

Formulae for rolling forward section 179 valuation results at dates other than 31 March 2006 to a section 179 basis as at 31 March 2006 for the purpose of estimating the pension protection levy

Summary

This document details the formulae developed jointly by the Board of the Pension Protection Fund and the Government Actuary's Department to roll forward valuation results which have been provided to the Board on a section 179 basis (in the Scheme Return or otherwise) as at a date prior to 31 March 2006 into valuation results on a section 179 basis as at 31 March 2006 (referred to as "the output date" below). The Board of the Pension Protection Fund, in conjunction with the Government Actuary's Department, has created a model for carrying out these calculations.

This document complements the document published on 16 December 2005 setting out the formulae for converting valuation results on the MFR basis to a section 179 basis as at 31 March 2006.

1 Background

- 1.1 For the 2006/07 levy year, a scheme has the option of undertaking a valuation on a Pension Protection Fund liabilities (section 179) basis and providing this information to the Board by 31 March 2006. This information may then be used in place of information about the scheme's funding position on the MFR basis contained in the Scheme Return in assessing the scheme's funding position on the section 179 basis as at 31 March 2006.
- 1.2 A model created in conjunction with the Government Actuary's Department will enable the Board to roll forward section 179 valuations to a consistent valuation date, 31 March 2006. A similar model has been created for converting and rolling forward valuation results on the MFR basis.
- 1.3 The model itself only uses information about each scheme that will be supplied by the scheme to the Board either directly (the section 179 valuation result) or from the Scheme Return submitted by the scheme to the Pensions Regulator, together with published 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 proposal, the main stages of the calculations are summarized below.

2.2 Transformation of the value of the liabilities on the section 179 basis as at the input date and in respect of protected liabilities to the value of liabilities on the section 179 basis as at the output date (31 March 2006) in respect of full liabilities.

- The section 179 methodology prescribes an allowance for expenses, and removing this allowance is the first stage in transforming the liabilities (where information about a section 179 valuation is given on a section 179 valuation certificate directly to the board, this stage is unnecessary, as figures for the value of liabilities for pensioners, deferred pensioners and active members excluding expenses, are available directly from the form).
- The section 179 methodology also prescribes adjustments to liabilities to reflect the capping of benefits and the limitation of benefits to 90% of the scheme benefits for those under pension age; these adjustments are also removed.
- The formulae then make assumptions about the proportion of liabilities that relate to service before and after 6 April 1997, to allow for differences in Pension Protection Fund compensation for service before and after 1997.
- Ratios of annuity factors and deferred annuity factors are then used to convert the adjusted section 179 liabilities, which at this stage reflect the levels of indexation included in protected liabilities and as paid by the Pension Protection Fund, to full scheme liabilities on section 179 assumptions as at the output date (31 March 2006). This is a typical actuarial method for adjusting for changes in pension increase assumptions. This process relies on information about actual scheme practice on indexation as recorded on the Scheme Return.
- The liabilities are at this point still effectively at the section 179 calculation date used by the scheme, and reflect the scheme's benefit structure, despite being calculated with reference to section 179 assumptions at the output date.

2.3 Moving assets and the liabilities forward from the date of the section 179 calculation to the output date.

- Liabilities are increased at a rate that is reasonably consistent with section 179 assumptions, as the liabilities are now closer to coming into payment.
- The assets are assumed to achieve returns in line with certain stock market indices, allowance being made for how much of the scheme's assets are invested in equities, bonds etc. as taken from the Scheme Return provided to the Pensions Regulator.
- The liabilities are now at the output date, and are based on section 179 assumptions. However, they still reflect scheme benefits.

- 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 (31 March 2006) should mean that any inaccuracies arising from this are small. Certification of special contributions should be considered where these may materially affect the result.

2.4 Allowing for Pension Protection Fund benefit levels in the rolled forward liabilities.

- Ratios of annuities are used to reduce the liabilities to reflect PPF benefit levels for pensioners. A reduction is then made in the expectation that some of the pensioner membership will be below normal pension age, where their benefits would be subject to the cap on compensation and reduced to a 90% compensation level.
- Similar reductions are then applied to non-pensioner liabilities. An assumption is made that a proportion of non-pensioner liabilities would be restricted by the compensation cap and all non-pensioner liabilities would be reduced to a 90% compensation level.
- As a final step the expenses specified for Section 179 calculations are added to the liabilities to give the final results.

3 Summary of outputs from and inputs to the formulae

3.1 Outputs

| | |
|---|------------|
| • Assets for section 179 valuation | S179Ass |
| • Total liabilities (including section 179 expense allowances) | S179TL |
| • Effective date of the section 179 valuation required for output (31 st March 2006) | OutputDate |

3.2 Inputs

The section 179 valuation results as supplied to the Board or as given previously on the Scheme Return issued by the Pensions Regulator (section 22):

| | |
|--|-----------------|
| • Assets for section 179 valuation purposes | S179InputAss |
| • External liabilities deducted from asset figure above | S179InputExLiab |
| • Date of relevant accounts giving asset figure | RelAcDate |
| • Total values of protected liabilities | S179InputTL |
| • Liabilities for pensions in payment, possibly including expenses | S179InputPL |
| • Liabilities for deferred members, possibly including expenses | S179InputDL |

| | |
|---|-----------------|
| • Liabilities for active members, possibly including expenses | S179InputAL |
| • Estimated costs of windup (excluding benefit installation/payment) – not available if data from Scheme Return | S179InputWUExp |
| • Estimated expenses of benefit installation/payment – not available if data from Scheme Return | S179InputPayExp |
| • Effective date of the section 179 valuation | S179InputDate |

Information from Scheme Return

Information on scheme pensions increase policy (section 22)

| | |
|--|---------|
| • Information about the indexation of scheme benefits accruing pre 1997 (fixed increases/percentage of RPI/full RPI/capped RPI/none/other) | IndMeth |
|--|---------|

Scheme asset information in the Scheme Return (section 23) – percentages of the total assets as at the date of the last audited financial statement (note that this may be different from both the S179InputDate and the RelAcDate identified above; the value of assets at AssetDate is not known, and it may be rather different from S179InputAss where, for instance, a bulk transfer has taken place):

| | |
|--|-----------|
| • Insurance policies (excluding managed funds) | IP% |
| • Equities | Eq% |
| • Gilts/fixed interest products | FI% |
| • Property | Pr% |
| • Cash and deposits | Ca% |
| • Others (with details asked for) | Ot% |
| • Date of asset breakdown | AssetDate |

Numbers of members from the Scheme Return (section 6 of the Scheme Return)

| | |
|--------------------------|---------|
| • Active members | AMemNo |
| • Deferred members | DMemNo |
| • Pensioner members | PMemNo |
| • Pension credit members | PCMemNo |

Average ages of different classes of members (section 24)

| | |
|---------------------|--------|
| • Pensioner members | PAvAge |
| • Deferred members | DAvAge |
| • Active members | AAvAge |

4 The formulae

a) Transformation of liabilities from the section 179 basis on assumptions as at input date to the section 179 basis as at the output date

l) Strip out any expense allowance from liability figures for each class of membership if necessary

If input data have been obtained from a section 179 valuation certificate (understood to be by far the most usual case), the liabilities for each class of membership should have been stated excluding expenses, with the section 179 expenses given separately

So

$$S179InputPLNoExp = S179InputPL$$

$$S179InputDLNoExp = S179InputDL$$

$$S179InputALNoExp = A179InputAL$$

If input data have been taken from a Scheme Return, the liabilities for each class of membership may or may not include expenses

If $S179InputTL > (S179InputPL + S179InputDL + S179InputAL)$, the difference should be the amount of the expenses

So

$$S179InputPLNoExp = S179InputPL$$

$$S179InputDLNoExp = S179InputDL$$

$$S179InputALNoExp = A179InputAL$$

Otherwise

$$S179InputPLNoPayExp = S179InputPL - £350 \times PMemNo$$

$$S179InputALNoPayExp = S179InputAL - £500 \times AMemNo$$

$$S179InputDLNoPayExp = S179InputDL - £500 \times (DMemNo + PCMemNo)$$

$$\text{And } S179InputTLNoPayExp = S179InputPLNoPayExp + S179InputALNoPayExp + S179InputDLNoPayExp$$

$$S179InputPLNoExp = S179InputPLNoPayExp / (1 + S179InputExp\%)$$

$$S179InputDLNoExp = S179InputDLNoPayExp / (1 + S179InputExp\%)$$

$$S179InputALNoExp = S179InputALNoPayExp / (1 + S179InputExp\%)$$

Where $(1 + S179InputExp\%) = 103\%$
if $S179InputTLNoPayExp < £51.5 \text{ million}$,

$$= (1.02 \times S179InputTLNoPayExp) / (S179InputTLNoPayExp - £0.5 \text{ million})$$

if $£51.5 \text{ million} < S179InputTLNoPayExp < £102.5 \text{ million}$,

$$= (1.01 \times S179InputTLNoPayExp) / (S179InputTLNoPayExp - £1.5 \text{ million})$$

if $S179InputTLNoPayExp > £102.5 \text{ million}$

II) Divide the liabilities between those accrued before and after April 1997 (different indexation)¹

$$S179InputPLPre97 = S179InputPLNoExp \times 0.9$$

$$S179InputPLPost97 = S179InputPLNoExp \times 0.1$$

$$S179InputDLPre97 = S179InputDLNoExp \times 0.8$$

$$S179InputDLPost97 = S179InputDLNoExp \times 0.2$$

$$S179InputALPre97 = S179InputALNoExp \times 0.6$$

$$S179InputALPost97 = S179InputALNoExp \times 0.4$$

¹ These average values for the proportions of pensioner, deferred pensioner and active liabilities that relate to service before April 1997 are estimates which are assumed to apply to the aggregate of all schemes.

III) Rate up section 179 liabilities to reflect full rather than 90% liabilities, and to remove effect of capping

$$S179InputNoCapPLPre97 = S179InputPLPre97 / 0.97$$

$$S179InputNoCapPLPost97 = S179InputPLPost97 / 0.97$$

$$S179InputNoCapDLPre97 = S179InputDLPre97 / (0.98 \times 0.9)$$

$$S179InputNoCapDLPost97 = S179InputDLPost97 / (0.98 \times 0.9)$$

$$S179InputNoCapALPre97 = S179InputALPre97 / (0.98 \times 0.9)$$

$$S179InputNoCapALPost97 = S179InputALPost97 / (0.98 \times 0.9)$$

Factors for cap and benefit cut back (0.97, 0.98 and 0.9) as in section C. These factors are not particularly important, as they will cancel out later on in section C of the calculation.

IV) Convert from section 179 economic assumptions at S179InputDate to section 179 basis (all benefits, not just PPF protected benefits) as at OutputDate²

Pensioner liabilities

$$S179FullPLPre97@S179InputDate = S179InputNoCapPLPre97 \times \frac{\text{annuityfactor2}(S179rate@OutputDate)}{\text{annuityfactor1}(S179rate@S179InputDate)}$$

For pre 1997 liabilities annuityfactor2(S179rate@OutputDate) varies according to the scheme pension increases (indicated by IndMeth) as well as on economic conditions at OutputDate. Note that annuityfactor2 cancels with the factor of the same name used at stage (c)(I) of the conversion process, and the assumptions for it are therefore not crucial to the final result.

annuityfactor1 (with PPF indexation, that is none for pre 1997 benefits) discount rate

- Rate based on annualised yield on FTSE Actuaries Government 10 year Fixed Interest Index.

² Note that annuity and deferred annuity factors based on section 179 economic assumptions as at OutputDate but full scheme benefits cancel out with those used in stage (c)(I), so that assumptions for them are not crucial to the final results.

For post 1997 liabilities, assume that indexation is at statutory minimum requirements, that is, in line with RPI with a 5% a year cap.

$$S179FullPLPost97@S179InputDate \\ = S179InputNoCapPLPost97 \times \frac{\text{annuityfactor4}(S179rate@OutputDate)}{\text{annuityfactor3}(S179rate@S179InputDate)}$$

For post 1997 liabilities $\text{annuityfactor4}(S179rate@OutputDate)$ is based on an assumption that scheme benefits include increases at the minimum statutory rate, that is in line with increases in the Retail Prices Index capped at 5% each year. Note that annuityfactor4 cancels with the factor of the same name used at stage (c)(I) of the conversion process, and the assumptions for it are therefore not crucial to the final result.

annuityfactor3 (with PPF indexation, that is in line with increases in the Retail Prices Index capped at 2.5% each year) discount rate:

- Index-linked gilt yields (average of Government Securities Index-linked annualised real yields over 5 years assuming 0% and 5% inflation) – 0.5%

General assumptions for annuity factors

- Mortality: PMA92mc (U=S179InputDate or OutputDate as appropriate)
- Age: average age of pensioners from section 24 of Scheme Return
- Sex: male
- Spouse's proportion: 0.5
- Proportion married: 80%
- Wife three years younger than member

Non-pensioner liabilities

$$S179FullDLPre97@S179InputDate \\ = S179InputNoCapDLPre97 \times \frac{\text{defannuityfactor2}(S179rate@OutputDate)}{\text{defannuityfactor1}(S179rate@S179InputDate)}$$

$$S179FullALPre97@S179Inputdate \\ = S179InputNoCapALPre97 \times \frac{\text{defannuityfactor4}(S179rate@OutputDate)}{\text{defannuityfactor3}(S179rate@S179InputDate)}$$

Post-retirement discount rates:

$\text{defannuityfactor2}(S179rate@OutputDate)$ and $\text{defannuityfactor4}(S179rate@OutputDate)$ vary according to the scheme pension increases (indicated by IndMeth) as well as on economic conditions at OutputDate.

defannuityfactor1 and defannuityfactor3 – post-retirement discount rates relate to non-indexed pensions:

- Rate based on conventional gilt yield (annualised yield on FTSE Actuaries Government 10 year Fixed Interest Index)

Pre-retirement discount rates

defannuityfactor2 and defannuityfactor4 reflect full scheme revaluation (assumed to be the statutory revaluation requirement as applying to all rights in respect of leavers since 1 Jan 1991).

defannuityfactor1 and defannuityfactor3 – pre-retirement discount rates reflect PPF protected liabilities level of revaluation, therefore use:

- Average of FTSE Actuaries Government Securities Index-Linked annualised real yields >15 years assuming 0% and 5% inflation as at InputDate – 0.5%

Note that defannuityfactor2(S179rate@OutputDate) and defannuityfactor4(S179rate@OutputDate) cancel with the factors of the same names used at stage (c)(l) of the conversion process, and therefore the assumptions for them are therefore not crucial to the final result.

For post 1997 liabilities, assume that scheme indexation is at statutory minimum requirements, that is, in line with RPI with a 5% a year cap.

S179FullDLPost97@S179InputDate

$$= S179InputNoCapDLPost97 \times \frac{\text{defannuityfactor6}(S179rate@OutputDate)}{\text{defannuityfactor5}(S179rate@S179InputDate)}$$

S179FullALPost97@S179InputDate

$$= S179InputNoCapALPost97 \times \frac{\text{defannuityfactor8}(S179rate@OutputDate)}{\text{defannuityfactor7}(S179rate@S179InputDate)}$$

Post retirement discount rates:

defannuityfactor6(S179rate@OutputDate) and defannuityfactor8(S179rate@OutputDate) assume that scheme benefits increase at the minimum statutory rate, that is, in line with increases in the Retail Prices Index capped at 5% a year.

defannuityfactor5 and defannuityfactor7 (with PPF indexation, that is in line with increases in the Retail Prices Index capped at 2.5% each year):

- Index-linked gilt yields (average of Government Securities Index-linked annualised real yields > 5 Years assuming 0% and 5% inflation) – 0.5%

Pre-retirement discount rates:

defannuityfactor6 and defannuityfactor8 as defannuityfactor2 and defannuityfactor4. defannuityfactor5 and defannuityfactor7 as defannuityfactor1 and defannuityfactor3.

Note that `defannuityfactor6(S179rate@OutputDate)` and `defannuityfactor8(S179rate@OutputDate)` cancel with the factors of the same names used at stage (c)(l) of the conversion process, and therefore the assumptions for them are therefore not crucial to the final result.

Generally $\text{defannuityfactor}() = (1 / (1 + i)^t) \times \text{annuityfactor}()$, as no allowance for mortality before retirement.

t = period to retirement,

taken as (normal pension age – average age of members in question³).

General assumptions for annuity/deferred annuity factors

- Mortality: PMA92mc (U=S179InputDate or OutputDate as appropriate)
- Normal pension age: 63
- Age: average age of actives/deferreds (as appropriate) from section 24 of Scheme Return
- Sex: male
- Spouse's proportion: 0.5
- Proportion married at retirement: 80%
- Wife three years younger than member

³ Where average ages have not been given by schemes, a prudent assumed average age will be used.

b) Moving assets forward from RelAcDate to OutputDate and the liabilities forward from S179InputDate to OutputDate

I) Liabilities

$$S179FullPLPre97@OutputDate = S179FullPLPre97@S179InputDate \times (1 + i)^{(OutputDate - S179InputDate)}$$

$$S179FullDLPre97@OutputDate = S179FullDLPre97@S179InputDate \times (1 + i)^{(OutputDate - S179InputDate)}$$

$$S179FullALPre97@OutputDate = S179FullALPre97@S179InputDate \times (1 + i)^{(OutputDate - S179InputDate)}$$

Time periods (OutputDate – S179InputDate) measured in years and fractions of years.

And similarly for post 1997 liabilities

i = annualised yield on the FTSE Actuaries Government 15-Year Fixed Interest index as at OutputDate

II) Assets

Reflect returns likely to have been earned on schemes' actual assets using, as far as possible, published information about returns on assets in different classes.

If AssetDate = RelAcDate,

$$\begin{aligned} \text{Equities@RelAcDate} &= S179InputAss \times Eq\% \\ \text{FI@RelAcDate} &= S179InputAss \times FI\% \\ \text{Prop@RelAcDate} &= S179InputAss \times Pr\% \\ \text{Cash@RelAcDate} &= S179InputAss \times Ca\% \\ \text{Insurance@RelAcDate} &= S179InputAss \times IP\% \\ \text{Other@RelAcDate} &= S179InputAss \times Ot\% \end{aligned}$$

Then,

$$\begin{aligned} \text{Equities@OutputDate} \\ = \text{Equities@RelAcDate} \times \text{EqRet}(\text{OutputDate}, \text{RelAcDate}) \end{aligned}$$

Where

$$\begin{aligned} \text{EqRet}(\text{Outputdate}, \text{RelAcDate}) \\ = 55\% \times \left(\frac{\text{FTSE-Allshare TRI@OutputDate}}{\text{FTSE-Allshare TRI@RelAcDate}} \right) + \\ 45\% \times \left(\frac{\text{MSCI World (gross) Total Return Index@OutputDate}}{\text{MSCI World (gross) Total Return Index@RelAcDate}} \right)^4 \end{aligned}$$

⁴ MSCI index expressed in £ sterling terms

$$FI@OutputDate = \frac{FI@RelAcDate \times FTSE\text{-}UK \text{ gilt TRI}@OutputDate}{FTSE\text{-}UK \text{ gilt TRI}@RelAcDate}$$

$$Prop@OutputDate = Prop@RelAcDate \times EqRet(OutputDate, RelAcDate)$$

$$Cash@OutputDate = Cash@RelAcDate \times (1 + Cashreturn\%(RelAcDate, OutputDate))$$

Cashreturn% estimated by rolling up Bank of England base rate from RelAcDate to OutputDate

$$Insurance@OutputDate = Insurance@RelAcDate \times \text{Composite roll-up factor created based on 50\% of the fixed interest roll-up factor above, 25\% of the equity roll-up factor and 25\% of the cash roll-up factor}$$

$$Other@OutputDate = Other@RelAcDate \times (1 + Cashreturn\%(RelAcDate, OutputDate))$$

$$S179Ass = S179Ass@OutputDate = Equities@OutputDate + FI@OutputDate + Prop@OutputDate + Cash@OutputDate + Insurance@OutputDate + Other@OutputDate$$

If AssetDate is earlier than RelAcDate

Derive the asset distribution at RelAcDate based on the given asset distribution at AssetDate, allowing for differential asset returns based on information on returns on different investments in the period AssetDate to RelAcDate. This is done using the formulae above. The asset distribution at RelAcDate is thereby calculated by normalising the total to 100%.

If AssetDate is later than RelAcDate,

Derive the asset distribution at RelAcDate based on the given asset distribution at AssetDate, allowing for differential asset returns based on information on returns on different investments in the period 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 assets distribution at RelAcDate is thereby calculated by normalising the total to 100%.

c) Allowing for PPF benefit levels in the moved forward liabilities

l) Conversion to protected liabilities

Pensioner liabilities

Different indexation in the PPF compared to the scheme rules (as reflected in the value of the liabilities after stage (a) and therefore in the S179Full*L variables calculated above).

S179PPFIndexPLPre97

$$= S179FullPLPre97@Outputdate \times \frac{\text{annuityfactor1}(S179rate@OutputDate)}{\text{annuityfactor2}(S179rate@OutputDate)}$$

annuityfactor1 and annuityfactor2 defined as in stage (a)(IV). Note that annuityfactor2(S179rate@OutputDate) cancels with the factor of the same name at stage (a)(IV), and the assumptions for it are therefore not crucial to the final result.

S179PPFIndexPLPost97

$$= S179FullPLPost97@Outputdate \times \frac{\text{annuityfactor3}(S179rate@OutputDate)}{\text{annuityfactor4}(S179rate@OutputDate)}$$

annuityfactor3 and annuityfactor4 defined as at stage (a)(IV). Note that annuityfactor4(S179rate@OutputDate) is the same as the factor of the same name at stage (a)(IV), and the assumptions for it are therefore not crucial to the final result.

Cut-backs to 90% and the cap for those under scheme normal pension age. These will affect only a small proportion of cases. Use a simple proportion, constant for all schemes of 97%.

S179CutbackPL

$$= 0.97 \times (S179PPFIndexPLPre97 + S179PPFIndexPLPost97)$$

Non-pensioner liabilities

Different indexation in payment and revaluation in deferment

$$\begin{aligned} S179PPFIndexDLPre97 \\ = S179FullDLPre97 @OutputDate \times \frac{\text{defannuityfactor1}(S179rate@OutputDate)}{\text{defannuityfactor2}(S179rate@OutputDate)} \end{aligned}$$

$$\begin{aligned} S179PPFIndexALPre97 \\ = S179FullALPre97 @OutputDate \times \frac{\text{defannuityfactor3}(S179rate@OutputDate)}{\text{defannuityfactor4}(S179rate@OutputDate)} \end{aligned}$$

defannuityfactor1, defannuityfactor2, defannuityfactor3 and defannuityfactor4 defined as at stage (a)(IV). Note defannuityfactor2(S179rate@OutputDate) and defannuityfactor4(S179rate@OutputDate) cancel with the factors of the same names in stage (a)(IV), and therefore the assumptions for them are not crucial to the final result.

$$\begin{aligned} S179PPFIndexDLPost97 \\ = S179FullDLPost97 @OutputDate \times \frac{\text{defannuityfactor5}(S179rate@OutputDate)}{\text{defannuityfactor6}(S179rate@OutputDate)} \end{aligned}$$

$$\begin{aligned} S179PPFIndexALPost97 \\ = S179FullALPost97 @OutputDate \times \frac{\text{defannuityfactor7}(S179rate@OutputDate)}{\text{defannuityfactor8}(S179rate@OutputDate)} \end{aligned}$$

defannuityfactor5, defannuityfactor6, defannuityfactor7 and defannuityfactor8 defined as at stage (a)(IV). Note defannuityfactor6(S179rate@OutputDate) and defannuityfactor8(S179rate@OutputDate) cancel with the factors of the same names in stage (a)(IV), and therefore the assumptions for them are not crucial to the final result.

Cap

$$\begin{aligned} S179CutbackDL \\ = (S179PPFIndexDLPre97 + S179PPFIndexDLPost97) \times \text{CapD} \end{aligned}$$

$$\begin{aligned} S179CutbackAL \\ = (S179PPFIndexALPre97 + S179PPFIndexALPost97) \times \text{CapA} \end{aligned}$$

$$\text{CapD} = \text{CapA} = 0.98$$

Application of the 90% factor

$$S17990DL = 0.90 \times S179CutbackDL$$

$$S17990AL = 0.90 \times S179CutbackAL$$

II) Application of section 179 expenses

If input data have been taken from a section 179 valuation certificate,

$$S179PayExp = S179InputPayExp$$

If input data have been taken from a Scheme Return AND if
 $S179InputTL > (S179InputPL + S179InputDL + S179InputAL)$

$$\begin{aligned} S179PayExp &= S179InputTL - (S179InputPL + S179InputDL + S179InputAL) \\ &\quad - S179InputWUExp \end{aligned}$$

Where $S179InputWUExp =$

If $(S179InputPL + S179InputDL + S179InputAL) < \text{£}50$ million,
 $(S179InputPL + S179InputDL + S179InputAL) \times 0.03$

If $(S179InputPL + S179InputDL + S179InputAL) > \text{£}50$ million and
 $< \text{£}100$ million,
 $(S179InputPL + S179InputDL + S179InputAL) \times 0.02 + \text{£}0.5$
million

If $(S179InputPL + S179InputDL + S179InputAL) > \text{£}100$ million,
 $(S179InputPL + S179InputDL + S179InputAL) \times 0.01 + \text{£}1.5$
million

Otherwise

$$\begin{aligned} S179PayExp &= \text{£}350 \times PMemNo + \text{£}500 \times (AMemNo + DMemNo + PCMemNo) \end{aligned}$$

In all cases

$S179WUExp =$

If $(S179CutbackPL + S17990DL + S17990AL) < \text{£}50$ million,
 $(S179CutbackPL + S17990DL + S17990AL) \times 0.03$

If $(S179CutbackPL + S17990DL + S17990AL) > \text{£}50$ million and
 $< \text{£}100$ million,
 $(S179CutbackPL + S17990DL + S17990AL) \times 0.02 + \text{£}0.5$ million

If $(S179CutbackPL + S17990DL + S17990AL) > \text{£}100$ million,
 $(S179CutbackPL + S17990DL + S17990AL) \times 0.01 + \text{£}1.5$ million

$$S179Exp = S179PayExp + S179WUExp$$

III) Total liabilities on Section 179 basis

$$S179TL = S179CutbackPL + S17990DL + S17990AL + S179Exp$$

Summary of discount rate assumptions to be used in calculating annuity factors relevant to pensions with different levels of indexation and revaluation

Section 179 basis

The rates to be used at the initial stage (a)(IV) and the final conversion stage (c)(I), where the benefits considered are “protected liabilities” on the section 179 basis, are those laid out in the PPF’s guidance on performing section 179 valuations. The only discount rates needed are:

| Level of pensions increases in payment | | Discount rate to use |
|--|------|--|
| RPI to maximum of: | 2.5% | 50% of the sum of the FTSE Actuaries Government Securities Index-Linked Real Yields over 5 years assuming 5% inflation and 0% inflation – 0.5% |
| None | | Annualised yield on FTSE Actuaries Government 10 Year Fixed Index |

Revaluation assumptions for pre-retirement discount rates

For the section 179 results for protected liabilities at the initial and final stages, use:

50% of the sum of the FTSE Actuaries Government Securities Index-Linked Real Yields over 15 years assuming 5% inflation and 0% inflation – 0.5% as in the PPF’s section 179 valuation guidance.

Other discount rates, both pre and post retirement, for annuity and deferred annuity factors for full scheme benefits on the section 179 basis are not crucial to the final result, as the relevant annuity and deferred annuity factors cancel out.