Government Actuary's Department

Fire & Police: McCloud contribution adjustment calculations

Introduction

1.1 This note is to assist scheme administrators of the Police and Fire Pension Schemes to understand and calculate the appropriate member contribution adjustments as part of the McCloud remedy exercise.

1.2 This note covers the outputs of the calculator and a guide to how interest can be applied.

Outputs

1.3 The *Simplified Output* sheet in the calculator has 7 different output sections which cover each of the different options and payment conditions.

1.4 At the highest level, these outputs can be split into the following categories:

- Option 1 – calculates contribution adjustment assuming legacy scheme service during the remedy window (Green columns E to O).
- Option 2 – calculates contribution adjustment assuming CARE scheme service during the remedy window (Red columns P to Z).
- Added pension – calculates refunds on added pension purchased during the remedy window (Purple columns AA to AC).

The different sections of the Option 1 and Option 2 outputs are described from 1.6 below.

1.5 We would not expect every section to return values for all members as under some circumstances the output would be zero as the correct contributions have been paid. An example would be an unprotected member has paid CARE contributions throughout the remedy window and so option 2 will return zero adjustment.

1.6 For Option 1 and Option 2 the output is further broken down by the members circumstances and payment method. These are based on the wording used in the regulations. For reference we have included screen shots from the Option 1 section.

1.7 **Compensation owed to a member**

Compensation (money owed to the member by the scheme)			
Option 1 Compensation Total adjustment	Option 1 Compensation Contribution adjustment	Option 1 Compensation PAYE tax adjustment	Option 1 Compensation Interest adjustment

1.8 The compensation section is for members who are owed a return of contributions from the scheme. This includes a tax adjustment as the member tax position would have been different had the correct contributions been paid during the remedy window.

1.9 Interest for the compensation sections is calculated at 8% simple interest per year. This is covered in the interest section below.

1.10 The main group which will have figures in this section under option 1 are members being rolled back into the 2006 Scheme.

1.11 **Contributions owed by a member**

1.12 Members who owe money to the scheme are split into two groups, defined in the regulations as “active” and “non-active”, which relates to their expected payment method rather than their employment status. We set out our understanding of each type of member below.

1.13 We understand for members paying the owed amount as a lump sum (ie Firefighters in England and police officers in England & Wales) will generally not be paying through PAYE due to the size of the amount owed. These members are expected to pay the amount owed a post-tax source or from their benefits at retirement. Such members are considered as “non-active” under the contribution regulations.

1.14 Members in other jurisdictions who have access to and elect for a periodic payment plan may pay their contributions monthly through PAYE and are therefore considered “active” under the contribution regulations.

1.15 For both active and non-active members who owe contributions interest applied is based on NS&I rates on a compounding basis. This is covered in the interest section below.

1.16 **Actives (Paid pre-tax)**

Contributions for actives (money owed to the scheme by the member)		
Option 1 Contributions (actives) Total adjustment	Option 1 Contributions (actives) Contribution adjustment	Option 1 Contributions (actives) Interest
£497.37	£480.34	£17.03

1.17 This output should be used for a member owing the scheme additional contributions and is expected to pay this amount through a reduction to their pay (see 1.14).

1.18 Members paying through their salary will have the additional contribution deducted from their pre-tax income and therefore no tax adjustment is made for these members.

1.19 **Non-Actives (paid post tax)**

Contributions for non-actives (money owed to the scheme by the member)			
Option 1 Contributions (non-actives) Total adjustment	Option 1 Contributions (non-actives) Contribution	Option 1 Contributions (non-actives) PAYE tax adjustment	Option 1 Contributions (non-actives) Interest adjustment
£397.97	£480.34	-£96.00	£13.63
£949.24	£1,124.74	-£225.00	£49.50

1.20 This output should be used for a member owing the scheme additional contributions and is expected to pay this amount through a method other than a reduction to pay. For example, lump sum payment from savings or an offsetting of benefits at retirement (see 1.13).

1.21 Members paying through these methods have had a tax adjustment applied as the payment will be made from post-tax income/savings.

1.22 The non-active group can also contain members who are still active in the workforce/pension scheme but have chosen to pay the outstanding contributions from savings/offsetting benefits.

Interest

1.23 This section sets out a guide to each of the types of interest used in the calculator. Firstly, in general terms and then the specifics of how these are used in this calculator.

1.24 **Simple interest**

1.25 Simple interest applies and interest is charged to the amount owed each period, but no interest is charged on previous interest accrued.

1.26 For example, if £100 is owed at a simple rate of 3% per year, after the first year the interest is £3 and total owed is £103. In the second year the interest is again £3 and the total owed is £106.

1.27 Overall, the interest owed can be calculated as original amount owed x (n x 3%), where n is the number of years interest applies over.

1.28 The total amount owed is the original amount owed x (1 + (n x 3%)).

1.29 In our example after 10 years at 3% the interest on £100 would be £30 (100 x 10 x 3%) and the total amount owed would be £130.

1.30 The application of simple interest in the calculator is done in exactly this way but the rate applied is 8% as per regulations.

1.31 **Compound interest**

1.32 Compound interest applies interest to both the original amount outstanding and also to any interest accrued previously.

1.33 In the first year of our example the compound interest at 3% on £100 owed is the same as in the simple interest case. £3 interest for a total owed of £103.

1.34 However, in the second year the 3% interest applied to the £103 total owed. This gives interest of £3.09 for a total owed of £106.09.

1.35 Under compound interest the total owed at the end of year n is original amount owed x $(1+3\%)^n$.

1.36 In our example after 10 years the amount owed is £100 x $(1.03)^{10}$ = £134.39. The total interest is found by subtracting the original amount owed from the total owed: £134.39 - £100 = £34.39.

1.37 Under compound interest, the interest amount can be compounded using different time frames, for example, daily, monthly, or annual. The simple example calculation above uses an annual interest rate. However, the regulations require that compound interest on contributions owed is compounded daily. This is set out in the following section.

1.38 Additionally, the interest rate required to be used for contributions owed is not fixed but moves with the NS&I rates which are explained in the section below.

1.39 **NS&I rates**

1.40 The regulations require interest on contributions owed to be calculated based on NS&I direct saver rates. These are updated at irregular intervals to reflect economic conditions. The table below summarises all the rates during the remedy window.

Effective from	Gross/AER (taxable)
8 Mar 10	2.00%
19 Jul 10	1.75%
25 Jan 12	1.50%
12 Sep 13	1.10%
6 Jun 16	0.80%
1 May 17	0.70%
1 Dec 17	0.95%
1 Oct 18	1.00%
24 Nov 20	0.15%
29 Dec 21	0.35%
10 Feb 22	0.50%
21 Jul 22	1.20%
25 Oct 22	1.80%
13 Dec 22	2.30%
24 Jan 23	2.60%
14 Feb 23	2.85%
13 Jul 23	3.40%
18 Aug 23	3.65%

1.41 The example below shows how this works in practise for £100 owed since 1 April 2015 with interest calculated up to 1 October 2023.

A. Effective from	B. Annual Rate	C. Daily rate	D. Days applicable for	E. Rate Applicable	F. 1 + Rate Applicable
1 Apr 15	1.10%	0.0030%	432	1.30%	1.0130
6 Jun 16	0.80%	0.0022%	329	0.72%	1.0072
1 May 17	0.70%	0.0019%	214	0.41%	1.0041
1 Dec 17	0.95%	0.0026%	304	0.79%	1.0079
1 Oct 18	1.00%	0.0027%	785	2.16%	1.0216
24 Nov 20	0.15%	0.0004%	400	0.16%	1.0016
29 Dec 21	0.35%	0.0010%	43	0.04%	1.0004
10 Feb 22	0.50%	0.0014%	161	0.22%	1.0022
21 Jul 22	1.20%	0.0033%	96	0.31%	1.0031
25 Oct 22	1.80%	0.0049%	49	0.24%	1.0024
13 Dec 22	2.30%	0.0062%	42	0.26%	1.0026
24 Jan 23	2.60%	0.0070%	21	0.15%	1.0015
14 Feb 23	2.85%	0.0077%	149	1.15%	1.0115
13 Jul 23	3.40%	0.0092%	36	0.33%	1.0033
18 Aug 23	3.65%	0.0098%	44	0.43%	1.0043
				Total interest	1.0902
				or	9.02%

1.42 Therefore, the total owed is £109.02 (£100 x 1.0902) of which £9.02 is interest.

1.43 Below are some notes on each of the columns in the table above.

1.44 The daily rate (C) is $(1+B)^{1/365.25} - 1$, where B is the annual rate. This covert column B into a daily compounding rate which is equal to the annual rate.

1.45 Days applicable (D) refers to the period under each annual rate. The first period is set to start on the 1 April 2015 and the last period ends on 1 October 2023.

1.46 The Rate Applicable (E) is found as $(1+ \text{daily rate})^{\text{days applicable}}$. This is the total compounded interest for the period in question.

1.47 The total interest is the product of each (1 + rate applicable) (column F). The use of a product means we have total compound interest for the full period.

That is 1.0902 = 1.0130 x 1.0072 x … x 1.0033 x x1.0043

1.48 The same method works for all interest start dates.