design (right hand side).

Please note that the current design figures are intended for illustration only, and in practice would cost an extra 11.4% per annum compared with the current employer/employee contributions (and moreover the trustee has indicated that it would revise its valuation approach if the employers wished to pay more, since under USS's test 1 this would leave a reduced amount of covenant to support extreme outcomes).

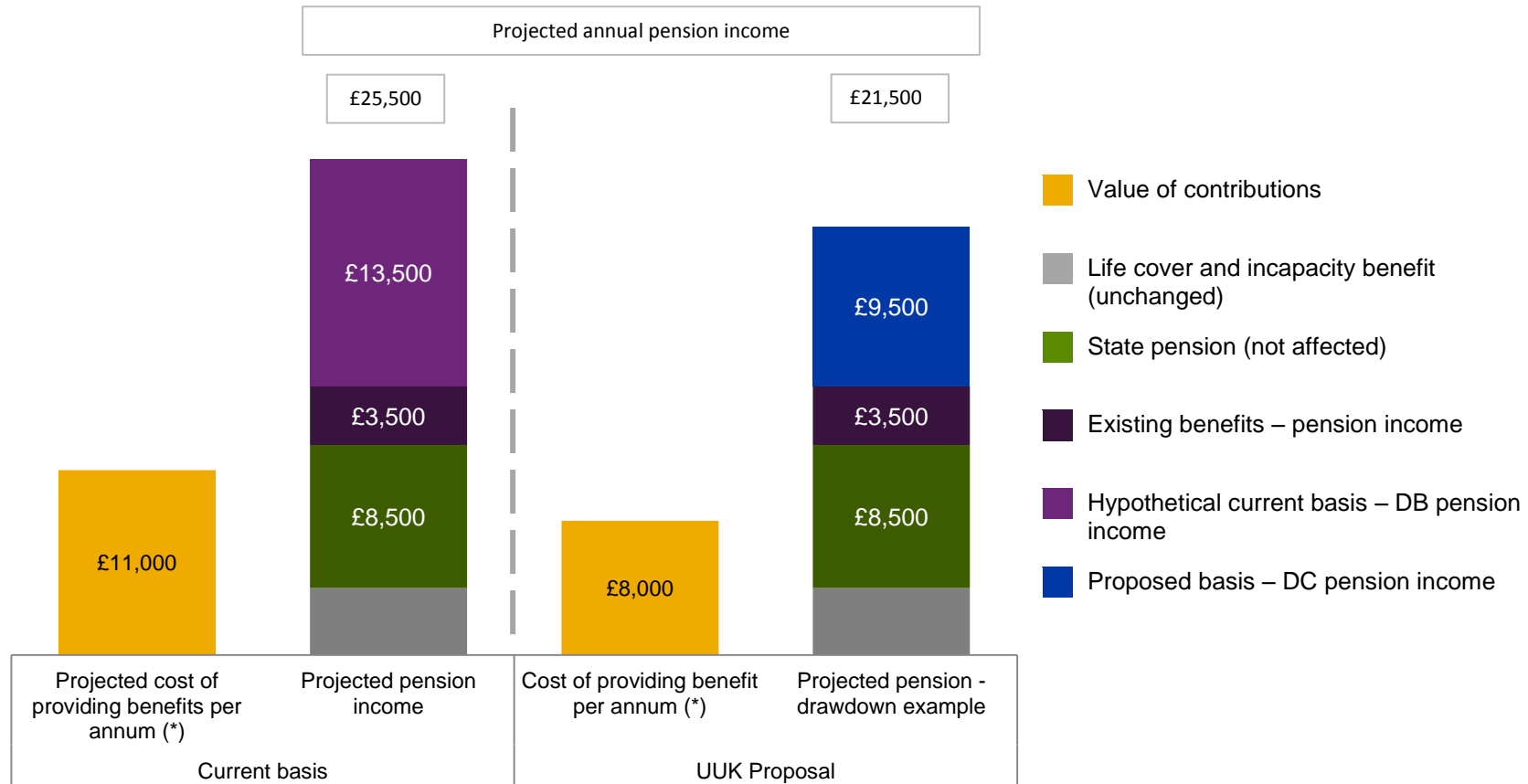
A full list of assumptions used in preparing these projections is shown in the appendix.

Example member A – Salary £20,000, age 46, current pensionable service 7 years



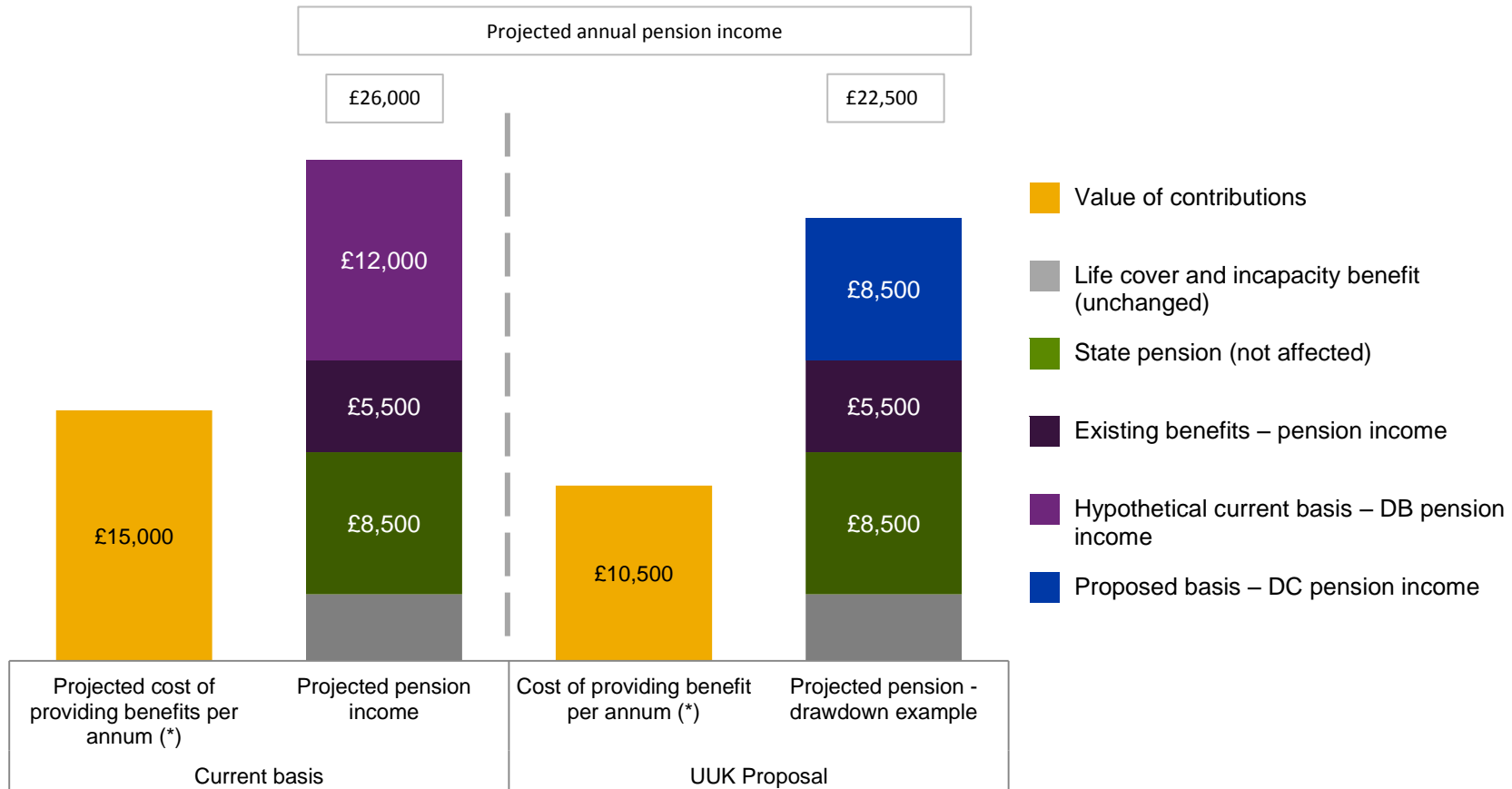
(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing pension benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member B – Salary £30,000, age 41, current pensionable service 8 years



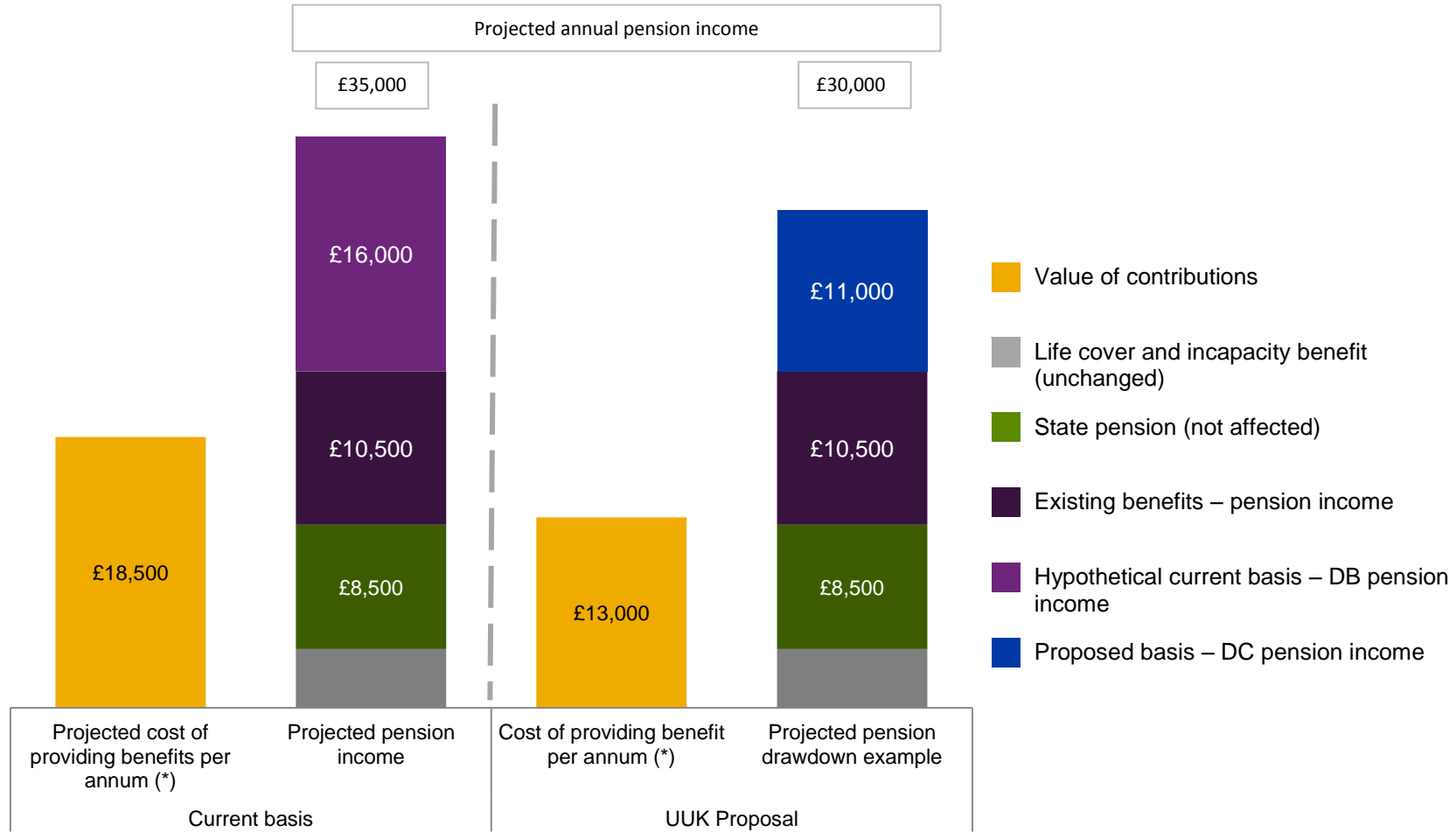
(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member C – Salary £40,000, age 48, current pensionable service 10 years



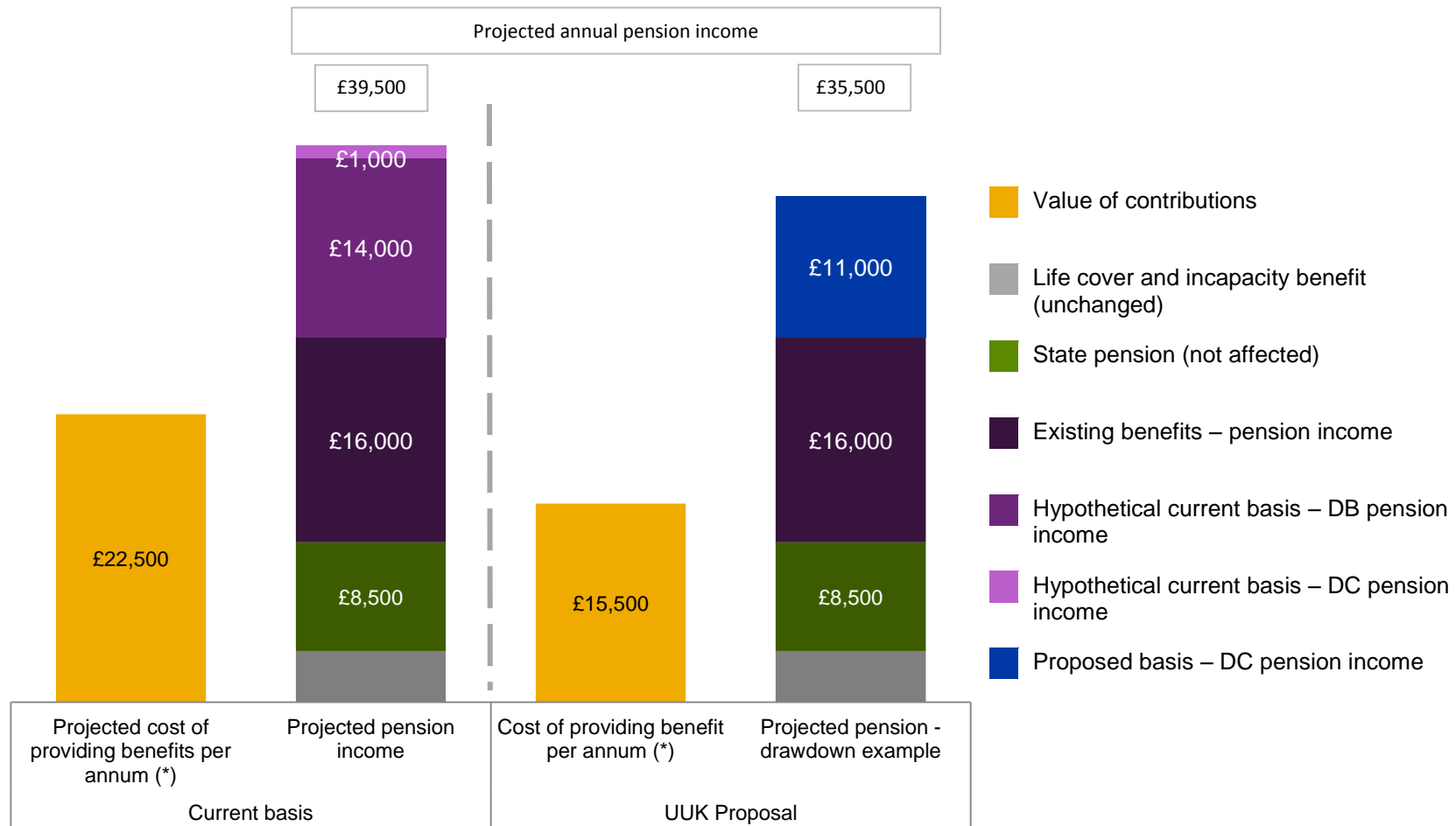
(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member D – Salary £50,000, age 47, current pensionable service 15 years



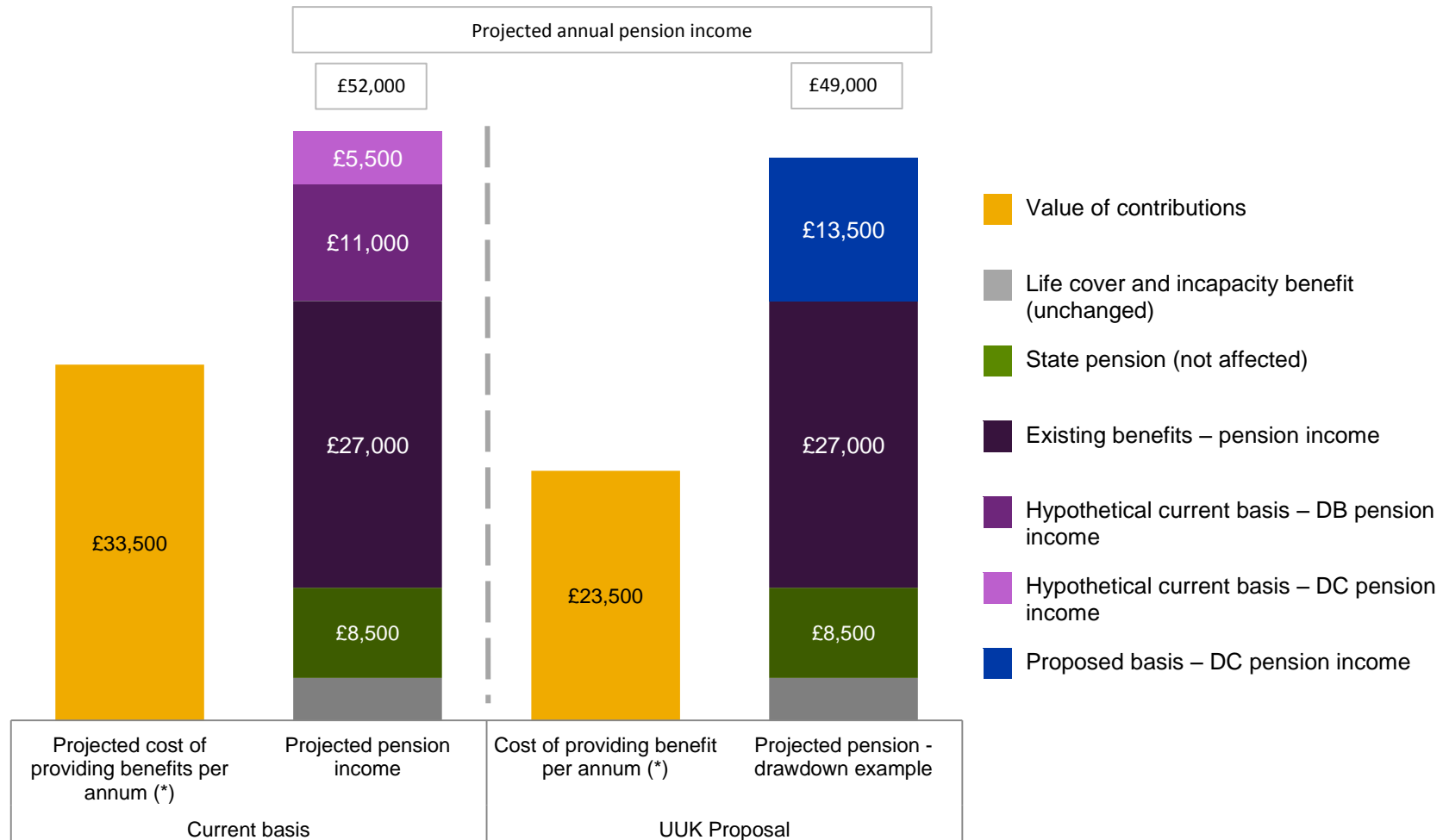
(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member E – Salary £60,000, age 50, current pensionable service 19 years



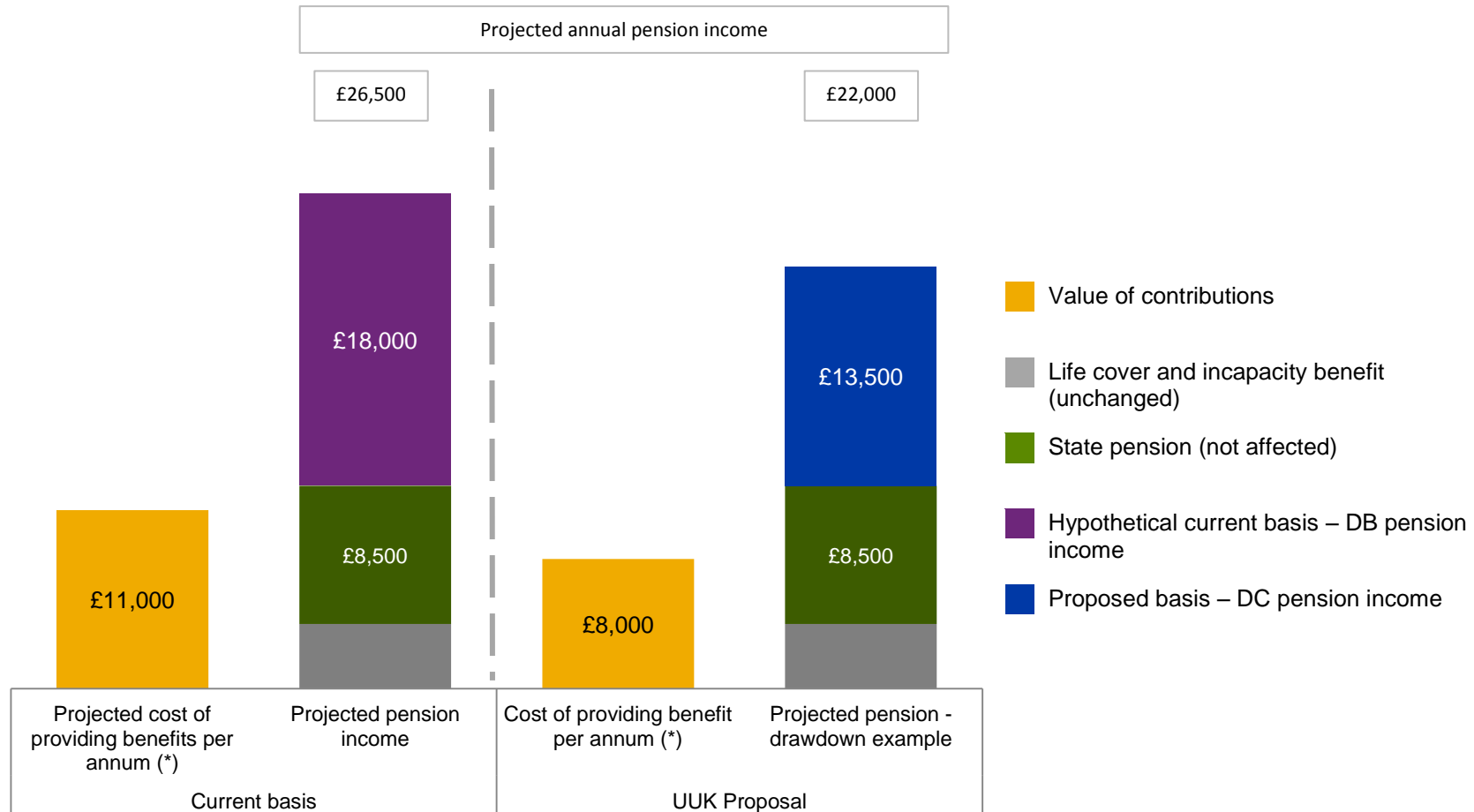
(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member F – Salary £90,000, age 53, current pensionable service 22 years



(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Example member G – Salary £30,000, age 35, new joiner



(*) Excludes cost of state pension (paid through general taxation)
Indicative cost of providing benefits based on latest valuation basis and proposed design, includes employer and employee contributions

Additional data for comparison

The following tables provide the data used in the above charts plus additional data considering alternative methods of taking income from the DC pension funds and alternative investment return assumptions for DC funds based on the current Aon Hewitt Capital Market Assumptions ("CMA").

Example member profiles

<i>Member reference</i>	A	B	C	D	E	F	G
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
Proportion of members in salary band (based on 2014 data)	11.4%	17.2%	24.9%	24.2%	10.1%	12.4%	0.0%
Age (average for salary band)	46	41	48	47	50	53	35
Service (average for salary band)	7	8	10	15	19	22	0
Salary (mid band)	£20,000	£30,000	£40,000	£50,000	£60,000	£90,000	£30,000
Accrued DB Pension	£1,500	£3,000	£5,000	£9,500	£14,000	£23,500	0
Accrued DB Cash	£5,000	£9,000	£15,000	£28,000	£42,000	£70,500	0
DB assuming all taken as pension	£2,000	£3,500	£5,500	£10,500	£16,000	£27,000	0
Accrued DC funds	0	0	0	0	£2,000	£15,000	0

Projected benefits under current design using Aon Hewitt CMA investment returns

Member reference	A	B	C	D	E	F	G
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
DB Pension	£6,000	£12,000	£10,500	£14,000	£12,500	£9,500	£16,000
DB Cash	£18,000	£35,500	£31,500	£42,000	£37,000	£29,000	£47,500
DB pension income assuming all cash exchanged for pension	£7,000	£13,500	£12,000	£16,000	£14,000	£11,000	£18,000
DC Pension assuming level annuity	£0	£0	£0	£0	£1,000	£6,000	£0
DC Pension assuming CPI proxy increasing annuity	£0	£0	£0	£0	£1,000	£4,500	£0
DC Pension assuming level drawdown	£0	£0	£0	£0	£1,000	£7,000	£0
DC Pension assuming CPI proxy increasing drawdown	£0	£0	£0	£0	£1,000	£5,500	£0
DC pension fund value	£0	£0	£0	£0	£19,500	£108,000	£0

Projected DC benefits under current design using USS SMPI assumed investment returns for comparison

Member reference	A	B	C	D	E	F	G
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
DC Pension assuming level annuity	£0	£0	£0	£0	£1,000	£5,500	£0
DC Pension assuming CPI proxy increasing annuity	£0	£0	£0	£0	£1,000	£3,500	£0
DC Pension assuming level drawdown	£0	£0	£0	£0	£1,000	£6,500	£0
DC Pension assuming CPI proxy increasing drawdown	£0	£0	£0	£0	£1,000	£5,000	£0
DC pension fund value	£0	£0	£0	£0	£18,000	£103,000	£0

Projected DC Benefits under proposed change using Aon Hewitt CMA investment returns

Member reference	A	B	C	D	E	F	G
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
DC Pension assuming level annuity	£5,000	£10,500	£9,000	£12,000	£12,000	£14,500	£14,500
DC Pension assuming CPI proxy Increasing annuity	£4,000	£8,000	£7,000	£9,500	£9,000	£11,000	£11,000
DC Pension assuming level drawdown	£6,000	£12,500	£11,000	£14,500	£14,000	£17,000	£17,000
DC Pension assuming CPI proxy Increasing drawdown	£5,000	£9,500	£8,500	£11,000	£11,000	£13,500	£13,500
DC pension fund value	£96,000	£197,500	£167,000	£224,500	£217,500	£265,000	£274,500

Projected DC Benefits under proposed change using USS SMPI assumed investment returns for comparison

Member reference	A	B	C	D	E	F	G
Salary band	<£25,000	£25,000 to £35,000	£35,000 to £45,000	£45,000 to £55,000	£55,000 to £65,000	>£65,000	£25,000 to £35,000
DC Pension assuming level annuity	£5,000	£9,500	£8,500	£11,500	£11,500	£14,000	£12,500
DC Pension assuming CPI proxy Increasing annuity	£3,500	£7,000	£6,500	£8,500	£8,500	£11,000	£9,500
DC Pension assuming level drawdown	£5,500	£11,000	£10,000	£13,500	£13,500	£16,500	£14,500
DC Pension assuming CPI proxy Increasing drawdown	£4,500	£8,500	£8,000	£10,500	£10,500	£13,000	£11,000
DC pension fund value	£88,500	£175,500	£156,000	£208,000	£205,000	£254,000	£231,500

Appendix

Assumptions

- All figures are shown in today's terms (i.e. are adjusted for CPI inflation), and are rounded to the nearest £500.
- For current design, the illustrative future costs are those provided by the trustee, requiring an 11.4% increase to the joint employer/employee cost (from 26% to 37.4% of salary). The current design figures are purely for illustration, and in practice if employers were to increase their contributions above 18% then the discount rate would need to be reviewed by the trustee resulting in likely additional costs (due to the nature of USS's test 1).
- The illustrations have been undertaken by converting scheme benefits to pension however members will of course be entitled at retirement to draw cash up to a tax free limit which is currently 25% of lifetime allowance (LTA) value of benefits. Additional taxable cash can be taken from DC funds in addition to this.
- For the UUK proposal, the projected pension income considers members buying an annuity, and income being taken by income drawdown (whereby the DC funds remain invested and the member draws income from their fund). We have also assumed that the DC approach remains in place until members retire. The charts show the drawdown example only.
- In practice, most members of DC schemes who buy an annuity would buy a level annuity. However, this is arguably not a fair comparison, when considering against the current design. The current scheme pension in payment increases by CPI up to a cap of 5% and half of CPI above this up to a further cap of 10%. It is not currently possible to replicate this level of pension increase under an annuity policy. We have used a proxy escalation figure for the annuity and income drawdown pension income to attempt to model this for comparative purposes only. For interest, we have included figures for a level pension in the table on pages 11-13.
- The assumed investment returns in the charts are based on Aon Hewitt's Capital Market Assumptions. These are Aon Hewitt's asset class return, volatility and correlation assumptions. The return assumptions are 'best estimates' of annualised returns. This means median annualised returns – that is, there is a 50/50 chance that actual returns will be above or below the assumptions. The assumptions are long term assumptions, based on a 10 and 30 year projection period and are updated on a quarterly basis. These returns are gross and so take into account the current investment management fee subsidy paid by employers.
- The projected outcomes using assumed investment returns based the assumptions used in the most recent USS "SMPI" figures are also included for comparison in the table at the end of this paper. We note that these figures do not allow for the continuation of a subsidy of investment manager charges by employers.

- A full state pension of approximately £8,500 per annum (rounded to nearest £500) is assumed.
 - We have included a nominal bar for the life cover and incapacity benefits the charts to illustrate that these are unaffected by the proposed changes.
 - The projected annual pension income does not take into account any other company or personal pension benefits outside of USS with the exception of the state pension as shown.
 - The change has been modelled assuming it takes place with immediate effect.
 - All benefits are projected to age 65.
 - The increase in state pension age and any corresponding increases to the normal USS pension age have been disregarded for the purposes of these examples.
 - The salary threshold under the current design is assumed to increase in line with salary increases each year for simplicity rather than CPI. Based on the assumptions used this has the effect of marginally overstating the DB pension projected under the current design and understating the DC pension.
 - The current option for members to make additional DC contributions has been disregarded from both the current and proposed examples.
- | | |
|--|---|
| ▪ Employer contribution rate for current DC | 12% on pensionable salary above the current threshold |
| ▪ Employer contribution rate for proposed DC | 13.25% |
| ▪ Employee contribution rate for current and proposed DC | 8% |
| ▪ Investment design | USS Lifestyle |
| ▪ CPI | 2.10% |
| ▪ RPI | 3.10% |
| ▪ Salary increases | CPI + 2% (as used in latest USS valuation report) |
| ▪ Charges | The DC projections used in the charts based on the Aon Hewitt investment return assumptions assume a zero charge based on current subsidy. We note there is no guarantee that this subsidy will be maintained indefinitely. |
- The DC projections based on the USS SMPI assumptions shown

in the table assume an investment charge in line with that used in the latest SMPs.

- Existing benefits accrued
Existing benefits based on historical USS benefit design, using current assumed salary.
- Cash commutation rate
20.00 (used as an indicative rate). In effect we are assuming for simplicity that members convert back the 3/80ths or 3/75ths lump sum element into pension for the current design (which all else being equal makes the current design look more attractive).
- Annuity conversion rate
The conversion rate is based on current single life annuity tables and the appropriate gilt yield curve based on a 13 year duration. 13 years has been chosen to be consistent with the duration of a typical single life annuity.

Enhanced annuity rates based on ill health or lifestyle factors have not been taken to account, but may be available to some members at retirement and could result in a higher level of annuity for a member of the same age.
- Drawdown income
The drawdown price is calculated using the same parameters as the annuity above; however, instead of using a gilt yield, a drawdown yield is used to replicate the expected return on a typical drawdown portfolio.
- Drawdown post retirement investment
25% gilts, 25% corporate bond and 50% low 'real' growth seeking assets

Investment returns on DC funds

	USS Growth	USS Moderate Growth	USS Cautious Growth	USS Cash
USS 2017 SMPs assumptions (net of investment fees)	4.77%	4.04%	3.42%	1.37%
Aon Hewitt CMA version 10 Year return assumption (gross)	5.57%	4.64%	3.82%	1.63%
Aon Hewitt CMA version 30 year return assumption (gross)	5.86%	5.15%	4.48%	2.56%

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

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This report, and the work relating to it, complies with 'Technical Actuarial Standard 100: Principles for Technical Actuarial Work' ('TAS 100') and with 'Technical Actuarial Standard 300: Technical Actuarial Standard 300: Pensions ('TAS 300')

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