

Transformation Appendix

Summary

This is the Transformation Appendix to the Board's Determination under Section 175(5) of the Pensions Act 2004 in respect of the 2026/27 Levy Year (the "**Determination**").

This Appendix applies to an Alternative Covenant Scheme as defined in the Rules and provides the formulae for transforming Section 179 Valuation results for the purpose of calculating the RBL in respect of the 2026/27 Levy Year for such schemes. Rule C2 sets out the two-part definition of an Alternative Covenant Scheme – i.e., a scheme satisfying any one of the criteria in Rule C2.1(2), and where the Board considers under Rule C2.1(1) that it is appropriate for the Alternative Covenant Scheme methodology to apply.

The transformation involves:

- transforming the Section 179 Valuation results on to a Section 179 basis as at 31 March 2026, using version A11 of the valuation assumptions guidance;
- moving the assets and liabilities forward (or backwards) from the date of the Section 179 Valuation to 31 March 2026;
- adjusting the results to reflect smoothed market conditions, calculated by averaging market data over five years to 31 March 2026; and
- applying stress factors and submitted risk factor stress impacts to adjust the assets and liabilities to reflect their sensitivity to specified shocks in economic conditions.

A similar transformation (with the final step above omitted) is used to calculate smoothed but unstressed asset and liability values.

The formulae have been developed by the Board to transform valuation results which have been Submitted at the Measurement Time or otherwise provided to the Board in accordance with the Rules into valuation results as at 31 March 2026 (the "Output Date"), on:

- a smoothed and stressed Section 179 basis; and
- a smoothed but unstressed Section 179 basis.

"Input Date" is the effective date of the Section 179 Valuation of the Scheme which is used for the purposes of this Appendix.

Calculation principles

In performing the calculations required by this or any other Appendix to the Determination:

- 1) unless otherwise specified in this or any other Appendix, intermediate stages of any parts of the calculation that are carried out by the Board shall, if rounded, be rounded to the extent that is reasonably practicable for the Board in all the circumstances, save for S179Ass and S179TL which shall each be rounded to the nearest penny at each stage of the calculation, and for the final amounts of the SBL and the RBL which shall each be rounded to the nearest pound; and
- 2) where a value which falls to be rounded in accordance with (1) above falls exactly halfway between two potential rounded figures it shall be rounded upwards.

1. Background

- 1.1 The most recent Section 179 Valuation Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules will be used, as described in this Appendix, to assess the Scheme's funding position on the smoothed and stressed Section 179 basis, and also the smoothed but unstressed Section 179 basis, as at 31 March 2026.
- 1.2 The Board's expectation is that the Section 179 Valuation results provided will have been prepared in accordance with version A11 of the valuation assumptions guidance. If, exceptionally, this is not the case, the Board will adjust the transformation formulae using the approach set out in the Transformation Appendix for Levy Year 2025/26. The Board's expectation is also that the Section 179 Valuation results will have been prepared in accordance with version G10 of the valuation methodology guidance. If, exceptionally, this is not the case, the Board has decided that no allowance will be made in the transformation formulae to account for any change in methodology.
- 1.3 The transformation model only uses information about each Scheme as taken from Exchange or otherwise provided to the Board in accordance with the Rules, together with data on investment market conditions.

2. Summary of the calculation

- 2.1 The formulae constitute a technical actuarial document which is intended to be read only by those with significant experience in carrying out actuarial calculations. For those with a broad interest in the conversion methodology, the main stages of the calculations are summarised below.
- 2.2 Transformation of the value of the protected liabilities on the Section 179 basis as at the Input Date to the value of the liabilities on the smoothed and stressed Section 179 basis as at the Output Date, using version A11 of the valuation assumptions guidance:
 - The formulae use figures for the proportions of liabilities that relate to service before 6 April 1997, between 6 April 1997 and 5 April 2009 (both dates inclusive) and after 5 April 2009 taken, where possible, from data Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules, to allow for differences in PPF compensation for service attributable to these respective periods. Where these figures have not been given, assumptions are made.
 - Ratios of annuity factors and deferred annuity factors are then used to convert the adjusted Section 179 liabilities to liabilities on smoothed and stressed Section 179 assumptions as at the Output Date, using version A11 of the valuation assumptions guidance.

- 2.3 Moving assets and the liabilities forward (or backwards) from the date of the Section 179 Valuation to the Output Date:
- The physical assets (excluding derivatives) are assumed to achieve returns in line with certain smoothed indices, allowance being made for how much of the Scheme's assets are invested in equities, bonds etc. as Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules.
 - Liabilities are increased (or decreased) at rates that are reasonably consistent with smoothed and stressed Section 179 assumptions, as the liabilities are now closer to (or further away from) coming into payment. As a consequence of smoothing market conditions over a five year period, the transformed asset value has an effective valuation date at the mid point of the averaging period. For consistency the liability value at the Output Date is moved forward (or backwards) to the same point.
 - Neither assets nor liabilities are adjusted for benefit payments. Liabilities are not adjusted for new benefit accrual, nor are assets adjusted for contributions. The comparatively short period between the Section 179 Valuation effective date and the Output Date should mean that any inaccuracies arising from this are small.
- 2.4 The expenses specified for Section 179 calculations are added to the liabilities to give the total liability value.
- 2.5 The smoothed physical asset values are multiplied by stress factors to reflect their sensitivity to specified shocks in economic conditions, e.g. interest rates and equity prices. The overall resulting figure is then increased or decreased to allow for any submitted risk factor stress impacts.
- 2.6 The unstressed values of assets and liabilities are calculated in a similar way to the smoothed and stressed values, but:
- without the application of the stress factors to the smoothed physical asset values;
 - without allowance for any submitted risk factor stress impacts;
 - converting the liabilities using annuity factors and deferred annuity factors which reflect smoothed but unstressed Section 179 assumptions as at the Output Date; and
 - moving the liability value forward (or backwards) from the date of the Section 179 Valuation at rates that are reasonably consistent with smoothed but unstressed Section 179 assumptions.

3. Summary of outputs from and inputs to the formulae

3.1 Outputs

Effective date of the asset and liability valuations required for output (31 March 2026)	OutputDate
<ul style="list-style-type: none"> Smoothed and stressed asset value 	S179Ass
<ul style="list-style-type: none"> Smoothed and stressed total liabilities (including Section 179 expense allowance) 	S179TL

3.2 Inputs

The Section 179 Valuation results Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules:

<ul style="list-style-type: none"> Assets for Section 179 Valuation 	S179InputAss
<ul style="list-style-type: none"> Proportion of assets held in the form of insurance contracts not included in scheme accounts 	S179InputInsPpn
<ul style="list-style-type: none"> Date of relevant accounts giving asset figure 	RelAcDate
<ul style="list-style-type: none"> Effective date of the Section 179 valuation 	S179InputDate
<ul style="list-style-type: none"> Liabilities for pensions in payment 	S179InputPL
<ul style="list-style-type: none"> Liabilities for deferred members 	S179InputDL
<ul style="list-style-type: none"> Liabilities for active members 	S179InputAL
<ul style="list-style-type: none"> Estimated costs of wind-up (excluding benefit installation/payment) 	S179InputWUExp
<ul style="list-style-type: none"> Estimated expenses of benefit installation/payment 	S179InputPayExp
<ul style="list-style-type: none"> External liabilities 	S179InputExLiab
<ul style="list-style-type: none"> Total value of protected liabilities 	S179InputTL
<ul style="list-style-type: none"> Proportion of pensioner liabilities relating to service before 6 April 1997 	S179InputPPre97Ppn
<ul style="list-style-type: none"> Proportion of deferred pensioner liabilities relating to service before 6 April 1997 	S179InputDPre97Ppn
<ul style="list-style-type: none"> Proportion of deferred pensioner liabilities relating to service between 6 April 1997 and 5 April 2009 	S179InputD97_09Ppn
<ul style="list-style-type: none"> Proportion of active member liabilities relating to service before 6 April 1997 	S179InputAPre97Ppn
<ul style="list-style-type: none"> Proportion of active member liabilities relating to service between 6 April 1997 and 5 April 2009 	S179InputA97_09Ppn

• Version number of Section 179 assumptions used for this valuation	S179InputAssVNo
• Total number of pensioner members	PMemNo
• Total number of deferred pensioner members	DMemNo
• Total number of active members	AMemNo
• Pensioner members – average age	PAvAge
• Deferred members – average age	DAvAge
• Active members – average age	AAvAge

Where membership numbers are not included in the Section 179 Valuation results Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules, the total membership number may be determined from a different source.

• Total membership number	TotMemNo
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Scheme asset information Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules – percentages of the total assets as at the date of the most recently audited scheme accounts (referred to as “AssetDate” below). It is envisaged that this will generally be the same as the S179InputDate and the RelAcDate identified above.

• Bonds	Bo%
• Proportion of bonds which are fixed interest UK Government bonds	UKFI%
○ Proportion of fixed interest UK Government bonds which are of short maturity (less than 5 years)	UKFIS%
○ Proportion of fixed interest UK Government bonds which are of medium maturity (5 to 15 years)	UKFIM%
○ Proportion of fixed interest UK Government bonds which are of long maturity (over 15 years)	UKFIL%
• Proportion of bonds which are fixed interest UK investment grade quoted bonds (other than UK Government bonds)	IGUK%
○ Proportion of fixed interest UK investment grade quoted bonds (other than UK Government bonds) which are of short or medium maturity (less than 10 years)	IGUKSM%
○ Proportion of fixed interest UK investment grade quoted bonds (other than UK Government bonds) which are of long maturity (over 10 years)	IGUKL%
• Proportion of bonds which are fixed interest overseas investment grade quoted bonds	IGOS%
○ Proportion of fixed interest overseas investment grade quoted bonds which are of short or medium maturity (less than 10 years)	IGOSSM%

○ Proportion of fixed interest overseas investment grade quoted bonds which are of long maturity (over 10 years)	IGOSL%
• Proportion of bonds which are fixed interest quoted sub-investment grade	SIG%
• Proportion of bonds which are fixed interest private debt	PD%
• Proportion of bonds which are inflation-linked UK Government bonds ¹	UKIL%
○ Proportion of inflation-linked UK Government bonds which are of short maturity (less than 5 years)	UKILS%
○ Proportion of inflation-linked UK Government bonds which are of medium maturity (5 to 15 years)	UKILM%
○ Proportion of inflation-linked UK Government bonds which are of long maturity (over 15 years)	UKILL%
• Equities	Eq%
• Proportion of equities which are UK quoted equities	UK%
• Proportion of equities which are overseas developed market quoted equities	OSDM%
• Proportion of equities which are overseas emerging market quoted equities	OSEM%
• Proportion of equities which are unquoted equities/private equity ²	PE%
• Property	Pr%
• Diversified Growth Funds	DGF%
• Absolute Return Funds	ARF%
• Deferred or immediate fully insured annuities	An%
• Cash and net current assets	Ca%
• ABC Arrangement	ABC%
• Other	Ot%
• Date of asset breakdown	AssetDate

¹ Inflation-linked bonds that are not UK Government bonds are allocated to their corresponding fixed interest sub-class.

² For the avoidance of doubt, the sub-categorisations within the unquoted equities/private equity asset class on Exchange are not used in this Appendix.

Scheme asset information Submitted as at the Measurement Time or otherwise provided to the Board in accordance with the Rules – risk factor stress impacts as at the date of the most recently audited scheme accounts (referred to as “AssetDate” above).

	Risk factor stress impact	Risk factor stress
• UK equities	UKRFSI	-16%
• Overseas developed market equities	OSDMRFSI	-16%
• Overseas emerging market equities	OSEMRFSI	-16%
• Interest rate	IRRFSI	-87bps
• Inflation	InfRFSI	-5bps
• Credit	CrRFSI	+22bps

The risk factor stress impacts are to be determined in accordance with the relevant Exchange user-guide, including the application of the risk factor stresses as shown above.

Normal Pension Age data taken from the scheme return data or otherwise provided to the Board in accordance with the Rules:

• Normal Pension Age in respect of pre-6 April 1997 benefits	NPAPre97
• Normal Pension Age in respect of benefits accrued between 6 April 1997 and 5 April 2009	NPA97_09
• Normal Pension Age in respect of post-5 April 2009 benefits	NPAPost09

Where any of the information in this section 3 has not been provided or is not in the form that the Board requires or is inconsistent, the Board will need to make assumptions in a manner which, in the opinion of the Board, best gives effect to the provisions of this Appendix and the Rules.

4. The formulae

4.1 Smoothing

Asset and liability values are smoothed based on market conditions over a five year period up to the Output Date. This is achieved by smoothing the underlying yields that feed into the liability transformation and smoothing the indices that feed into the asset transformation.

Smoothed yields and indices as at the Output Date should be determined as the arithmetic mean of the end of day values for each day excluding weekends over the five year period ending on the last such day preceding or coincident with the Output Date.

Where no published yield or index is available for a particular day (for example Bank Holidays or indices published on a monthly basis), the most recent yield or index available on that day shall be used.

4.2 Stress factors

Liability stress factors		
Interest rate stress factor	IntStrFac	-0.87%
Inflation stress factor	InflnStrFac	-0.05%

The inflation stress factor above represents the difference between a real rate stress factor of -0.82% and a nominal rate stress factor of -0.87% (equivalent to the interest rate stress factor), producing a negative result of -0.05%.

Asset stress factors		
Fixed interest UK Government bonds of short maturity (less than 5 years)	UKFISStrFac	+2%
Fixed interest UK Government bonds of medium maturity (5 to 15 years)	UKFIMStrFac	+7%
Fixed interest UK Government bonds of long maturity (over 15 years)	UKFILStrFac	+16%
Fixed interest UK investment grade quoted bonds (other than UK Government bonds) of short or medium maturity (less than 10 years)	IGUKSMStrFac	+3%
Fixed interest UK investment grade quoted bonds (other than UK Government bonds) of long maturity (over 10 years)	IGUKLStrFac	+7%
Fixed interest overseas investment grade quoted bonds of short or medium maturity (less than 10 years)	IGOSSMStrFac	+1%
Fixed interest overseas investment grade quoted bonds of long maturity (over 10 years)	IGOSLStrFac	+4%
Fixed interest quoted sub-investment grade bonds	SIGStrFac	-6%
Fixed interest private debt	PDStrFac	-9%
Inflation-linked UK Government bonds of short maturity (less than 5 years)	UKILSStrFac	+2%
Inflation-linked UK Government bonds of medium maturity (5 to 15 years)	UKILMStrFac	+8%
Inflation-linked UK Government bonds of long maturity (over 15 years)	UKILLStrFac	+23%

UK quoted equities	QEStrFac	-16%
Overseas developed market quoted equities	QEStrFac	-16%
Overseas emerging market quoted equities	QEStrFac	-16%
Unquoted equities/private equity	PEStrFac	-19%
Property	PrStrFac	-4%
Diversified Growth Funds	DGFStrFac	-10%
Absolute Return Funds	ARFStrFac	-5%
Deferred or immediate fully insured annuities	AnStrFac	+16%
Cash and net current assets	CaStrFac	0%
Other	OtStrFac	-19%

4.3 Transformation of liabilities on the Section 179 basis on assumptions as at the Input Date to the smoothed and stressed Section 179 basis as at the Output Date.

4.3.1 Divide the liabilities between those accrued before April 1997, between April 1997 and April 2009, and after April 2009 (different indexation and revaluation)

$$S179InputPLPre97 = S179InputPL \times S179InputPPre97Ppn$$

$$S179InputPLPost97 = S179InputPL \times (1 - S179InputPPre97Ppn)$$

$$S179InputDLPre97 = S179InputDL \times S179InputDPre97Ppn$$

$$S179InputDL97_09 = S179InputDL \times S179InputD97_09Ppn$$

$$S179InputDLPost09 = S179InputDL \times (1 - S179InputDPre97Ppn - S179InputD97_09Ppn)$$

$$S179InputALPre97 = S179InputAL \times S179InputAPre97Ppn$$

$$S179InputAL97_09 = S179InputAL \times S179InputA97_09Ppn$$

$$S179InputALPost09 = S179InputAL \times (1 - S179InputAPre97Ppn - S179InputA97_09Ppn)$$

4.3.2 Convert from Section 179 assumptions as at S179InputDate to smoothed and stressed Section 179 assumptions as at OutputDate

The financial and demographic assumptions as at OutputDate (31 March 2026) should be based on Section 179 assumptions version A11.

Annuities used for conversion

General assumptions for annuity factors

At S179InputDate and at Output Date, Mortality: S3PMA (for males) and S3DFA (for females) as appropriate, with future changes in line with CMI_2021_M [1.50 per cent] (for males) and CMI_2021_F [1.25 per cent] (for females) together with an initial adjustment to improvements of 0.25 per cent per annum and a ten per cent weighting to the 2020 and 2021 mortality experience, all applying from the year 2013. The 'year of use/retirement' to adopt is described in the following table for annuities at S179InputDate (substitute OutputDate for S179InputDate to obtain year of use/retirement applicable to annuities at OutputDate).

Annuity	Year of Use³
annuityfactorpre97	S179InputDate
annuityfactorpost97	S179InputDate

Deferred Annuity	Year of Retirement^{3,4}
defannuityfactorpre97def	S179InputDate + NPAPre97 - DAvAge
defannuityfactor97_09def	S179InputDate + NPA97_09 - DAvAge
defannuityfactorpost09def	S179InputDate + NPAPost09 - DAvAge
defannuityfactorpre97act	S179InputDate + NPAPre97 - AAvAge
defannuityfactor97_09act	S179InputDate + NPA97_09 - AAvAge
defannuityfactorpost09act	S179InputDate + NPAPost09 - AAvAge

³ Past mortality improvements are applied for the number of years obtained by deducting the calendar year corresponding to the effective date of the base mortality table from the calendar year of S179InputDate (or OutputDate as appropriate). For example, if S179InputDate/OutputDate is 31 March 2026, the annuity will take account of 13 years (2026 - 2013) of past mortality improvements.

⁴ Mortality improvements are assumed to apply in deferment from S179InputDate (or OutputDate as appropriate). For example, if DAvAge is 53 and the relevant NPA is 63 and S179InputDate/OutputDate is 31 March 2026 (and so the assumed year of retirement is 2036) the deferred annuity will take account of mortality improvements up to 2036 in deferment, and thereafter take account of mortality improvements from 2036 in payment.

- Age: PAvAge, DAvAge or AAvAge (as appropriate) - where DAvAge or AAvAge > NPAPre97, NPA97_09 or NPAPost09 as appropriate, an immediate annuity is used in place of a deferred annuity
- Sex: male
- Spouse's proportion: 50%
- Proportion married at S179InputDate and at Output Date⁵: 75%
- Wife three years younger than member
- No allowance for pre-retirement mortality
- Normal pension age: NPAPre97, NPA97_09 or NPAPost09 as appropriate
- No guarantee period for annuities

Discount rate – pre retirement

The annuity factors applicable to non-pensioners are those prefixed by 'def'. The pre-retirement discount rate is derived as follows:

- defannuityfactorpre97def, defannuityfactor97_09def, defannuityfactorpre97act, defannuityfactor97_09act:
 - At S179InputDate, Yield A as at S179InputDate, plus 0.2%
 - At OutputDate, Smoothed Yield A as at OutputDate, plus 0.2% plus IntStrFac, less InflnStrFac.

Yield A should be determined as 50% of the sum of the annualised real yields on the FTSE UK Gilts Index-Linked 5 to 15 years indices assuming 0% and 5% inflation.

Smoothed Yield A should be determined as the five-year average of the daily values of Yield A in line with subsection 4.1 above.

- defannuityfactorpost09def, defannuityfactorpost09act:
 - At S179InputDate, the maximum of:
 - Yield A as at S179InputDate, plus 0.2%: and
 - Yield B as at S179InputDate, less 2.5%.
 - At OutputDate, the maximum of:
 - Smoothed Yield A as at OutputDate, plus 0.2% plus IntStrFac less InflnStrFac: and
 - Smoothed Yield B as at OutputDate, less 2.5% plus IntStrFac.

Yield B should be determined as the annualised yield on the FTSE UK Gilts 10 years Fixed Interest index.

Smoothed Yield B should be determined as the five-year average of the daily values of Yield B in line with subsection 4.1 above.

⁵ For the avoidance of doubt, the specified proportion is assumed to apply at the effective date of each annuity and deferred annuity. By implication, this means that immediate annuities do not incorporate any allowance for spouse's mortality over the period since the member's NPA.

Since there is no allowance for mortality before retirement, generally $\text{defannuityfactor}(t) = (1 / (1 + i)^t) \times \text{annuityfactor}(t)$, where t is the period to retirement (taken as normal pension age less DAvAge or AAvAge as appropriate) and i is the relevant pre retirement discount rate.

Discount rate – post retirement

The post-retirement discount rate should be derived as follows:

- $\text{defannuityfactorpre97def}$ and $\text{defannuityfactorpre97act}$:
 - At $S179\text{InputDate}$, Yield $C(i)$ as at $S179\text{InputDate}$
 - At OutputDate , Smoothed Yield $C(i)$ as at OutputDate , plus IntStrFac
- $\text{annuityfactorpre97}$:
 - At $S179\text{InputDate}$, Yield $C(ii)$ as at $S179\text{InputDate}$, plus 0.4%.
 - At OutputDate , Smoothed Yield $C(ii)$ as at OutputDate , plus 0.4%, plus IntStrFac

Yield $C(i)$ should be determined as the annualised yield on the FTSE UK Gilts 20 years Fixed Interest index.

Yield $C(ii)$ should be determined as the annualised yield on the FTSE UK Gilts 15 years Fixed Interest index.

Smoothed Yield $C(i)$ should be determined as the five-year average of the daily values of Yield $C(i)$ in line with subsection 4.1 above.

Smoothed Yield $C(ii)$ should be determined as the five-year average of the daily values of Yield $C(ii)$ in line with subsection 4.1 above.

- $\text{defannuityfactor97_09def}$, $\text{defannuityfactorpost09def}$, $\text{defannuityfactor97_09act}$, $\text{defannuityfactorpost09act}$:
 - At $S179\text{InputDate}$, the maximum of:
 - Yield $D(i)$ as at $S179\text{InputDate}$, plus 0.1%; and
 - Yield $C(i)$ as at $S179\text{InputDate}$, less 2.3%.
 - At OutputDate , the maximum of:
 - Smoothed Yield $D(i)$ as at OutputDate , plus 0.1% plus IntStrFac less InflnStrFac ; and
 - Smoothed Yield $C(i)$ as at OutputDate , less 2.3% plus IntStrFac .
- $\text{annuityfactorpost97}$:
 - At $S179\text{InputDate}$, the maximum of:
 - Yield $D(ii)$ as at $S179\text{InputDate}$, plus 0.6%; and
 - Yield $C(ii)$ as at $S179\text{InputDate}$, less 1.8%.
 - At OutputDate , the maximum of:
 - Smoothed Yield $D(ii)$ as at OutputDate , plus 0.6% plus IntStrFac less InflnStrFac ; and
 - Smoothed Yield $C(ii)$ as at OutputDate , less 1.8% plus IntStrFac .

Yield D(i) should be determined as 50% of the sum of the annualised real yields on the FTSE UK Gilts Index-Linked over 5 years indices assuming 0% and 5% inflation.

Yield D(ii) should be determined as 50% of the sum of the annualised real yields on the FTSE UK Gilts Index-Linked 5 to 15 years indices assuming 0% and 5% inflation.

Smoothed Yield D(i) should be determined as the five-year average of the daily values of Yield D(i) in line with subsection 4.1 above.

Smoothed Yield D(ii) should be determined as the five-year average of the daily values of Yield D(ii) in line with subsection 4.1 above.

In the formulae below, S179rate@OutputDate and S179rate@S179InputDate refer respectively to the smoothed and stressed S179 basis applicable at Output Date and the unsmoothed, unstressed S179 basis applicable at S179Input Date, determined in accordance with the subsections above.

Pensioner liabilities

S179PLPre97@S179InputDate

$$= S179InputPLPre97 \times \frac{\text{annuityfactorpre97}(S179rate@OutputDate)}{\text{annuityfactorpre97}(S179rate@S179InputDate)}$$

S179PLPost97@S179InputDate

$$= S179InputPLPost97 \times \frac{\text{annuityfactorpost97}(S179rate@OutputDate)}{\text{annuityfactorpost97}(S179rate@S179InputDate)}$$

Non-pensioner liabilities

S179DLPre97@S179InputDate

$$= S179InputDLPre97 \times \frac{\text{defannuityfactorpre97def}(S179rate@OutputDate)}{\text{defannuityfactorpre97def}(S179rate@S179InputDate)}$$

S179DL97_09@S179InputDate

$$= S179InputDL97_09 \times \frac{\text{defannuityfactor97_09def}(S179rate@OutputDate)}{\text{defannuityfactor97_09def}(S179rate@S179InputDate)}$$

S179DLPost09@S179InputDate

$$= S179InputDLPost09 \times \frac{\text{defannuityfactorpost09def}(S179rate@OutputDate)}{\text{defannuityfactorpost09def}(S179rate@S179InputDate)}$$

S179ALPre97@S179InputDate

$$= S179InputALPre97 \times \frac{\text{defannuityfactorpre97act}(S179rate@OutputDate)}{\text{defannuityfactorpre97act}(S179rate@S179InputDate)}$$

$$S179AL97_09@S179InputDate$$

$$= S179InputAL97_09 \times \frac{\text{defannuityfactor97_09act}(S179rate@OutputDate)}{\text{defannuityfactor97_09act}(S179rate@S179InputDate)}$$

$$S179ALPost09@S179InputDate$$

$$= S179InputALPost09 \times \frac{\text{defannuityfactorpost09act}(S179rate@OutputDate)}{\text{defannuityfactorpost09act}(S179rate@S179InputDate)}$$

4.4 Transforming the smoothed and stressed liabilities and external liabilities from S179InputDate to OutputDate, and transforming the assets from RelAcDate to OutputDate with allowance for smoothing

4.4.1 Liabilities

$$S179PLPre97@OutputDate$$

$$= S179PLPre97@S179InputDate \times (1 + i)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179PLPost97@OutputDate$$

$$= S179PLPost97@S179InputDate \times (1 + i)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179DLPre97@OutputDate$$

$$= S179DLPre97@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179DL97_09@OutputDate$$

$$= S179DL97_09@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179DLPost09@OutputDate$$

$$= S179DLPost09@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179ALPre97@OutputDate$$

$$= S179ALPre97@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179AL97_09@OutputDate$$

$$= S179AL97_09@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

$$S179ALPost09@OutputDate$$

$$= S179ALPost09@S179InputDate \times (1 + j)^{(OutputDate - S179InputDate) - 2.5 \text{ years}}$$

The time period OutputDate – S179InputDate is measured in years and fractions of years.

i = Smoothed Yield $C(ii)$ as at OutputDate, plus IntStrFac.

j = Smoothed Yield $C(i)$ as at OutputDate, plus IntStrFac.

$$S179PL = S179PLPre97@OutputDate + S179PLPost97@OutputDate$$
$$S179DL = S179DLPre97@OutputDate + S179DL97_09@OutputDate \\ + S179DLPost09@OutputDate$$
$$S179AL = S179ALPre97@OutputDate + S179AL97_09@OutputDate \\ + S179ALPost09@OutputDate$$

4.4.2 Assets

Since the value of assets used in the Section 179 Valuation may have been adjusted to include the value of assets held in the form of insurance contracts not included in Scheme accounts (or any difference between the value of such contracts for the Section 179 Valuation and the corresponding value in the Scheme accounts), the allocation between the different asset classes may need to be adjusted to take account of this adjustment. This is allowed for, where appropriate, by multiplying each asset class through by $(100\% - S179InputInsPpn)$ and then adding $S179InputInsPpn$ to the resulting proportion for the Annuities class.

Then roll forward to the Output Date, reflecting smoothed returns likely to be earned or to have been earned on schemes' actual assets using, as far as possible, published information about returns on assets in different classes.

First work out the asset values at RelAcDate for each asset class.

If AssetDate = RelAcDate:

$$UKFIS@RelAcDate = S179InputAss \times Bo\% \times UKFI\% \times UKFIS\% \\ \times (100\% - S179InputInsPpn)$$
$$UKFIM@RelAcDate = S179InputAss \times Bo\% \times UKFI\% \times UKFIM\% \\ \times (100\% - S179InputInsPpn)$$
$$UKFIL@RelAcDate = S179InputAss \times Bo\% \times UKFI\% \times UKFIL\% \\ \times (100\% - S179InputInsPpn)$$
$$IGUKSM@RelAcDate = S179InputAss \times Bo\% \times IGUK\% \times IGUKSM\% \\ \times (100\% - S179InputInsPpn)$$
$$IGUKL@RelAcDate = S179InputAss \times Bo\% \times IGUK\% \times IGUKL\% \\ \times (100\% - S179InputInsPpn)$$
$$IGOSSM@RelAcDate = S179InputAss \times Bo\% \times IGOS\% \times IGOSM\% \\ \times (100\% - S179InputInsPpn)$$
$$IGOSL@RelAcDate = S179InputAss \times Bo\% \times IGOS\% \times IGOSL\% \\ \times (100\% - S179InputInsPpn)$$
$$SIG@RelAcDate = S179InputAss \times Bo\% \times SIG\% \times (100\% - S179InputInsPpn)$$
$$PD@RelAcDate = S179InputAss \times Bo\% \times PD\% \times (100\% - S179InputInsPpn)$$

$$\begin{aligned} \text{UKILS@RelAcDate} &= \text{S179InputAss} \times \text{Bo\%} \times \text{UKIL\%} \times \text{UKILS\%} \\ &\quad \times (100\% - \text{S179InputInsPpn}) \\ \text{UKILM@RelAcDate} &= \text{S179InputAss} \times \text{Bo\%} \times \text{UKIL\%} \times \text{UKILM\%} \\ &\quad \times (100\% - \text{S179InputInsPpn}) \\ \text{UKILL@RelAcDate} &= \text{S179InputAss} \times \text{Bo\%} \times \text{UKIL\%} \times \text{UKILL\%} \\ &\quad \times (100\% - \text{S179InputInsPpn}) \\ \text{UK@RelAcDate} &= \text{S179InputAss} \times \text{Eq\%} \times \text{UK\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{OSDM@RelAcDate} &= \text{S179InputAss} \times \text{Eq\%} \times \text{OSDM\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{OSEM@RelAcDate} &= \text{S179InputAss} \times \text{Eq\%} \times \text{OSEM\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{PE@RelAcDate} &= \text{S179InputAss} \times \text{Eq\%} \times \text{PE\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{Prop@RelAcDate} &= \text{S179InputAss} \times \text{Pr\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{DGF@RelAcDate} &= \text{S179InputAss} \times \text{DGF\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{ARF@RelAcDate} &= \text{S179InputAss} \times \text{ARF\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{Annuities@RelAcDate} &= \text{S179InputAss} \\ &\quad \times (\text{An\%} \times (100\% - \text{S179InputInsPpn}) + \text{S179InputInsPpn}) \\ \text{Cash@RelAcDate} &= \text{S179InputAss} \times \text{Ca\%} \times (100\% - \text{S179InputInsPpn}) \\ \text{Other@RelAcDate} &= \text{S179InputAss} \times \text{Ot\%} \times (100\% - \text{S179InputInsPpn}) \end{aligned}$$

Then roll forward the asset values to OutputDate with allowance for smoothing,

$$\begin{aligned} \text{UKFIS@OutputDate} &= \text{UKFIS@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UKFIM@OutputDate} &= \text{UKFIM@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UKFIL@OutputDate} &= \text{UKFIL@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{IGUKSM@OutputDate} &= \text{IGUKSM@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{IGUKL@OutputDate} &= \text{IGUKL@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{IGOSSM@OutputDate} &= \text{IGOSSM@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{IGOSL@OutputDate} &= \text{IGOSL@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{SIG@OutputDate} &= \text{SIG@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{PD@OutputDate} &= \text{PD@RelAcDate} \times \text{FiBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UKILS@OutputDate} &= \text{UKILS@RelAcDate} \times \text{ILBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UKILM@OutputDate} &= \text{UKILM@RelAcDate} \times \text{ILBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UKILL@OutputDate} &= \text{UKILL@RelAcDate} \times \text{ILBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{UK@OutputDate} &= \text{UK@RelAcDate} \times \text{UKRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{OSDM@OutputDate} &= \text{OSDM@RelAcDate} \times \text{WorldexUKRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{OSEM@OutputDate} &= \text{OSEM@RelAcDate} \times \text{WorldexUKRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{PE@OutputDate} &= \text{PE@RelAcDate} \times \text{UKRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{Prop@OutputDate} &= \text{Prop@RelAcDate} \times \text{PrRet}(\text{RelAcDate}, \text{OutputDate}) \end{aligned}$$

$$\begin{aligned} & \text{DGF@OutputDate} = \text{DGF@RelAcDate} \\ & \times (60\% \times \text{WorldRet}(\text{RelAcDate}, \text{OutputDate})) \\ & + 40\% \times \text{FIBoRet}(\text{RelAcDate}, \text{OutputDate}) \end{aligned}$$

$$\begin{aligned} \text{ARF@OutputDate} &= \text{ARF@RelAcDate} \times \text{Ca+Ret}(\text{RelAcDate}, \text{OutputDate}) \\ \text{Annuities@OutputDate} &= \text{Annuities@RelAcDate} \times \text{FIBoRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{Cash@OutputDate} &= \text{Cash@RelAcDate} \times \text{CaRet}(\text{RelAcDate}, \text{OutputDate}) \\ \text{Other@OutputDate} &= \text{Other@RelAcDate} \times \text{CaRet}(\text{RelAcDate}, \text{OutputDate}) \end{aligned}$$

The asset return roll up factors are defined as follows:

Asset category (AC)	Asset return roll up factor $\text{ACRet}(\text{Date1}, \text{Date2})$
FiBo	$\frac{\text{FTSE UK Gilts All stocks TRI@Date2}}{\text{FTSE UK Gilts All stocks TRI@Date1}}$
ILBo	$\frac{\text{FTSE UK Index-linked Gilts All stocks TRI@Date2}}{\text{FTSE UK Index-linked Gilts All stocks TRI@Date1}}$
UK	$\frac{\text{FTSE All-Share TRI@Date2}}{\text{FTSE All-Share TRI@Date1}}$
WorldexUK	$\frac{\text{FTSE All-World ex UK TRI@Date2}^6}{\text{FTSE All-World ex UK TRI@Date1}}$
Pr	$\frac{\text{MSCI UK Monthly Property TRI@Date2}}{\text{MSCI UK Monthly Property TRI@Date1}^7}$
World	$\frac{\text{FTSE All-World TRI@Date2}}{\text{FTSE All-World TRI@Date1}^8}$
Ca	$\frac{\text{Cash TRI@Date2}}{\text{Cash TRI@Date1}}$ <p>where $\text{Cash TRI@DateX} = 1 + \text{Cashreturn\%}(\text{BaseDate}, \text{DateX})$, Cashreturn% estimated by rolling up the Bank of England base rate from BaseDate to DateX, and BaseDate = 1 November 2004</p>

⁶ FTSE All-World ex UK TRI (Sterling denominated) to be used.

⁷ MSCI UK Monthly Property All Assets TRI to be used.

⁸ FTSE All-World TRI (Sterling denominated) to be used.

Ca+	$\frac{\text{Cash+ TRI@Date2}}{\text{Cash+ TRI@Date1}}$ <p>where Cash+ TRI@DateX = 1 + Cash+return%(BaseDate, DateX), Cash+return% estimated by rolling up the Bank of England base rate plus 3.5 percentage points from BaseDate to DateX, and</p> <p style="text-align: center;">BaseDate = 1 November 2004</p>
<p>When Date2 is specified as the OutputDate of 31 March 2026, the index values at Date2 are smoothed in line with subsection 4.1 above unless otherwise stated; otherwise, unsmoothed index values are used.</p>	

If AssetDate is earlier than RelAcDate

Derive the asset distribution for assets included in the accounts at RelAcDate based on the given asset distribution at AssetDate, allowing for differential asset returns for each asset category over the period from AssetDate to RelAcDate. This is done using roll forward formulae consistent with those above. The asset distribution at RelAcDate for assets included in the accounts is then calculated by normalising the total to 100%. The adjustment for the field S179InputInsPpn, to take account of annuities not listed in the relevant accounts (or which have a different value for S179 Valuation purposes than the value in the relevant accounts), is made after the normalisation process. These normalised allocation percentages are then used in the formulae above to calculate the asset value at OutputDate.

If AssetDate is later than RelAcDate,

Derive the asset distribution for assets included in the accounts at RelAcDate based on the given asset distribution at AssetDate, allowing for differential asset returns for each asset category over the period from RelAcDate to AssetDate. In effect the roll-forward formulae above are used "in reverse" for the period from AssetDate back to RelAcDate and applied to the proportions of assets in each class as at AssetDate. The asset distribution at RelAcDate for assets included in the accounts is then calculated by normalising the total to 100%. The adjustment for the field S179InputInsPpn, to take account of annuities not listed in the relevant accounts (or which have a different value for S179 Valuation purposes than the value in the relevant accounts), is made after the normalisation process. These normalised allocation percentages are then used in the formulae above to calculate the asset value at OutputDate.

4.5 Application of Section 179 expenses

$$S179PayExp = \text{£}550 \times \text{PMemNo} + \text{£}750 \times (\text{DMemNo} + \text{AMemNo})$$

If $S179PL + S179DL + S179AL < \text{£}4$ million, then

$$S179WUExp = (S179PL + S179DL + S179AL) \times 0.05$$

If £4 million =< S179PL + S179DL + S179AL < £20 million, then
 $S179WUExp = (S179PL + S179DL + S179AL) \times 0.015 + \text{£}0.14 \text{ million}$

If £20 million =< S179PL + S179DL + S179AL < £340 million, then
 $S179WUExp = (S179PL + S179DL + S179AL) \times 0.008 + \text{£}0.28 \text{ million}$

If $S179PL + S179DL + S179AL \geq \text{£}340 \text{ million}$, then
 $S179WUExp = \text{£}3 \text{ million}$

$S179Exp = S179PayExp + S179WUExp$

4.6 Total liability value on smoothed and stressed Section 179 basis

$S179TL = S179PL + S179DL + S179AL + S179Exp + S179ExLiab$

4.7 Total asset value on smoothed and stressed basis

$S179Ass$
 $= UKFIS@OutputDate \times (1 + UKFISStrFac) + UKFIM@OutputDate \times (1 + UKFIMStrFac)$
 $+ UKFIL@OutputDate \times (1 + UKFILStrFac) + IGUKSM@OutputDate \times (1 + IGUKSMStrFac)$
 $+ IGUKL@OutputDate \times (1 + IGUKLStrFac) + IGOSSM@OutputDate \times (1 + IGOSSMStrFac)$
 $+ IGOSL@OutputDate \times (1 + IGOSLStrFac) + SIG@OutputDate \times (1 + SIGStrFac)$
 $+ PD@OutputDate \times (1 + PDStrFac) + UKILS@OutputDate \times (1 + UKILSStrFac)$
 $+ UKILM@OutputDate \times (1 + UKILMStrFac) + UKILL@OutputDate \times (1 + UKILLStrFac)$
 $+ UK@OutputDate \times (1 + QEStrFac) + OSDM@OutputDate \times (1 + QEStrFac)$
 $+ OSEM@OutputDate \times (1 + QEStrFac) + PE@OutputDate \times (1 + PEStrFac)$
 $+ Prop@OutputDate \times (1 + PrStrFac) + DGF@OutputDate \times (1 + DGFStrFac)$
 $+ ARF@OutputDate \times (1 + ARFStrFac) + Annuities@OutputDate \times (1 + AnStrFac)$
 $+ Cash@OutputDate \times (1 + CaStrFac) + Other@OutputDate \times (1 + OtStrFac)$
 $+ UKRFSI + OSDMRFSI + OSEMRFSI + IRRFSI + InfRFSI + CrRFSI$

4.8 Calculation of smoothed but unstressed asset and liability values

The calculation of the smoothed but unstressed asset and liability values follows the same transformation steps as set out above in subsections 4.1 to 4.7, with the application of the stress factors omitted (i.e. the stress factors specified in subsection 4.2 and the risk factor stress impacts noted as inputs in subsection 3.2 should be treated as if they were zero). In this scenario, the outputs S179Ass and S179TL would respectively represent the smoothed but unstressed asset and liability values.