ACTUARIAL VALUATION AS AT 31 MARCH 2020
STATEMENT OF FUNDING PRINCIPLES

Universities Superannuation Scheme (the Scheme)

This statement of funding principles (SFP) sets out the policies of the trustee of the Universities Superannuation Scheme (the Trustee) for securing that the statutory funding objective is met.

It has been prepared by the Trustee to satisfy the requirements of section 223 of the Pensions Act 2004, after obtaining the advice of Aaron Punwani, the Scheme Actuary appointed under s47 of the Pensions Act 1995. It reflects the guiding principles on risk management adopted by the Trustee. It has been taken into account in the actuarial valuation as at the effective date of 31 March 2020. The SFP will be reviewed and, if necessary, revised, before being taken into account at subsequent valuations under Part 3 of the Pensions Act 2004.

[In accordance with legislation and the Scheme rules, the Trustee has consulted with Universities UK over the content of this statement of funding principles.]

The statutory funding objective

The statutory funding objective is that the Scheme has sufficient and appropriate assets to meet the amount required, on an actuarial calculation, to make provision for the Scheme's liabilities (the technical provisions).

2020 valuation

The Trustee's approach to the actuarial valuation as at 31 March 2020 involved a detailed review of the approach to the valuation, following which the Trustee chose to adopt a new valuation methodology (using dual discount rates) and a new Integrated Risk Management Framework. The methodology was selected as the preferred option taking account that the Scheme is open to accrual and as a result may be expected not to mature quickly – the dual discount rate approach automatically responds to this and results in a contribution requirement for future service benefits that suitably reflects the open nature of the Scheme as well as providing an appropriate model for the technical provisions. The Integrated Risk Management Framework is designed to ensure that the reliance on the covenant remains within employers' aggregate risk capacity, and within the risk appetite of the Trustee and the employers.

The input assumptions to the valuation, including the Recovery Plan parameters, have been considered carefully in light of the heightened market volatility and unusual market conditions around 31 March 2020. The Trustee is satisfied that they are appropriate for that date but the Trustee would not necessarily expect to adopt the same assumptions and parameters for calculations at different dates.

This Statement of Funding Principles takes into account that there is not yet certainty over the benefit structure and covenant support measures to be implemented following the 2020 valuation. As such, where relevant (in particular the Technical Provisions discount rates and recovery plan parameters), two approaches are shown with the outcome depending on whether the anticipated benefit structure reform and covenant support measures (specifically a 20-year moratorium on employers exiting the Scheme, as well as the debt monitoring and pari passu arrangements) are put in place in the expected timescales. The determining criterion is whether a deed is entered into effecting the benefit changes recommended by a resolution of the JNC dated 31 August 2021 in response to the rule 76.1 report with an effective date of 31 March 2020 (the "Benefit Change Deed") on or before 28 February 2022. If benefit changes are implemented which are materially different in form to those set out in such resolution, a revision to this Statement of Funding Principles could be required.

Calculation of the technical provisions

The principal method and assumptions to be used in the calculation of the technical provisions are set out in the notes to this document.

The general principles adopted by the Trustee are that the assumptions used, taken as a whole, will be chosen sufficiently prudently for pensions and benefits already in payment to continue to be paid, and to reflect the commitments which will arise from members' accrued pension rights. The basis will include appropriate margins to allow for the possibility of events turning out worse than expected and will only be adopted after considering the Trustee's Integrated Risk Management Framework.

However, the Trustee does not intend for the method and assumptions to remove completely the risk that the technical provisions could be insufficient to provide benefits in the future.

As part of its process for choosing the assumptions and determining the size of the margins to include, the Trustee will take into account its objective assessment of the employer covenant and the level of risk present in the investment strategy of the Scheme.

Self-sufficiency basis

The principles of risk management adopted by the Trustee mean that the Trustee will have regard to the *self-sufficiency* basis when setting the technical provisions basis. Self-sufficiency is a low-risk strategy for funding the Scheme in the absence of a covenant. It corresponds to a very high confidence level of being able to pay all benefits when they fall due without the need for any additional contributions, while maintaining a high funding ratio. This is not a target level of funding, but rather it provides a measure of the level of reliance on the employer covenant at any point in time.

In particular, the Trustee takes into account its Integrated Risk Management Framework, which considers the difference between the *self-sufficiency* basis and the technical provisions basis in order to ensure that it is within a range which is considered acceptable. This means that the choice of the discount rate for the technical provisions basis may be impacted by the level of future benefit accrual, as the latter will affect the projected quantum of liabilities over time, and therefore the projected amount of reliance on the covenant.

The Trustee considers the level of any shortfall between the assets held and the self-sufficiency liabilities as a key risk measure.

The differences between the assumptions used for the self-sufficiency basis and the technical provisions assumptions are highlighted in the notes to this appendix.

Policy on discretionary increases and funding strategy

The Trustee has certain discretionary powers under the Scheme Rules to provide altered, increased, additional or new benefits to or in respect of any member, former member or other person. No allowance has been included in the assumptions for paying discretionary benefits or making increases to benefits that are not guaranteed under the Scheme rules.

There are no funding objectives provided for in the rules of the Scheme or which the Trustee has adopted in addition to the Statutory Funding Objective.

Rectifying a failure to meet the statutory funding objective

If the assets of the Scheme are less than the technical provisions at the effective date of any actuarial valuation, a recovery plan will be put in place, which may require additional contributions from the employers (and potentially the members) to meet the shortfall. The Trustee has agreed that any such funding shortfalls should be met over an appropriate period and tailored to both Scheme and Employer circumstances.

Additional contributions are currently expressed as a percentage of pensionable payroll.

In determining the actual recovery plan period at any particular valuation, the Trustee will take into account the following factors:

- The size of the funding shortfall and the Scheme's current asset and liability structure;
- The Trustee's future investment strategy;
- The Trustee's objective assessment of the financial covenant of the employers
- Investment market conditions at the valuation date
- The Trustee's objective assessment of the affordability of contributions for employers– in some circumstances this may lead to a recovery plan structure where contributions increase over time to allow employers time to plan for increases.

Based on these principles and assuming the assumptions are borne out in practice, and provided that the Benefit Change Deed is in place by 28 February 2022, the shortfall calculated at the 31 March 2020 valuation will be met by 31 March 2038 which is 18 years from the effective date of the valuation. This is an unusually long recovery plan reflecting the unusual market conditions around 31 March 2020. The Trustee would typically expect to adopt a shorter recovery plan under less stressed financial market conditions.

If no Benefit Change Deed is in place by 28 February 2022, a shorter recovery plan would be adopted as a consequence of the reduced level of covenant support, and the shortfall would be eliminated in 12 years 4 months from 31 March 2020, which is by 31 July 2032. The assumptions to be used in these calculations are set out in the notes to the appendix below.

Calculating the normal cost of the Scheme

Contributions required to meet the cost of benefits accruing by members after the valuation date will be calculated using the method and assumptions set out in the notes to this document.

Contributions payable to the Scheme

The contributions payable to the Scheme by members and employers, including those to meet the cost of new benefits accruing as well as any other contributions the Trustee may require, will be set out in the Schedule of Contributions following each valuation.

Arrangements for other parties to make payments to the Scheme

There is no provision except in specific, limited circumstances in the Scheme rules to allow someone other than the employers or a Scheme member to make contributions to the Scheme and no such arrangements are currently in place.

Policy on reduction of cash equivalent transfer values (CETVs)

At each valuation, the Trustee will ask the actuary to report on the extent to which assets are sufficient to provide CETVs for all members. If the assets are insufficient to provide 100% of benefits on that basis, so that payment of full CETVs would adversely affect the security of the remaining members' benefits, and the employers are unable or unwilling to provide additional funds, the Trustee will consider reducing CETVs as permitted under legislation.

If, at any other time, the Trustee is of the opinion that payment of CETVs at a previously agreed level could adversely affect the security of the remaining members' benefits, the Trustee will commission a report from the actuary and will use the above criteria to decide whether, and to what extent, CETVs should be reduced.

Payments to the employer

There is no provision in the Scheme rules for employers to request a refund of the excess assets over the cost of buying out benefits of all beneficiaries with an insurance company, when the Scheme is not being wound up.

GMP Equalisation

As a result of the court case ruling in respect of the Lloyds Banking Group Pension Schemes, Schemes are required to equalise Guaranteed Minimum Pensions accrued between 17 May 1990 and 5 April 1997. There is no explicit allowance for this in the 2020 actuarial valuation and any additional funding costs required to uplift benefits will be met by either the Scheme's assets or future contributions, although owing to the benefit structure of the Scheme it is expected that these will be immaterial in the context of the Scheme as a whole.

Frequency of valuations and circumstances for extra valuations

Subsequent valuations will in normal circumstances be carried out every three years. In intervening years an actuarial report will be produced.

The Trustee will monitor the funding level on a regular basis between valuations in order to determine what action, if any, it needs to take. If the Trustee decides that it is appropriate, it may commission a full actuarial valuation, when after considering the actuary's advice, it is of the opinion that it is necessary to do so and is an effective use of its resources.

This statement of funding principles, revised from [date], has been agreed by the Trustee of the USS after obtaining advice from the Scheme Actuary.

Signed on behalf of the Trustee of the USS	
Name	
Position	
Revised and effective from date	

Notes to Statement of Funding Principles

Method and assumptions used in calculating the technical provisions

Summary of decisions made as to method and key assumptions used for calculating technical provisions as at 31 March 2020

The method used was the Projected Unit method.

Principal actuarial assumptions for Technical Provisions as at 31 March 2020	
Market derived price inflation	In line with difference between Fixed Interest and Index-Linked yield curves
Inflation risk premium	0.0% pa
Price inflation – Retail Prices Index	Market derived price inflation less Inflation risk premium
RPI / CPI gap	1.1% pa to 2030, reducing linearly by 0.1% pa to a long term difference of 0.1% pa from 2040.
Price inflation – Consumer Prices Index	RPI assumption less RPI / CPI gap
Discount rate	Fixed Interest gilt yield curve plus:
Pre-retirement:	*With anticipated benefit reform: 2.75%* *Without anticipated benefit reform: 2.0%*
Post-retirement:	1.0%
Pension increases *(all subject to a floor of 0%)*	*Current benefits:* CPI assumption + 5bps (for both pre and post 2011 benefits) *Increases capped at 2.5% (if applicable following anticipated benefit reform):* CPI assumption – 35bps
Mortality base table	101% of S2PMA "light" for males and 95% of S3PFA for females
Future improvements to mortality	CMI_2019 with a smoothing parameter of 7.5, an initial addition of 0.5% pa and a long term improvement rate of 1.8% pa for males and 1.6% pa for females

The derivation of these key assumptions and an explanation of the other assumptions to be used in the calculation of the technical provisions are set out below.

The assumptions set out in the table above reflect the particular market conditions as at 31 March 2020. The derivation of assumptions at other dates (in particular the discount rates relative to gilt yields, the inflation risk premium, the RPI/CPI gap, and the pension increase assumptions relative to CPI), consistent with the funding principles, may be different at other dates.

Method

The actuarial method to be used in the calculation of the technical provisions is the Projected Unit method with a one-year control period.

Financial assumptions

The financial assumptions shall be determined using a 'yield curve approach', with different assumptions applying at different points in time, reflecting the term structure of financial instruments. The particular approach to be used in determining each of the financial assumptions is set out below.

Inflation (RPI)

The assumption for the rate of increase in the Retail Prices Index (RPI) will be taken as a term structure derived from the investment market's expectation for inflation as indicated by the difference between an estimate of the yields available on conventional and index-linked UK Government bonds appropriate to the date of each future cash flow (extrapolated for cashflows beyond the longest available gilts), as advised appropriate by the Scheme Actuary. An adjustment may be made to the assumption to reflect market views that the prices of index-linked gilts include a 'risk premium' to reflect, for example, future inflation uncertainty. This adjustment may be limited by the existing or prospective level of inflation hedging targeted by the Scheme. As at 31 March 2020, the inflation risk premium is set to be 0.0% pa. At other dates the inflation risk premium may be positive.

Inflation (CPI)

The assumption for the rate of increase in the Consumer Prices Index (CPI) will be derived from the RPI inflation assumption with an appropriate adjustment to recognise the difference between expectations of future RPI increases and future CPI increases. At the 31 March 2020 valuation the adjustment was set in light of the emerging position on RPI reform, leading to a deduction of 1.1% pa for the period to 2030, linearly decreasing by 0.1% pa over the next 10 years to a long term deduction of 0.1% pa. Following further announcements from the government and UK Statistics Authority on RPI reform in November 2020 a different adjustment might apply at subsequent dates.

For the self-sufficiency basis at the 31 March 2020 valuation, CPI was set at 50bps higher than the derivation resulting from the figures above.

Discount rate

The discount rates for liabilities are a prudent allowance for future investment returns of the notional portfolios developed in respect of pre- and post-retirement liabilities, taking into account the Trustee's Integrated Risk Management Framework (and in particular the strength of the covenant).

A Dual-Discount Rate methodology has been used for the 2020 valuation, with different discount rates in respect of the pre- and post-retirement periods. These are expressed as a premium to the fixed interest gilt yield (where the gilt yield reflects the term structure derived from the yield of fixed interest gilts appropriate to the date of each future cash flow extrapolated for cash flows beyond the longest available gilts). Note that the pre-retirement discount rate is used in respect of contingent dependants' benefits up to the date of the member's assumed retirement age.

The pre-retirement discount rate will depend on the benefit structure and covenant support in place. Provided the Benefit Change Deed is entered into by 28 February 2022, an addition of 2.75% to the gilt curve will be used. If no Benefit Change Deed is entered into by 28 February 2022, the addition will be 2.0%. The post-retirement discount rate uses an addition of 1.0% to the gilt curve.

The additions have all been determined as at 31 March 2020 taking into account market conditions at that date. A consistent approach at other dates would be expected to result in different additions relative to gilts. If, following a review of the investment strategy there are consequential changes to the Statement of Investment Principles after completion of the valuation, or due to a change in the Trustee's view on the outlook for future returns, the discount rates may also change at subsequent funding updates.

For the "Self-sufficiency" basis the discount rate assumes a margin of 1.0% pa added to the fixed interest gilt yield as at 31 March 2020. This reflects market conditions and in particular the level of credit spreads available at that date and may be expected to be different at other dates.

Pension increases

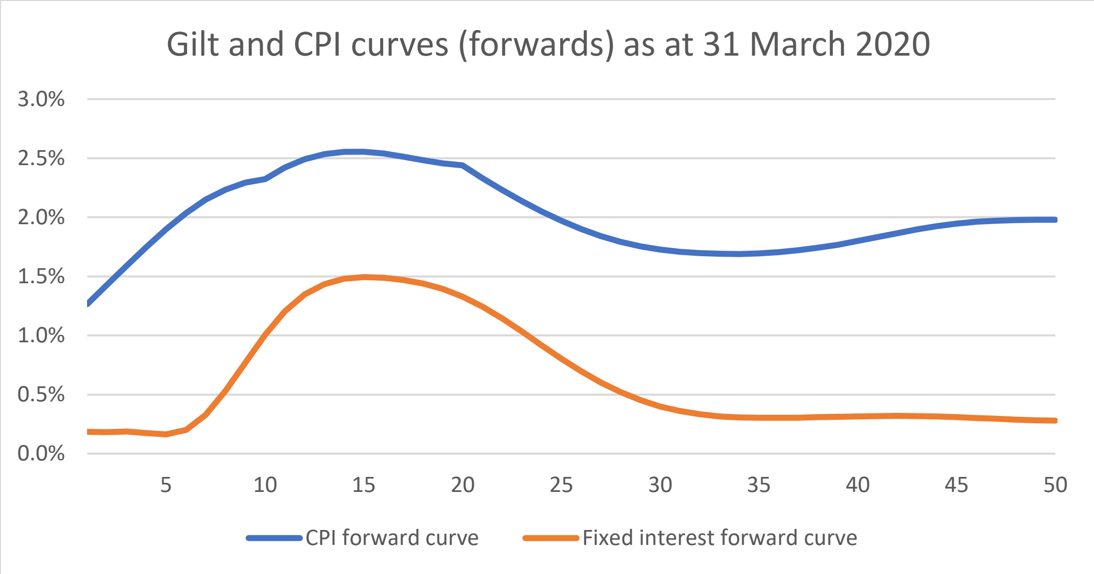
Increases to pensions for current benefits are assumed to be in line with the CPI inflation assumption described above with an increase of 5bps pa for the fact that pension increases are subject to a minimum of zero and either no cap or a limited cap once inflation exceeds 5% pa.

The anticipated new benefit structure has pension increases of CPI capped at 2.5% pa (and a minimum of zero as currently). The assumption for this increase is in line with the CPI inflation assumption less 35bps pa.

The above pension increase assumptions are based on market conditions as at 31 March 2020 reflecting the relevant caps and floors to the increases. If the central CPI assumption is different at other dates then the adjustments relative to CPI for the pension increase assumptions would also be different.

Gilt and CPI curves

The Fixed Interest gilt curve used in determining the discount rates, and the CPI curve resulting from the derivation above, are shown below. Full values are available on our website.



Demographic assumptions

Mortality

The mortality assumptions are based on scheme-specific experience analysis, expressed as liability-equivalent adjustments to standard tables published by the Continuous Mortality Investigation (CMI), making allowance for future improvements in longevity. The mortality tables are as follows:

- Males: S2PMA "Light" with 101% weighting and improvements using CMI_2019 [1.8%] with smoothing parameter 7.5 and initial addition 0.5% pa

- Females: S3PFA with 95% weighting and improvements using CMI_2019 [1.6%] with smoothing parameter 7.5 and initial addition 0.5% pa

Early retirement

The allowance for early retirements will reflect emerging experience of retirements as monitored at each actuarial valuation and any adjustment for future expectations which is considered appropriate. For the 31 March 2020 valuation it has been assumed that ex-final salary active members will retire in line with the following decrement table (with all others assumed to retire at 65 in respect of accrued liabilities). Benefits relating to service accrued prior to 1 October 2011 are assumed to be paid with no reduction, and an allowance has been made for benefits accrued after 30 September 2011 to be reduced from the payable age of 65.

Age	% leaving per annum
60	30
61	10
62	15
63	15
64	20

All other members of the Scheme are assumed to retire at 65 in respect of accrued liabilities and allowance is built in for the appropriate adjustment to each relevant tranche of benefit applicable to members in line with the benefit age or associated Contractual Pension Age.

Benefits accrued from 6 October 2020 are assumed to be payable from 66 in line with the Scheme's Normal Pension Age.

Ill health retirement

A small proportion of the active members will be assumed to retire owing to ill health. As an example of the rates assumed at the valuation with effective date 31 March 2020, the following is an extract from the decrement table used:

	% leaving per annum	% leaving per annum
Age	Males	Females
35	0.01	0.01
45	0.04	0.05
55	0.14	0.25

Withdrawals

This assumption relates to those members who leave the Scheme with an entitlement to a deferred pension. It has been assumed that active members will leave the Scheme at the following sample rates:

Age	% leaving per annum
25	20.11
35	10.02
45	5.64

Commutation

No allowance has been made for the option that members have to commute part of their pension at retirement in return for an additional lump sum (or indeed exchange part of their additional lump sum for pension) on the basis that the overall effect of these options is not expected to be material to the Scheme.

Proportion of beneficiary pensions payable and age difference

It has been assumed that a proportion of members will have an eligible beneficiary at the time of death based on bespoke scales derived from the 2018 ONS data for co-habiting couples.

Sample rates as shown in the table below.

	% spouse / partner	
Age	**Male**	**Female**
45	80.5	66.3
55	80.1	65.0
65	77.7	59.3
75	74.7	45.8
85	68.6	22.3

The surviving beneficiary of male members is assumed to be four years younger, on average, than the deceased Scheme member, and the beneficiary of female members one year older.

Expenses

Expenses including PPF Levies are met by the fund. A provision for this is included by adding 0.4% of salary to the total contribution rate. This addition is reassessed at each valuation. The future level of the PPF levy in particular is very uncertain. Investment expenses have been allowed for implicitly in determining the discount rates.

Assumptions used in calculating contributions payable under the recovery plan

The contributions payable under the recovery plan will be calculated using the same assumptions as those used to calculate the technical provisions, with the exception of the following during the period of the recovery plan:

Investment return on existing assets and future deficit recovery contributions

The Trustee has determined that it will allow for additional investment returns of 0.5% pa on existing assets and deficit recovery contributions in the recovery plan for the 31 March 2020 valuation. If the anticipated benefit reform takes place, this allowance is made for the full duration of the recovery plan (18 years in these circumstances). If the anticipated benefit reform does not take place, the allowance is made for the first 10 years only. The 0.5% addition reflects the unusual market conditions as at 31 March 2020. The consistent additional return may be different at other dates.

Salary increases

The growth in the aggregate payroll of the Scheme's membership, used in the recovery plan, is assumed to be CPI + 1.5% pa. Because of the benefit structure of the Scheme it is not necessary to specify assumptions for individual members' pay growth.

Method and assumptions used in calculating the cost of future accrual

The cost of future accrual was calculated using the projected unit method with a 1 year control period. The same assumptions as those used to calculate the technical provisions are adopted, with the exception of retirement age (see below), and allowance for the Recovery Plan outperformance.

From October 2020, new benefits being accrued will have a retirement age of 66, in line with the change to State Pension Age. The cost of future accrual is based on the new retirement age.

The future service contribution rate also makes allowance for an element of additional investment return based on the recovery plan (0.5% pa for the 2020 valuation) as it applies to the future service contributions.