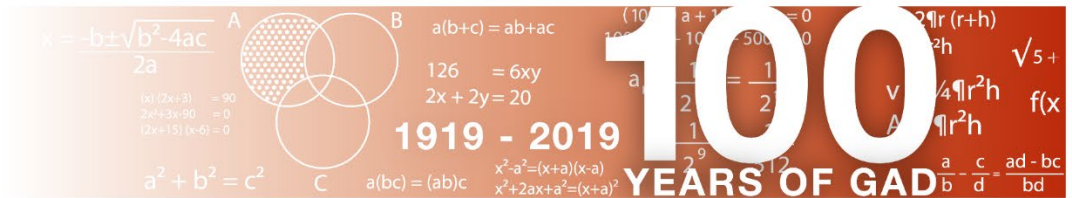




Government
Actuary's
Department



Civil Servants and Others Pension Scheme (CSOPS)

Enhanced Effective Pension Age (EEPA) and Effective Pension Age (EPA) options for alpha members

Contribution rates, 'headroom' calculation factors and guidance

Date: 1 August 2019





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1 Introduction

This report is addressed to the Cabinet Office as scheme manager of the Civil Servants and Others Pension Scheme ('CSOPS' or **alpha** scheme). The **alpha** scheme was established by The Public Service (Civil Servants and Others) Pensions Regulations 2014 (SI 2014/1964) (the 'Regulations') and came into force on 1 April 2015.

The purpose of this note is to provide Cabinet Office with specific factors, and accompanying guidance to demonstrate how EEPA (enhanced effective pension age) and EPA (effective pension age) costs are calculated within the **alpha** scheme. This report also provides factors and guidance for assessing the value of the EPA and EEPA options against the overall limit of extra pension (the 'headroom test').

This note also clarifies how NPA is determined.

This report is applicable to benefits accruing in the **alpha** scheme only and provides advice on:

- EEPA 65 option cost factors – for eligible members opting to buy an enhanced effective pension age of 65 years;
- EEPA 60 option cost factors – for eligible members who additionally opt to buy an enhanced effective pension age of 60;
- EPA option cost factors – for eligible members opting to buy an effective pension age of 1, 2 or 3 years prior to their normal pension age (NPA), or age 65; and
- 'Headroom' calculation factors – for determining the value of an EPA or EEPA option against the overall limit of extra pension.

EEPA cost calculations are contained in Section 2. EPA cost calculations are contained in Section 3. Section 4 covers the headroom calculations applicable for EPA and EEPA. Appendices A to F contain the EEPA, EPA and headroom calculation factors and worked examples.

- 1.1 The factors provided in this note have been prepared in light of our advice to the Cabinet Office dated 30 October 2018 and its instructions following that advice.
- 1.2 This guidance is intended to supersede any advice previously issued, for the purposes of EPA, EEPA and Headroom calculations. No advice or factors issued in the past should be used for cases after this date. In particular, this guidance supersedes:



"Civil Service (and Others) Pension Scheme (CSOPS): Enhanced Effective Pension Age (EEPA) and Effective Pension Age (EPA) options for alpha members. Contribution rates, 'headroom' calculation factors and guidance" dated 30 June 2015.

and

Addendum to GAD guidance note "Enhanced Effective Pension Age (EEPA) and Effective Pension Age (EPA) options for alpha members. Contribution rates, 'headroom' calculation factors and guidance" dated 13 June 2016.

- 1.3 The factors in this note have been updated but the calculation methodology remains unchanged.
- 1.4 Details of the principal assumptions underlying the factor tables in this guidance are set out in Appendix G. Some important limitations are set out in Appendix H.

Scheme regulations

The provisions relating to EPA options, EEPA options and 'headroom' calculations are set out as follows:

- EPA: Schedule 1 Part 3 of the Regulations
- EEPA: Schedule 1 Part 4 of the Regulations
- Headroom calculations: Schedule 1 Part 1 of the Regulations

The factors to determine costs for an EPA (or an EEPA) option, and for headroom calculations, are the responsibility of the scheme manager after having taken advice from the scheme actuary.

Assumptions

The assumptions underlying the factors provided in this guidance note can be found in Appendix G.

Cases not covered by this note

We produced factors for NPA's of 66, 67 and 68 covering the range currently applicable. GAD and/or Cabinet Office should be contacted if NPA's of 69 and over are required.

We do not envisage any other special cases not covered by this note. However, if any do occur they should be referred to GAD.

Implementation and Review

- 1.5 This factors contained in this guidance will apply from 1 April 2019. This implementation date has been determined by the Cabinet Office. This guidance will apply with immediate effect upon receipt of the respective guidance.



- 1.6 This guidance has been written for pension administrators and assumes some knowledge of general pension terminology, and some familiarity with retirement calculations for the CSOPS. Any questions concerning the application of the guidance should, in the first instance, be referred to the Cabinet Office.
- 1.7 In line with best practice and in order to make sure that factors are being used as intended and the instructions are fit for purpose, we suggest that some example calculations are sent to GAD for review.
- 1.8 The factors contained in this guidance will be subject to review periodically. This will depend on external circumstances, for example whenever there is a change in the SCAPE basis; when changes in the actuarial assumptions adopted for other scheme factors take place; or following each future actuarial valuation where mortality and other relevant experience is reviewed or if other credible and material information comes to light.

Third Party Reliance

- 1.9 This guidance has been prepared for the use of the Cabinet Office and the scheme administrators for the purposes of demonstrating the application of the factors covered by this guidance only. This guidance may be published on Cabinet Office and scheme administrator's website but must not otherwise be reproduced, distributed or communicated in whole or in part to any other person without GAD's prior written permission.
- 1.10 Other than Cabinet Office and the scheme administrators, no person or third party is entitled to place any reliance on the contents of this guidance, except to any extent explicitly stated herein. GAD has no liability to any person or third party for any action taken or for any failure to act, either in whole or in part, on the basis of this guidance, whether or not GAD has agreed to the disclosure of its advice to the third party.



2 EEPA Contribution rates

The tables in Appendix A set out the following factors:

- P2EEPA65 (Table 733 in consolidated factors spreadsheet) - Contribution rate in respect of the EEPA 65 option, payable in addition to standard member and employer contribution rates.
- P2EEPA60 (Table 734 in consolidated factors spreadsheet) - Contribution rate in respect of the EEPA 60 option, payable in addition to standard member contribution rate and also in addition to the EEPA 65 contribution rate.

EEPA contributions are payable in addition to standard member and employer contributions. This section sets out how the contribution rate is determined from the tables set out in Appendix A. The contribution rate should be applied to the member's pensionable earnings over the scheme year. Therefore any pensionable earnings fluctuations will impact on the amount of the contributions paid for the EEPA option.

The EEPA 65 option and EEPA 60 option contribution rates in the factor tables are expressed as a percentage of the member's pensionable earnings. At the start of each scheme year in which an EEPA option is in force (or operation), the member's age (complete years, ignoring part years) is determined and the contribution rate corresponding to their NPA¹ (in complete years and complete months, ignoring part months) is taken from the relevant EEPA 65 option (or EEPA 60 option) table. The scheme manager needs to inform members of their new additional EEPA contribution rate each year. Note that contribution rates will increase annually with age, all else equal.

This means EEPA option contribution rates are effectively determined at each 1st April, but are applied to pensionable earnings over the scheme year, in the same manner as standard member and employer contributions.

The scheme manager maintains a list of those eligible for the EEPA 65 and EEPA 60 options.

EEPA 65

The cost of an EEPA 65 option is shared by the member and their employer. EEPA contributions are payable by the employee (in addition to standard member contributions) and the employer (in addition to employer contributions in accordance with current ASLC rates). The split of the EEPA 65 option contributions is determined by the scheme manager.

The total additional contribution in respect of the EEPA 65 option is determined as follows:

Total additional contribution in respect of the EEPA 65 option =

¹ Normal pension age in the alpha section is defined as a member's state pension age, or 65, if that is higher. For the purpose of this note, state pension age is as defined in legislation on the calculation date.



Pensionable earnings x P2EEPA65 contribution rate (age at 1st April)

The total additional contributions in respect of the EEPA of age 65 are split into member and employer proportions as follows:

Additional member contribution in respect of the EEPA 65 option =

Total additional contribution x (1 – Employer proportion)

Additional employer contribution in respect of the EEPA 65 option =

Total additional contribution x Employer proportion

Where:

Pensionable earnings are as defined in the Regulations².

Age at 1st April is the member's age in the complete years (ignoring part years) on 1st April.

P2EEPA65 contribution rate is taken from table P2EEPA65 appropriate for the member's age and NPA (in years and complete months, ignoring part months). Note that these percentages are total (member and employer) additional contribution rates.

Employer proportion is determined by the scheme manager and represents the employer's share of the total EEPA 65 option contributions.

EEPA 60

Where members opt to reduce their effective pension ages to 60 years, then they pay further additional contributions.

The EEPA 60 option is only available to those members who have taken the EEPA 65 option. Only the member pays additional contributions in respect of this option.

The additional member contribution in respect of the EEPA 60 option is payable in addition to the additional contributions in respect of the EEPA 65 option.

The additional member contributions in respect of the EEPA of age 60 are determined as follows:

Additional member contribution in respect of the EEPA 60 option =

Pensionable earnings x P2EEPA60 contribution rate (age at 1st April)

Where:

² The Public Service (Civil Servants and Others) Pensions Regulations 2014 (SI 2014/1964)



Pensionable earnings are as defined in the Regulations.

Age at 1st April is the member's age in the complete years (ignoring part years) on 1st April.

P2EEPA60 contribution rate is taken from table P2EEPA60 appropriate for the member's age.

Example calculations are shown in Appendix B.



3 EPA Contribution rates

Members can purchase a reduction in pension age of one, two or three years. This is limited by a requirement that the reduced pension age is at least 65 years (and so non-integer year reductions are possible). For example, where a member has a NPA of 66 years and 6 months they will be able to buy a reduction of 1 year or 1 year and 6 months.

The tables in Appendix C set out the following factors:

- P2EPA1 (Table 730 in consolidated factors spreadsheet) - Contribution rate in respect of the 1 year early EPA option, payable in addition to standard member and employer contribution rates.
- P2EPA2 (Table 731 in consolidated factors spreadsheet) - Contribution rate in respect of the 2 year early EPA option, payable in addition to standard member and employer contribution rates.
- P2EPA3 (Table 732 in consolidated factors spreadsheet) - Contribution rate in respect of the 3 year early EPA option, payable in addition to standard member and employer contribution rates.

The EPA option contribution rates in the factor tables are expressed as a percentage of the member's pensionable earnings.

EPA contributions are payable by members only, in addition to their standard member contributions. Their employer's contribution rate is unaffected by the EPA option. This section sets out how this additional contribution rate is determined from the tables set out in Appendix C. The contribution rate should be applied to the member's pensionable earnings over the scheme year. Therefore any pensionable pay fluctuations will impact on the amount of the contributions paid for the EPA option.

At the start of each scheme year in which the EPA option is in force (or operation), the member's age (complete years, ignoring part years) is determined and the contribution rate(s) corresponding to their NPA¹ (in complete years and whole months, with part months rounded up) is taken from the relevant EPA option table(s) (1 year, 2 years or 3 years earlier).

Where the minimum age of 65 years applies the reduction being purchased may not be an integer year reduction and it is necessary to interpolate between the rates from two EPA option tables to derive the correct contribution rate.

Note that contribution rates will increase annually with age, all else equal.

This means EPA option contribution rates are effectively determined at each 1st April, but are applied to pensionable earnings over the scheme year, in the same manner as standard member and employer contributions.

EPA for an integer number of years early



The additional member contribution in respect of the EPA option is determined as follows:

Additional member contribution in respect of the EPA option =

Pensionable earnings x P2EPAn contribution rate (age at 1st April)

Where:

Pensionable earnings are as defined in the Regulations³.

Age at 1st April is the member's age in the complete years (ignoring part years) on 1st April.

P2EPAn contribution rate is taken from table P2EPAn appropriate for the member's age and NPA (in years and whole months, with part months rounded up) and the number of years (n) earlier that the member wishes to retire before NPA.

EPA for a non-integer number of years early (minimum age of 65 years applies)

In order to derive the appropriate contribution rate where a non-integer year reduction is being purchased, it is necessary to interpolate between two contribution rates taken from separate P2EPAn tables.

The EPA contribution rate is derived as:

Non-integer reduction EPA contribution rate (P2EPAd) =

[Reduction (rounded up) – Reduction (exact)] x P2EPAn (Rounded down) contribution rate

+

[Reduction (exact) – Reduction (rounded down)] x P2EPAn (Rounded up) contribution rate

Where:

Reduction (Exact) is the number of years and whole months (part months rounded up) reduction to pension age that is being purchased.

Reduction (Rounded up) is the **Reduction (Exact)** rounded up to the nearest number of complete years.

Reduction (Rounded down) is the **Reduction (Exact)** rounded down to the nearest number of complete years.

³ The Public Service (Civil Servants and Others) Pensions Regulations 2014 (SI 2014/1964).



P2EPAn (Rounded up) contribution rate is taken from table P2EPAn appropriate for the member's age and NPA (in years and whole months, part months rounded up) and number of years **Reduction (Rounded up)**.

P2EPAn (Rounded down) contribution rate is taken from table P2EPAn appropriate for the member's age and NPA (in years and whole months, part months rounded up) and number of years **Reduction (Rounded down)**.

Where an EPA reduction of between 0 and 1 years is being purchased, it will be necessary to interpolate between the P2EPA1 (contribution rates for a 1 year reduction) table and a notional P2EPA0 (contribution rates for no reduction) table where all entries are set to zero.

The additional member contribution in respect of the EPA option are determined as follows:

Additional member contribution in respect of the EPA option =

Pensionable earnings x P2EPAd contribution rate (age at 1st April)

Where:

Pensionable earnings are as defined in the Regulations.

Age at 1st April is the member's age in the complete years (ignoring part years) on 1st April.

P2EPAd contribution rate is derived as set out in 3.11 above.

Example calculations are shown in Appendix D.



4 'Headroom' Calculations

The value of any EPA or EEPA option is to be taken into account when assessing whether a member can purchase (additional) added pension under the alpha scheme.

A member is only able to purchase (additional) added pension if there is available 'headroom'. This is assessed by comparing the value of any 'extra pension' (EPA or EEPA options plus any accrued added pension) against the 'overall limit of extra pension' ('headroom limit') as set out in Schedule 1 Part 1 of the Regulations. Cabinet Office confirmed that a member buying out the actuarial reduction on an early retirement pension is not subject to the headroom limit.

A member is only allowed to purchase an EPA or EEPA option if, at the commencement of the contract (i.e. when the initial application for an EPA (or EEPA) is submitted), the existing total extra pension is less than the overall limit on extra pension (i.e. there is headroom available). In other words, a member can purchase an EPA (or EEPA) option if prior to purchase there is headroom, even if the purchase of the option would mean that they subsequently exceed the limit on extra pension.

A member is only allowed to purchase (additional) added pension if the total extra pension (including the added pension the member intends to purchase) is less than the limit on extra pension at the commencement of the contract (i.e. there is headroom available to cover the expected additional added pension).

A 'prospective' EPA or EEPA option will be valued (by converting it into an equivalent added pension) at the start of the contract. When valuing the option it is assumed that the member continues to contribute to this option until their respective earlier pension age is reached (the purchase of the EPA (or EEPA) option is automatically renewed at the start of each scheme year).

The value of the option will not be recalculated for:

- any change to a member's actual NPA through new legislation;
- in response to future changes in headroom methodology or early retirement factors; or
- for the actual salary growth experienced by a member

Should a member cease contributing to the option before their earlier pension age is reached then the value of that option is no longer the prospective value determined at the start of the contract. The 'accrued' value of this EPA or EEPA option should be based on the period during which EPA (or EEPA) contributions were actually paid in respect of the option and not the full period to earlier pension age assumed when determining the prospective value of the option.



Calculations are required for:

- (i) determining the value of an EPA (or EEPA) option at the outset of the contract, and
- (ii) determining the value of an accrued EPA (or EEPA) option.

The headroom calculations effectively assume that part-time members will continue to work the same proportion of part-time hours for the remainder of their careers (full-time equivalent pensionable earnings are not used in the calculation).

Re-joiner

Schedule 1 Regulation 28 (4) sets out that where a member ceases to be in pensionable service under the Scheme and then re-enters after a gap in pension service of less than 5 years the EPA contributions can resume (subject to certain restrictions) without re-assessing their value against the headroom limit.

Where such a member who resumes an existing EPA (or EEPA) option, the value of the option would consist of the accrued value of the first part of the option, up to the time payments ceased and a new prospective value of option determined at the point in time when the contract restarted (based on the data at that time). If the member was to cease paying contributions to an EPA (or EEPA) option and then at a later date start paying into a new option (rather than resuming an existing option) then the combined value of the option would be determined in a similar manner (i.e. there will be accrued and prospective parts).

When a new option is started (as opposed to an existing option being resumed), then any accrued value of a ceased option, together with any other additional pension and prospective value of new contract, is assessed against the headroom limit. This may restrict the ability to take out the new contract.

The tables in Appendix E set out the following factors:

- P2HR1 – prospective accrual accumulation factor
- P2HRrev1 – revaluation factors

Determining the value of an EPA or EEPA option at outset of the contract

The main data required is:

- (i) Option commencement date (i.e., the date the initial application for an EPA (or EEPA) is effective from)
- (ii) Member's NPA¹ (normal pension age) in years and complete months
- (iii) Member's EPA or EEPA in years and complete months (i.e. relating to option being purchased)
- (iv) Member's pensionable earnings at option commencement date



The prospective value assessed assumes that the member continues to contribute to the EPA (or EEPA) option until the respective earlier pension age is reached. The calculation to determine the value of the prospective EPA (or EEPA) option is set out in a three stage process:

Stage 1: Estimate the prospective pension arising from future accrual at EPA (or at EEPA)

Prospective pension = Pensionable Earnings × P2HR1 factor

Where:

Pensionable Earnings is as defined in the Regulations.

P2HR1 factor is taken from table P2HR1 (in Appendix E) appropriate for the period (in years and complete months, ignoring part months) between the option commencement date and EPA (or EEPA).

Stage 2: Converting the prospective pension into equivalent added pension at EPA (or at EEPA)

Equivalent added pension at EPA (or at EEPA) =

$$\text{Prospective pension} \times [(1 / P2ER \text{ factor}_{NPA}) - 1]$$

Where:

P2ER factor_{NPA} is the early payment reduction factor from the latest version of our guidance note '*Early Payment Reduction (normal health) and Age Addition Factors: Factors and guidance for the alpha section*' (the 'ER note'). It is the factor at the member's age at EPA (in years and complete months) (or age at EEPA) taken from the P2ERXX table (Appendix A of ER note) relevant to the member's NPA. If a member has a non-integer NPA then more than one factor is required and these factors are interpolated to obtain the actual factor to use.

Stage 3: Expressing the equivalent added pension at EPA (or at EEPA) as an equivalent added pension at option commencement date (i.e. the value of EPA (or EEPA) option at outset)

Value of EPA (or EEPA) option at outset =

$$\text{Equivalent added pension at EPA (or EEPA)} / P2HRRev1 \text{ factor}$$

Where:

P2HRRev1 factor is the factor appropriate for the number of years (ignoring part years) between the option commencement date and EPA (or EEPA), from Appendix E.



As outlined in paragraph 4.14 it is assumed that a member will continue to contribute to the EPA (or EEPA) option until the respective earlier pension age is reached. The prospective value of an EPA (or EEPA) can be expressed as a percentage of the headroom limit in place at the outset of the contract. The formula is set out below:

Value of EPA (or EEPA) option at outset as % of headroom limit at outset

= Value of EPA (or EEPA) option at outset / headroom limit at outset

Where:

Value of EPA (or EEPA) option at outset is calculated from the three stage process in paragraph 4.14

Headroom limit at outset is the overall limit of extra pension at EPA (or EEPA) at option commencement date. Please see paragraph 4.2 for more information.

Determining the value of an accrued EPA (or EEPA) option

When an EPA (or EEPA) option lapses (i.e. contributions stop before selected EPA or EEPA), then the prospective value of the EPA (or EEPA) option should no longer be used to determine the value of the option. Any subsequent test against the headroom limit should use the accrued value of the EPA (or EEPA) option.

The accrued value is determined as a simple pro-rata calculation of the original prospective value of the EPA (EEPA) option based on the number of monthly EPA (or EEPA) contributions that had been paid divided by the number of monthly contributions that would have been paid between the EPA (or EEPA) option commencement date and date of original EPA (or EEPA).

This calculation is applied to the percentage of headroom limit that was determined for the original prospective EPA (or EEPA) option.

The formula is set out below:

Value of accrued EPA (or EEPA) option (as a % of headroom limit) =

Value of EPA (or EEPA) option at outset as % of headroom limit at outset
× [M / N]

Where:

Value of EPA (or EEPA) option at outset as % of headroom limit at outset as calculated in paragraph 4.15

M is the number of monthly EPA (or EEPA) contributions paid

N is the number of monthly contributions that would have been paid between the EPA (or EEPA) option commencement date and member's original EPA (or EEPA).



Should the value of accrued EPA and EEPA options be required at a later date then the proportion of the headroom limit calculated in paragraph 4.17 can simply be applied to the level of headroom limit in force at the later date.



Appendix A: Contribution rates for EEPA options

Table A1 (Table 733 in consolidated factors spreadsheet): P2EEPA65 - NPA 65 to 66

Age (complete years, ignoring part years)	P2EEPA65											
	Normal Pension Age (in years and complete months, ignoring part months)											
	Years	65										
Months	1	2	3	4	5	6	7	8	9	10	11	
20	0.06%	0.13%	0.19%	0.26%	0.32%	0.39%	0.45%	0.52%	0.58%	0.65%	0.71%	
21	0.07%	0.13%	0.20%	0.27%	0.33%	0.40%	0.47%	0.53%	0.60%	0.66%	0.73%	
22	0.07%	0.14%	0.20%	0.27%	0.34%	0.41%	0.48%	0.54%	0.61%	0.68%	0.75%	
23	0.07%	0.14%	0.21%	0.28%	0.35%	0.42%	0.49%	0.56%	0.63%	0.70%	0.77%	
24	0.07%	0.14%	0.21%	0.29%	0.36%	0.43%	0.50%	0.57%	0.64%	0.71%	0.78%	
25	0.07%	0.15%	0.22%	0.29%	0.36%	0.44%	0.51%	0.58%	0.66%	0.73%	0.80%	
26	0.07%	0.15%	0.22%	0.30%	0.37%	0.45%	0.52%	0.60%	0.67%	0.75%	0.82%	
27	0.08%	0.15%	0.23%	0.31%	0.38%	0.46%	0.54%	0.61%	0.69%	0.76%	0.84%	
28	0.08%	0.16%	0.23%	0.31%	0.39%	0.47%	0.55%	0.63%	0.70%	0.78%	0.86%	
29	0.08%	0.16%	0.24%	0.32%	0.40%	0.48%	0.56%	0.64%	0.72%	0.80%	0.88%	
30	0.08%	0.16%	0.25%	0.33%	0.41%	0.49%	0.57%	0.66%	0.74%	0.82%	0.90%	
31	0.08%	0.17%	0.25%	0.34%	0.42%	0.50%	0.59%	0.67%	0.76%	0.84%	0.92%	
32	0.09%	0.17%	0.26%	0.34%	0.43%	0.52%	0.60%	0.69%	0.77%	0.86%	0.95%	
33	0.09%	0.18%	0.26%	0.35%	0.44%	0.53%	0.62%	0.70%	0.79%	0.88%	0.97%	
34	0.09%	0.18%	0.27%	0.36%	0.45%	0.54%	0.63%	0.72%	0.81%	0.90%	0.99%	
35	0.09%	0.18%	0.28%	0.37%	0.46%	0.55%	0.65%	0.74%	0.83%	0.92%	1.01%	
36	0.09%	0.19%	0.28%	0.38%	0.47%	0.57%	0.66%	0.76%	0.85%	0.94%	1.04%	
37	0.10%	0.19%	0.29%	0.39%	0.48%	0.58%	0.68%	0.77%	0.87%	0.97%	1.06%	
38	0.10%	0.20%	0.30%	0.40%	0.50%	0.59%	0.69%	0.79%	0.89%	0.99%	1.09%	
39	0.10%	0.20%	0.30%	0.41%	0.51%	0.61%	0.71%	0.81%	0.91%	1.01%	1.12%	
40	0.10%	0.21%	0.31%	0.42%	0.52%	0.62%	0.73%	0.83%	0.93%	1.04%	1.14%	
41	0.11%	0.21%	0.32%	0.43%	0.53%	0.64%	0.74%	0.85%	0.96%	1.06%	1.17%	
42	0.11%	0.22%	0.33%	0.44%	0.54%	0.65%	0.76%	0.87%	0.98%	1.09%	1.20%	
43	0.11%	0.22%	0.33%	0.45%	0.56%	0.67%	0.78%	0.89%	1.00%	1.12%	1.23%	
44	0.11%	0.23%	0.34%	0.46%	0.57%	0.69%	0.80%	0.91%	1.03%	1.14%	1.26%	
45	0.12%	0.23%	0.35%	0.47%	0.59%	0.70%	0.82%	0.94%	1.05%	1.17%	1.29%	
46	0.12%	0.24%	0.36%	0.48%	0.60%	0.72%	0.84%	0.96%	1.08%	1.20%	1.32%	
47	0.12%	0.25%	0.37%	0.49%	0.61%	0.74%	0.86%	0.98%	1.11%	1.23%	1.35%	
48	0.13%	0.25%	0.38%	0.50%	0.63%	0.76%	0.88%	1.01%	1.13%	1.26%	1.39%	
49	0.13%	0.26%	0.39%	0.52%	0.65%	0.77%	0.90%	1.03%	1.16%	1.29%	1.42%	
50	0.13%	0.26%	0.40%	0.53%	0.66%	0.79%	0.93%	1.06%	1.19%	1.32%	1.46%	
51	0.14%	0.27%	0.41%	0.54%	0.68%	0.81%	0.95%	1.09%	1.22%	1.36%	1.49%	
52	0.14%	0.28%	0.42%	0.56%	0.70%	0.83%	0.97%	1.11%	1.25%	1.39%	1.53%	
53	0.14%	0.29%	0.43%	0.57%	0.71%	0.86%	1.00%	1.14%	1.28%	1.43%	1.57%	
54	0.15%	0.29%	0.44%	0.58%	0.73%	0.88%	1.02%	1.17%	1.32%	1.46%	1.61%	
55	0.15%	0.30%	0.45%	0.60%	0.75%	0.90%	1.05%	1.20%	1.35%	1.50%	1.65%	
56	0.15%	0.31%	0.46%	0.62%	0.77%	0.92%	1.08%	1.23%	1.39%	1.54%	1.69%	
57	0.16%	0.32%	0.47%	0.63%	0.79%	0.95%	1.11%	1.26%	1.42%	1.58%	1.74%	
58	0.16%	0.32%	0.49%	0.65%	0.81%	0.97%	1.14%	1.30%	1.46%	1.62%	1.78%	
59	0.17%	0.33%	0.50%	0.67%	0.83%	1.00%	1.17%	1.33%	1.50%	1.67%	1.83%	
60	0.17%	0.34%	0.51%	0.68%	0.86%	1.03%	1.20%	1.37%	1.54%	1.71%	1.88%	
61	0.18%	0.35%	0.53%	0.70%	0.88%	1.06%	1.23%	1.41%	1.58%	1.76%	1.93%	
62	0.18%	0.36%	0.54%	0.72%	0.90%	1.08%	1.27%	1.45%	1.63%	1.81%	1.99%	
63	0.19%	0.37%	0.56%	0.74%	0.93%	1.12%	1.30%	1.49%	1.67%	1.86%	2.05%	
64	0.19%	0.38%	0.57%	0.77%	0.96%	1.15%	1.34%	1.53%	1.72%	1.91%	2.11%	



Table A1 (Table 733 in consolidated factors spreadsheet): P2EEPA65 (continued) - NPA 66 to 67

Age (complete years, ignoring part years)	P2EEPA65												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	66											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	0.78%	0.84%	0.91%	0.97%	1.03%	1.10%	1.16%	1.22%	1.28%	1.35%	1.41%	1.47%	
21	0.80%	0.86%	0.93%	0.99%	1.06%	1.12%	1.19%	1.25%	1.32%	1.38%	1.44%	1.51%	
22	0.82%	0.88%	0.95%	1.02%	1.08%	1.15%	1.21%	1.28%	1.35%	1.41%	1.48%	1.54%	
23	0.84%	0.90%	0.97%	1.04%	1.11%	1.17%	1.24%	1.31%	1.38%	1.45%	1.51%	1.58%	
24	0.86%	0.92%	0.99%	1.06%	1.13%	1.20%	1.27%	1.34%	1.41%	1.48%	1.55%	1.62%	
25	0.88%	0.95%	1.02%	1.09%	1.16%	1.23%	1.30%	1.37%	1.44%	1.51%	1.59%	1.66%	
26	0.90%	0.97%	1.04%	1.11%	1.19%	1.26%	1.33%	1.40%	1.48%	1.55%	1.62%	1.70%	
27	0.92%	0.99%	1.07%	1.14%	1.21%	1.29%	1.36%	1.44%	1.51%	1.59%	1.66%	1.74%	
28	0.94%	1.02%	1.09%	1.17%	1.24%	1.32%	1.40%	1.47%	1.55%	1.62%	1.70%	1.78%	
29	0.96%	1.04%	1.12%	1.20%	1.27%	1.35%	1.43%	1.51%	1.58%	1.66%	1.74%	1.82%	
30	0.98%	1.06%	1.14%	1.22%	1.30%	1.38%	1.46%	1.54%	1.62%	1.70%	1.78%	1.86%	
31	1.01%	1.09%	1.17%	1.25%	1.33%	1.42%	1.50%	1.58%	1.66%	1.74%	1.82%	1.91%	
32	1.03%	1.12%	1.20%	1.28%	1.37%	1.45%	1.53%	1.62%	1.70%	1.78%	1.87%	1.95%	
33	1.06%	1.14%	1.23%	1.31%	1.40%	1.48%	1.57%	1.65%	1.74%	1.83%	1.91%	2.00%	
34	1.08%	1.17%	1.26%	1.34%	1.43%	1.52%	1.61%	1.69%	1.78%	1.87%	1.96%	2.04%	
35	1.11%	1.20%	1.29%	1.38%	1.47%	1.56%	1.64%	1.73%	1.82%	1.91%	2.00%	2.09%	
36	1.13%	1.23%	1.32%	1.41%	1.50%	1.59%	1.68%	1.78%	1.87%	1.96%	2.05%	2.14%	
37	1.16%	1.25%	1.35%	1.44%	1.54%	1.63%	1.72%	1.82%	1.91%	2.01%	2.10%	2.19%	
38	1.19%	1.28%	1.38%	1.48%	1.57%	1.67%	1.77%	1.86%	1.96%	2.05%	2.15%	2.25%	
39	1.22%	1.32%	1.41%	1.51%	1.61%	1.71%	1.81%	1.91%	2.01%	2.10%	2.20%	2.30%	
40	1.25%	1.35%	1.45%	1.55%	1.65%	1.75%	1.85%	1.95%	2.05%	2.15%	2.26%	2.36%	
41	1.28%	1.38%	1.48%	1.59%	1.69%	1.79%	1.90%	2.00%	2.10%	2.21%	2.31%	2.41%	
42	1.31%	1.41%	1.52%	1.62%	1.73%	1.84%	1.94%	2.05%	2.15%	2.26%	2.37%	2.47%	
43	1.34%	1.45%	1.56%	1.66%	1.77%	1.88%	1.99%	2.10%	2.21%	2.31%	2.42%	2.53%	
44	1.37%	1.48%	1.59%	1.71%	1.82%	1.93%	2.04%	2.15%	2.26%	2.37%	2.48%	2.59%	
45	1.41%	1.52%	1.63%	1.75%	1.86%	1.97%	2.09%	2.20%	2.32%	2.43%	2.54%	2.66%	
46	1.44%	1.56%	1.67%	1.79%	1.91%	2.02%	2.14%	2.26%	2.37%	2.49%	2.61%	2.72%	
47	1.48%	1.59%	1.71%	1.83%	1.95%	2.07%	2.19%	2.31%	2.43%	2.55%	2.67%	2.79%	
48	1.51%	1.63%	1.76%	1.88%	2.00%	2.12%	2.25%	2.37%	2.49%	2.61%	2.74%	2.86%	
49	1.55%	1.67%	1.80%	1.93%	2.05%	2.18%	2.30%	2.43%	2.55%	2.68%	2.80%	2.93%	
50	1.59%	1.72%	1.84%	1.97%	2.10%	2.23%	2.36%	2.49%	2.62%	2.74%	2.87%	3.00%	
51	1.63%	1.76%	1.89%	2.02%	2.15%	2.29%	2.42%	2.55%	2.68%	2.81%	2.94%	3.08%	
52	1.67%	1.80%	1.94%	2.07%	2.21%	2.34%	2.48%	2.61%	2.75%	2.88%	3.02%	3.15%	
53	1.71%	1.85%	1.99%	2.13%	2.26%	2.40%	2.54%	2.68%	2.82%	2.96%	3.10%	3.23%	
54	1.75%	1.90%	2.04%	2.18%	2.32%	2.46%	2.61%	2.75%	2.89%	3.03%	3.17%	3.32%	
55	1.80%	1.95%	2.09%	2.24%	2.38%	2.53%	2.67%	2.82%	2.97%	3.11%	3.26%	3.40%	
56	1.85%	2.00%	2.15%	2.30%	2.44%	2.59%	2.74%	2.89%	3.04%	3.19%	3.34%	3.49%	
57	1.90%	2.05%	2.20%	2.36%	2.51%	2.66%	2.82%	2.97%	3.12%	3.28%	3.43%	3.58%	
58	1.95%	2.10%	2.26%	2.42%	2.58%	2.73%	2.89%	3.05%	3.21%	3.36%	3.52%	3.68%	
59	2.00%	2.16%	2.32%	2.48%	2.65%	2.81%	2.97%	3.13%	3.29%	3.45%	3.62%	3.78%	
60	2.05%	2.22%	2.39%	2.55%	2.72%	2.88%	3.05%	3.22%	3.38%	3.55%	3.71%	3.88%	
61	2.11%	2.28%	2.45%	2.62%	2.79%	2.96%	3.13%	3.30%	3.48%	3.65%	3.82%	3.99%	
62	2.17%	2.35%	2.52%	2.70%	2.87%	3.05%	3.22%	3.40%	3.57%	3.75%	3.92%	4.10%	
63	2.23%	2.41%	2.59%	2.77%	2.95%	3.13%	3.31%	3.49%	3.67%	3.86%	4.04%	4.22%	
64	2.30%	2.48%	2.67%	2.85%	3.04%	3.22%	3.41%	3.60%	3.78%	3.97%	4.15%	4.34%	



Table A1 (Table 733 in consolidated factors spreadsheet): P2EEPA65 (continued) - NPA 67 to 68

Age (complete years, ignoring part years)	P2EEPA65												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	67											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	1.54%	1.60%	1.66%	1.72%	1.78%	1.84%	1.91%	1.97%	2.03%	2.09%	2.15%	2.21%	
21	1.57%	1.64%	1.70%	1.76%	1.83%	1.89%	1.95%	2.01%	2.08%	2.14%	2.20%	2.27%	
22	1.61%	1.68%	1.74%	1.80%	1.87%	1.93%	2.00%	2.06%	2.13%	2.19%	2.25%	2.32%	
23	1.65%	1.71%	1.78%	1.85%	1.91%	1.98%	2.04%	2.11%	2.18%	2.24%	2.31%	2.37%	
24	1.69%	1.75%	1.82%	1.89%	1.96%	2.02%	2.09%	2.16%	2.23%	2.29%	2.36%	2.43%	
25	1.73%	1.80%	1.87%	1.93%	2.00%	2.07%	2.14%	2.21%	2.28%	2.35%	2.42%	2.49%	
26	1.77%	1.84%	1.91%	1.98%	2.05%	2.12%	2.19%	2.26%	2.33%	2.40%	2.47%	2.54%	
27	1.81%	1.88%	1.95%	2.03%	2.10%	2.17%	2.24%	2.32%	2.39%	2.46%	2.53%	2.60%	
28	1.85%	1.93%	2.00%	2.07%	2.15%	2.22%	2.30%	2.37%	2.44%	2.52%	2.59%	2.67%	
29	1.90%	1.97%	2.05%	2.12%	2.20%	2.27%	2.35%	2.43%	2.50%	2.58%	2.65%	2.73%	
30	1.94%	2.02%	2.10%	2.17%	2.25%	2.33%	2.41%	2.48%	2.56%	2.64%	2.72%	2.79%	
31	1.99%	2.07%	2.15%	2.23%	2.30%	2.38%	2.46%	2.54%	2.62%	2.70%	2.78%	2.86%	
32	2.03%	2.12%	2.20%	2.28%	2.36%	2.44%	2.52%	2.60%	2.68%	2.77%	2.85%	2.93%	
33	2.08%	2.17%	2.25%	2.33%	2.42%	2.50%	2.58%	2.66%	2.75%	2.83%	2.91%	3.00%	
34	2.13%	2.22%	2.30%	2.39%	2.47%	2.56%	2.64%	2.73%	2.81%	2.90%	2.98%	3.07%	
35	2.18%	2.27%	2.36%	2.44%	2.53%	2.62%	2.71%	2.79%	2.88%	2.97%	3.05%	3.14%	
36	2.23%	2.32%	2.41%	2.50%	2.59%	2.68%	2.77%	2.86%	2.95%	3.04%	3.13%	3.22%	
37	2.29%	2.38%	2.47%	2.56%	2.65%	2.74%	2.84%	2.93%	3.02%	3.11%	3.20%	3.29%	
38	2.34%	2.44%	2.53%	2.62%	2.72%	2.81%	2.90%	3.00%	3.09%	3.18%	3.28%	3.37%	
39	2.40%	2.50%	2.59%	2.69%	2.78%	2.88%	2.97%	3.07%	3.17%	3.26%	3.36%	3.45%	
40	2.46%	2.56%	2.65%	2.75%	2.85%	2.95%	3.05%	3.14%	3.24%	3.34%	3.44%	3.54%	
41	2.52%	2.62%	2.72%	2.82%	2.92%	3.02%	3.12%	3.22%	3.32%	3.42%	3.52%	3.62%	
42	2.58%	2.68%	2.78%	2.89%	2.99%	3.09%	3.19%	3.30%	3.40%	3.50%	3.61%	3.71%	
43	2.64%	2.75%	2.85%	2.96%	3.06%	3.17%	3.27%	3.38%	3.48%	3.59%	3.69%	3.80%	
44	2.70%	2.81%	2.92%	3.03%	3.14%	3.24%	3.35%	3.46%	3.57%	3.68%	3.78%	3.89%	
45	2.77%	2.88%	2.99%	3.10%	3.21%	3.32%	3.43%	3.54%	3.65%	3.76%	3.88%	3.99%	
46	2.84%	2.95%	3.06%	3.18%	3.29%	3.40%	3.52%	3.63%	3.74%	3.86%	3.97%	4.08%	
47	2.91%	3.02%	3.14%	3.26%	3.37%	3.49%	3.60%	3.72%	3.84%	3.95%	4.07%	4.18%	
48	2.98%	3.10%	3.22%	3.34%	3.46%	3.57%	3.69%	3.81%	3.93%	4.05%	4.17%	4.29%	
49	3.05%	3.18%	3.30%	3.42%	3.54%	3.66%	3.78%	3.91%	4.03%	4.15%	4.27%	4.39%	
50	3.13%	3.25%	3.38%	3.50%	3.63%	3.75%	3.88%	4.00%	4.13%	4.25%	4.38%	4.50%	
51	3.21%	3.34%	3.46%	3.59%	3.72%	3.85%	3.98%	4.10%	4.23%	4.36%	4.49%	4.61%	
52	3.29%	3.42%	3.55%	3.68%	3.81%	3.94%	4.08%	4.21%	4.34%	4.47%	4.60%	4.73%	
53	3.37%	3.51%	3.64%	3.78%	3.91%	4.04%	4.18%	4.31%	4.45%	4.58%	4.72%	4.85%	
54	3.46%	3.60%	3.73%	3.87%	4.01%	4.15%	4.29%	4.42%	4.56%	4.70%	4.84%	4.97%	
55	3.55%	3.69%	3.83%	3.97%	4.11%	4.25%	4.40%	4.54%	4.68%	4.82%	4.96%	5.10%	
56	3.64%	3.78%	3.93%	4.07%	4.22%	4.36%	4.51%	4.65%	4.80%	4.94%	5.09%	5.23%	
57	3.74%	3.88%	4.03%	4.18%	4.33%	4.48%	4.63%	4.78%	4.93%	5.07%	5.22%	5.37%	
58	3.84%	3.99%	4.14%	4.29%	4.45%	4.60%	4.75%	4.90%	5.06%	5.21%	5.36%	5.51%	
59	3.94%	4.10%	4.25%	4.41%	4.57%	4.72%	4.88%	5.04%	5.19%	5.35%	5.51%	5.66%	
60	4.05%	4.21%	4.37%	4.53%	4.69%	4.85%	5.01%	5.17%	5.33%	5.50%	5.66%	5.82%	
61	4.16%	4.32%	4.49%	4.65%	4.82%	4.99%	5.15%	5.32%	5.48%	5.65%	5.81%	5.98%	
62	4.27%	4.44%	4.61%	4.78%	4.95%	5.12%	5.29%	5.46%	5.64%	5.81%	5.98%	6.15%	
63	4.40%	4.57%	4.75%	4.92%	5.10%	5.27%	5.45%	5.62%	5.80%	5.97%	6.15%	6.32%	
64	4.52%	4.70%	4.88%	5.06%	5.24%	5.42%	5.60%	5.78%	5.96%	6.14%	6.32%	6.50%	



Table A1 (Table 733 in consolidated factors spreadsheet): P2EEPA65 (continued) - NPA 68

Age (complete years, ignoring part years)	P2EEPA65	
	Normal Pension Age (in years and complete months, ignoring part months)	
	Years	68
	Months	0
20		2.27%
21		2.33%
22		2.38%
23		2.44%
24		2.50%
25		2.56%
26		2.62%
27		2.68%
28		2.74%
29		2.80%
30		2.87%
31		2.94%
32		3.01%
33		3.08%
34		3.15%
35		3.23%
36		3.31%
37		3.38%
38		3.47%
39		3.55%
40		3.63%
41		3.72%
42		3.81%
43		3.90%
44		4.00%
45		4.10%
46		4.20%
47		4.30%
48		4.41%
49		4.51%
50		4.63%
51		4.74%
52		4.86%
53		4.98%
54		5.11%
55		5.24%
56		5.38%
57		5.52%
58		5.67%
59		5.82%
60		5.98%
61		6.14%
62		6.32%
63		6.50%
64		6.68%



Table A2 (Table 734 in consolidated factors spreadsheet): P2EEPA60 – All NPAs

Age (complete years, ignoring part years)	P2EEPA60
20	4.23%
21	4.33%
22	4.43%
23	4.54%
24	4.64%
25	4.75%
26	4.87%
27	4.98%
28	5.10%
29	5.22%
30	5.35%
31	5.47%
32	5.60%
33	5.74%
34	5.88%
35	6.02%
36	6.16%
37	6.31%
38	6.46%
39	6.62%
40	6.78%
41	6.94%
42	7.11%
43	7.29%
44	7.47%
45	7.65%
46	7.84%
47	8.03%
48	8.23%
49	8.44%
50	8.65%
51	8.87%
52	9.10%
53	9.33%
54	9.57%
55	9.82%
56	10.08%
57	10.34%
58	10.62%
59	10.91%



Appendix B: Worked examples (EEPA)

Example B1

B.1 Consider a member with details as follows:

- Date of birth: 15/10/1960 (aged 58 years and 5 months on 01/04/2019);
- NPA: 66 years and 7 months.
- Pensionable earnings at 01/04/2019: £20,000 per annum (equivalent to £1,666.67 per month)

B.2 Should the member wish to purchase an EEPA option on 01/04/2019, the contribution rates to be used are those in respect of the member's age at that date in complete years (58 years).

EEPA 65 option

B.3 P2EEPA65 contribution rate for a 58 year old with NPA 66 years and 7 months is 3.05%.

B.4 The total additional contribution in respect of the EEPA of age 65 are determined as follows:

Total additional contribution in respect of the EEPA 65 option =

$$\mathbf{\pounds 1,666.67 \times 3.05\% = \pounds 50.83 \text{ per month}}$$

B.5 Assuming the employer proportion of the total additional contribution is 50%. The total is split into member and employer additional contributions as follows:

Additional member contribution in respect of the EEPA 65 option =

$$\mathbf{\pounds 50.83 \times 50\% = \pounds 25.42 \text{ per month}}$$

and:

Additional employer contribution in respect of the EEPA 65 option =

$$\mathbf{\pounds 50.83 \times 50\% = \pounds 25.42 \text{ per month}}$$

EEPA 60 option

B.6 If the member wishes to purchase an EEPA of 60 they alone make further contributions. P2EEPA60 contribution rate for a 58 year old is 10.62%.

Additional member contribution in respect of the EEPA 60 option =



$$\mathbf{\pounds 1,666.67 \times 10.62\% = \pounds 177.00 \text{ per month}}$$

The member pays this on top of the contribution in respect of the reduction of his pension age to 65 (as calculated in B.5).

Example B2

B.7 Should the member's pensionable earnings increase part way through the year the contribution rate should be applied to the increased pensionable earnings.

B.8 Consider that the same member's pensionable earnings increase to £22,000 per annum (£1,833.33 per month) on 01/07/2019.

B.9 For the first three months of the scheme year (01/04/2019 to 30/06/2019) additional monthly contributions are as set out in Example B1:

Additional member contribution in respect of the EEPA 65 option = £25.42 per month

Additional employer contribution in respect of the EEPA 65 option = £25.42 per month

Additional member contribution in respect of the EEPA 60 option = £177.00 per month

B.10 From 01/07/2019, monthly contributions reflect the revised pensionable earnings.

Total additional contribution in respect of the EEPA 65 option =

$$\mathbf{\pounds 1,833.33 \times 3.05\% = \pounds 55.92 \text{ per month}}$$

Additional member contribution in respect of the EEPA 65 option = £27.96 per month

Additional employer contribution in respect of the EEPA 65 option = £27.96 per month

Additional member contribution in respect of the EEPA 60 option

$$\mathbf{\pounds 1,833.33 \times 10.62\% = \pounds 194.70 \text{ per month}}$$

B.11 The applicable contribution rates should be re-assessed each 1st April.



Appendix C: Contribution rates for EPA options

Table C1: P2EPA1 (Table 730 in consolidated factors spreadsheet) - retire 1 year early from NPA

Age (complete years, ignoring part years)	P2EPA1												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	65											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
21	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
22	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
23	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
24	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
25	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
26	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
27	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
28	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%	0.9%	0.9%	0.9%
29	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
30	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
31	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
32	1.1%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
33	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
34	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
35	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
36	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
37	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
38	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
39	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
40	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.2%
41	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
42	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
43	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	1.3%	1.3%
44	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
45	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
46	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%
47	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
48	1.6%	1.6%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
49	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
50	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
51	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.6%	1.6%	1.6%	1.6%	1.6%
52	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
53	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
54	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
55	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
56	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
57	2.0%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
58	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
59	2.1%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
60	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
61	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
62	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
63	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%
64	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%



Table C1: P2EPA1 (Table 730 in consolidated factors spreadsheet) – retire 1 year early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA1												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	66											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
21	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
22	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
23	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%
24	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
25	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
26	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
27	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
28	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
29	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
30	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
31	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
32	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.1%	1.1%
33	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
34	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
35	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
36	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.2%	1.2%
37	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
38	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
39	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
40	1.2%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
41	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
42	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
43	1.3%	1.3%	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
44	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
45	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
46	1.4%	1.4%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
47	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
48	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
49	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
50	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
51	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%
52	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
53	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.8%
54	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
55	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
56	1.8%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
57	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
58	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
59	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%	1.9%
60	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
61	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
62	2.2%	2.2%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
63	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
64	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%
65	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%



Table C1: P2EPA1 (Table 730 in consolidated factors spreadsheet) – retire 1 year early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA1												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	67											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
21	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
22	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
23	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
24	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%
25	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
26	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
27	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
28	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
29	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%	1.0%
30	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
31	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
32	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
33	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
34	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
35	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
36	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
37	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%
38	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
39	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
40	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
41	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
42	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
43	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
44	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%
45	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
46	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
47	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
48	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
49	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
50	1.5%	1.5%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
51	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
52	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.7%	1.7%	1.7%
53	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
54	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
55	1.7%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
56	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
57	1.8%	1.8%	1.8%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
58	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
59	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
60	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
61	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
62	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.0%
63	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
64	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
65	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%
66	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%



Table C1: P2EPA1 (Table 730 in consolidated factors spreadsheet) – retire 1 year early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA1	
	Normal Pension Age (in years and complete months, ignoring part months)	
	Years	68
	Months	0
16		0.7%
17		0.7%
18		0.7%
19		0.7%
20		0.7%
21		0.8%
22		0.8%
23		0.8%
24		0.8%
25		0.8%
26		0.8%
27		0.9%
28		0.9%
29		0.9%
30		0.9%
31		1.0%
32		1.0%
33		1.0%
34		1.0%
35		1.0%
36		1.1%
37		1.1%
38		1.1%
39		1.1%
40		1.2%
41		1.2%
42		1.2%
43		1.3%
44		1.3%
45		1.3%
46		1.4%
47		1.4%
48		1.4%
49		1.5%
50		1.5%
51		1.5%
52		1.6%
53		1.6%
54		1.7%
55		1.7%
56		1.7%
57		1.8%
58		1.8%
59		1.9%
60		1.9%
61		2.0%
62		2.0%
63		2.1%
64		2.2%
65		2.2%
66		2.3%



Table C2: P2EPA2 (Table 731 in consolidated factors spreadsheet) – retire 2 years early from NPA

Age (complete years, ignoring part years)	P2EPA2												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	66											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.5%	1.5%	1.5%
21	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
22	1.7%	1.7%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
23	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
24	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
25	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%
26	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
27	1.9%	1.9%	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
28	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
29	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
30	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%
31	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
32	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.0%	2.0%	2.0%
33	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
34	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%
35	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
36	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%
37	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
38	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.3%
39	2.5%	2.5%	2.5%	2.5%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
40	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
41	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%
42	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
43	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.6%
44	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
45	2.9%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
46	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.8%
47	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%
48	3.1%	3.1%	3.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
49	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
50	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.1%	3.1%
51	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.2%	3.2%	3.2%	3.2%	3.2%
52	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%
53	3.5%	3.5%	3.5%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
54	3.6%	3.6%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
55	3.7%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
56	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.6%
57	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.7%
58	4.0%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.8%
59	4.1%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.9%
60	4.2%	4.2%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%
61	4.3%	4.3%	4.3%	4.3%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
62	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
63	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.4%	4.4%	4.4%	4.4%
64	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.5%	4.5%	4.5%	4.5%



Table C2: P2EPA2 (Table 731 in consolidated factors spreadsheet) – retire 2 years early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA2												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	67											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
21	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.5%	1.5%	1.5%	1.5%	1.5%
22	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
23	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
24	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.6%	1.6%
25	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
26	1.8%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
27	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
28	1.9%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
29	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.8%
30	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
31	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%	1.9%	1.9%
32	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
33	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%
34	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
35	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%
36	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
37	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.2%	2.2%	2.2%	2.2%
38	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
39	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.3%	2.3%	2.3%
40	2.5%	2.5%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
41	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
42	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
43	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
44	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.6%	2.6%	2.6%
45	2.8%	2.8%	2.8%	2.8%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
46	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
47	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.8%	2.8%	2.8%
48	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
49	3.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
50	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.0%
51	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.1%	3.1%	3.1%	3.1%
52	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
53	3.4%	3.4%	3.4%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%
54	3.5%	3.5%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
55	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
56	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.5%
57	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.6%	3.6%
58	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.7%	3.7%	3.7%
59	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.8%	3.8%
60	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.9%	3.9%
61	4.2%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.0%
62	4.3%	4.3%	4.3%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
63	4.4%	4.4%	4.4%	4.4%	4.4%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
64	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.4%	4.4%	4.4%	4.4%	4.4%
65	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.5%	4.5%	4.5%	4.5%	4.5%



Table C2: P2EPA2 (Table 731 in consolidated factors spreadsheet) – retire 2 years early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA2	
	Normal Pension Age (in years and complete months, ignoring part months)	
	Years	68
	Months	0
16		1.4%
17		1.4%
18		1.4%
19		1.4%
20		1.5%
21		1.5%
22		1.6%
23		1.6%
24		1.6%
25		1.7%
26		1.7%
27		1.8%
28		1.8%
29		1.8%
30		1.9%
31		1.9%
32		2.0%
33		2.0%
34		2.1%
35		2.1%
36		2.2%
37		2.2%
38		2.3%
39		2.3%
40		2.4%
41		2.4%
42		2.5%
43		2.6%
44		2.6%
45		2.7%
46		2.8%
47		2.8%
48		2.9%
49		3.0%
50		3.0%
51		3.1%
52		3.2%
53		3.3%
54		3.4%
55		3.4%
56		3.5%
57		3.6%
58		3.7%
59		3.8%
60		3.9%
61		4.0%
62		4.1%
63		4.3%
64		4.4%
65		4.5%



Table C3: P2EPA3 (Table 732 in consolidated factors spreadsheet) – retire 3 years early from NPA

Age (complete years, ignoring part years)	P2EPA3												
	Normal Pension Age (in years and complete months, ignoring part months)												
	Years	67											
Months	0	1	2	3	4	5	6	7	8	9	10	11	
20	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
21	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.3%	2.3%	2.3%
22	2.5%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
23	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.4%
24	2.6%	2.6%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
25	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
26	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%
27	2.8%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
28	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.7%
29	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
30	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
31	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	2.9%
32	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.0%	3.0%	3.0%	3.0%	3.0%
33	3.2%	3.2%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
34	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
35	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.2%	3.2%
36	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.3%	3.3%	3.3%	3.3%	3.3%
37	3.5%	3.5%	3.5%	3.5%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
38	3.6%	3.6%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
39	3.7%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
40	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.6%
41	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.7%	3.7%	3.7%
42	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.8%	3.8%	3.8%	3.8%
43	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.9%	3.9%	3.9%	3.9%
44	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.0%	4.0%	4.0%	4.0%	4.0%
45	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.1%	4.1%	4.1%	4.1%	4.1%
46	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.2%	4.2%	4.2%	4.2%	4.2%
47	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.3%	4.3%	4.3%	4.3%
48	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.4%	4.4%	4.4%	4.4%
49	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.5%	4.5%	4.5%
50	4.8%	4.8%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.6%	4.6%
51	4.9%	4.9%	4.9%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%	4.8%
52	5.0%	5.0%	5.0%	5.0%	5.0%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
53	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.0%	5.0%	5.0%	5.0%	5.0%
54	5.3%	5.3%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.1%	5.1%
55	5.4%	5.4%	5.4%	5.4%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%
56	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.4%	5.4%	5.4%	5.4%	5.4%
57	5.7%	5.7%	5.7%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%	5.5%	5.5%
58	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	5.7%	5.7%	5.7%	5.7%	5.7%
59	6.0%	6.0%	6.0%	6.0%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.8%	5.8%
60	6.2%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.0%	6.0%	6.0%	6.0%
61	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%
62	6.5%	6.5%	6.5%	6.5%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.3%	6.3%
63	6.7%	6.7%	6.7%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.5%	6.5%	6.5%
64	6.8%	6.8%	6.8%	6.8%	6.8%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%



Table C3: P2EPA3 (Table 732 in consolidated factors spreadsheet) – retire 3 years early from NPA (continued)

Age (complete years, ignoring part years)	P2EPA3	
	Normal Pension Age (in years and complete months, ignoring part months)	
	Years	68
	Months	0
16		2.1%
17		2.1%
18		2.2%
19		2.2%
20		2.3%
21		2.3%
22		2.4%
23		2.4%
24		2.5%
25		2.6%
26		2.6%
27		2.7%
28		2.7%
29		2.8%
30		2.9%
31		2.9%
32		3.0%
33		3.1%
34		3.2%
35		3.2%
36		3.3%
37		3.4%
38		3.5%
39		3.5%
40		3.6%
41		3.7%
42		3.8%
43		3.9%
44		4.0%
45		4.1%
46		4.2%
47		4.3%
48		4.4%
49		4.5%
50		4.6%
51		4.7%
52		4.9%
53		5.0%
54		5.1%
55		5.2%
56		5.4%
57		5.5%
58		5.7%
59		5.8%
60		6.0%
61		6.1%
62		6.3%
63		6.5%
64		6.7%



Appendix D: Worked examples (EPA)

Example D1

D.1 Consider a member with details as follows:

- Date of birth: 15/10/1960 (aged 58 years and 5 months on 01/04/2019);
- NPA1: 66 years and 7 months.
- Pensionable earnings at 01/04/2019: £20,000 per annum (equivalent to £1,666.67 per month)

D.2 Should the member wish to purchase an EPA option to retire 1 year early relating to alpha pension accrued over the scheme year from 01/04/2019, the contribution rates to be used are those in respect of the member's age at that date in complete years (58 years).

EPA option

D.3 P2EPA1 contribution rate for a 58 year old with NPA 66 years and 7 months is 2.00%.

D.4 The additional member contribution in respect of the EPA option are determined as follows:

Additional member contribution in respect of the EPA option =

$$\mathbf{\pounds 1,666.67 \times 2\% = \pounds 33.33 \text{ per month}}$$

Example D2

D.5 The member is unable to purchase an EPA option to retire 2 years early because they are limited by a requirement that the reduced effective pension age is at least 65 years. This member is able to buy a reduction of 1 year (as above) or 1 year and 7 months.

D.6 Should the member wish to purchase an EPA option to retire 1 year and 7 months early relating to the alpha pension accrued over the scheme year from 01/04/2019, the appropriate EPA contribution rate is derived by interpolating between the EPA retiring 1 year early contribution rate (P2EPA1) and the EPA retiring 2 years early contribution rate (P2EPA2). These contribution rates are appropriate to the member's age (58 years) and NPA (66 years and 7 months).

D.7 P2EPA1 contribution rate for a 58 year old with NPA 66 years and 7 months is 2.0%. The P2EPA2 contribution rate for a 58 year old with NPA 66 years and 7 months is 3.9%.

D.8 The EPA contribution rate is derived as:



Non-integer reduction EPA (P2EPAd) contribution rate =

$$\left[2 - 1\frac{7}{12}\right] \times 2\% + \left[1\frac{7}{12} - 1\right] \times 3.9\% = 3.11\%$$

- D.9 The additional member contribution in respect of the EPA option are determined as follows:

Additional member contribution in respect of the EPA option =

$$\pounds 1,666.67 \times 3.11\% = \pounds 51.83 \text{ per month}$$

- D.10 The applicable contribution rates should be re-assessed each 1st April.



Appendix E: 'Headroom' factors

Table E1: P2HR1 (Table 735 in consolidated factors spreadsheet) - Prospective accrual accumulation factor

Period between option commencement date an EPA (in years and months, ignoring part months)												
Years	Months											
	0	1	2	3	4	5	6	7	8	9	10	11
0	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
1	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05
2	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07
3	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10
4	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13
5	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.16
6	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20
7	0.20	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23
8	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.27	0.27
9	0.27	0.28	0.28	0.28	0.29	0.29	0.29	0.30	0.30	0.30	0.31	0.31
10	0.31	0.32	0.32	0.32	0.33	0.33	0.33	0.34	0.34	0.34	0.35	0.35
11	0.35	0.36	0.36	0.37	0.37	0.37	0.38	0.38	0.38	0.39	0.39	0.39
12	0.40	0.40	0.41	0.41	0.41	0.42	0.42	0.43	0.43	0.43	0.44	0.44
13	0.45	0.45	0.45	0.46	0.46	0.47	0.47	0.47	0.48	0.48	0.49	0.49
14	0.49	0.50	0.50	0.51	0.51	0.52	0.52	0.52	0.53	0.53	0.54	0.54
15	0.55	0.55	0.56	0.56	0.56	0.57	0.57	0.58	0.58	0.59	0.59	0.60
16	0.60	0.61	0.61	0.62	0.62	0.63	0.63	0.64	0.64	0.64	0.65	0.65
17	0.66	0.66	0.67	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.71	0.71
18	0.72	0.73	0.73	0.74	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.78
19	0.78	0.79	0.80	0.80	0.81	0.81	0.82	0.82	0.83	0.83	0.84	0.85
20	0.85	0.86	0.86	0.87	0.88	0.88	0.89	0.89	0.90	0.90	0.91	0.92
21	0.92	0.93	0.93	0.94	0.95	0.95	0.96	0.97	0.97	0.98	0.98	0.99
22	1.00	1.00	1.01	1.02	1.02	1.03	1.04	1.04	1.05	1.06	1.06	1.07
23	1.08	1.08	1.09	1.10	1.10	1.11	1.12	1.12	1.13	1.14	1.14	1.15
24	1.16	1.17	1.17	1.18	1.19	1.19	1.20	1.21	1.22	1.22	1.23	1.24
25	1.24	1.25	1.26	1.27	1.28	1.28	1.29	1.30	1.31	1.31	1.32	1.33
26	1.34	1.34	1.35	1.36	1.37	1.38	1.38	1.39	1.40	1.41	1.42	1.42
27	1.43	1.44	1.45	1.46	1.47	1.47	1.48	1.49	1.50	1.51	1.52	1.52
28	1.53	1.54	1.55	1.56	1.57	1.58	1.59	1.59	1.60	1.61	1.62	1.63
29	1.64	1.65	1.66	1.67	1.67	1.68	1.69	1.70	1.71	1.72	1.73	1.74
30	1.75	1.76	1.77	1.78	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86
31	1.87	1.88	1.89	1.90	1.91	1.92	1.93	1.94	1.95	1.96	1.97	1.98
32	1.99	2.00	2.01	2.02	2.03	2.04	2.05	2.06	2.07	2.08	2.09	2.10
33	2.12	2.13	2.14	2.15	2.16	2.17	2.18	2.19	2.20	2.22	2.23	2.24
34	2.25	2.26	2.27	2.28	2.30	2.31	2.32	2.33	2.34	2.36	2.37	2.38
35	2.39	2.40	2.42	2.43	2.44	2.45	2.46	2.48	2.49	2.50	2.51	2.53
36	2.54	2.55	2.56	2.58	2.59	2.60	2.62	2.63	2.64	2.65	2.67	2.68
37	2.69	2.71	2.72	2.73	2.75	2.76	2.77	2.79	2.80	2.81	2.83	2.84
38	2.86	2.87	2.88	2.90	2.91	2.93	2.94	2.95	2.97	2.98	3.00	3.01
39	3.03	3.04	3.06	3.07	3.09	3.10	3.11	3.13	3.14	3.16	3.17	3.19
40	3.20	3.22	3.24	3.25	3.27	3.28	3.30	3.31	3.33	3.34	3.36	3.38
41	3.39	3.41	3.42	3.44	3.46	3.47	3.49	3.51	3.52	3.54	3.55	3.57
42	3.59	3.60	3.62	3.64	3.66	3.67	3.69	3.71	3.72	3.74	3.76	3.77
43	3.79	3.81	3.83	3.85	3.86	3.88	3.90	3.92	3.93	3.95	3.97	3.99
44	4.01	4.03	4.04	4.06	4.08	4.10	4.12	4.14	4.16	4.18	4.19	4.21
45	4.23	4.25	4.27	4.29	4.31	4.33	4.35	4.37	4.39	4.41	4.43	4.45
46	4.47	4.49	4.51	4.53	4.55	4.57	4.59	4.61	4.63	4.65	4.67	4.69
47	4.71	4.73	4.76	4.78	4.80	4.82	4.84	4.86	4.89	4.91	4.93	4.95
48	4.97	4.99	5.02	5.04	5.06	5.08	5.11	5.13	5.15	5.17	5.20	5.22
49	5.24	5.26	5.29	5.31	5.34	5.36	5.38	5.41	5.43	5.45	5.48	5.50
50	5.52	5.55	5.57	5.60	5.62	5.65	5.67	5.70	5.72	5.75	5.77	5.80



Table E2: P2HRRev1 (Table 736 in consolidated factors spreadsheet) – Revaluation factor

Number of years between option commencement date and EPA (ignoring part years)	Factor	Number of years between option commencement date and EPA (ignoring part years)	Factor
0	1.00	25	1.64
1	1.02	26	1.67
2	1.04	27	1.71
3	1.06	28	1.74
4	1.08	29	1.78
5	1.10	30	1.81
6	1.13	31	1.85
7	1.15	32	1.88
8	1.17	33	1.92
9	1.20	34	1.96
10	1.22	35	2.00
11	1.24	36	2.04
12	1.27	37	2.08
13	1.29	38	2.12
14	1.32	39	2.16
15	1.35	40	2.21
16	1.37	41	2.25
17	1.40	42	2.30
18	1.43	43	2.34
19	1.46	44	2.39
20	1.49	45	2.44
21	1.52	46	2.49
22	1.55	47	2.54
23	1.58	48	2.59
24	1.61	49	2.64
		50	2.69



Appendix F: Worked examples ('Headroom' Calculations)

The examples are illustrative only.

Example F1 – headroom limit used for EEPA option

F.1 Consider a member with details as follows (i.e. Example B1):

- EEPA commencement date: 01/04/2019
- EEPA: 60 years
- Date of birth: 15/10/1960
- Monthly EEPA payments between EEPA commencement date and EEPA: 19
- NPA¹: 66 years and 7 months
- Period between EEPA commencement date and EEPA: 1 year and 6 months
- Pensionable earnings at 01/04/2019: £20,000 per annum (equivalent to £1,666.67 per month)
- Headroom limit in 2019/20 is £7,000 a year

Stage 1: estimate the prospective pension arising from future accrual at EPA (or at EEPA)

F.2 Prospective pension = Pensionable Earnings × P2HR1 factor

$$= £20,000.00 \times 0.04 = £800.00 \text{ a year}$$

P2HR1 factor based on period between EEPA option commencement date and EEPA – i.e. 1 years and 6 months (ignoring part months).

Stage 2: Converting the prospective pension into equivalent added pension at EPA (or at EEPA)

F.3 Equivalent added pension at EPA (or at EEPA) =

$$\text{Prospective pension} \times [(1 / P2ER \text{ factor}_{NPA}) - 1]$$

$$= £800.00 \times [(1 / 0.7049) - 1] = £334.91 \text{ a year}^4$$

P2ER factor_{NPA} is 0.7049 based on early retirement age of EEPA 60 years and NPA of 66 years 7 months (i.e. interpolated⁴ for NPA 66 and NPA67). The worked example in Appendix B of latest version of our note 'Early Payment Reduction (normal health) and Age Addition Factors' gives further guidance on interpolating between early retirement factor tables when a member has a non-integer NPA.

⁴ The member is retiring 6 years and 7 months early. The factor is derived by interpolating between the factor for age 59 years 5 months from table P2ER66 (i.e. 0.709 for NPA 66) and the factor for age 60 years and 5 months from table P2ER67 (i.e. 0.702 for NPA 67) (see early payment reduction and age addition factors and guidance for the alpha section). The NPA is 66 years 7 months so using the weights 5/12 and 7/12 respectively, the factor is $[(5/12) \times 0.709] + [(7/12) \times 0.702] = 0.7049$.



Stage 3: Expressing the equivalent added pension at EPA (or at EEPA) as an equivalent added pension as at commencement date - i.e. the value of EPA (or EEPA) option at outset

F.4 Value of EPA (or EEPA) option at outset =

Equivalent added pension at EPA (or at EEPA) / *P2HRRev1* factor

= £334.91 / 1.02 = £328.34 = 328.00 (rounded to nearest £)

P2HRRev1 factor based on period between EEPA Option commencement date and EEPA – i.e. 1 year (ignoring part years).

Express value of EPA (or EEPA) option at outset as % of headroom limit at outset

= Value of EPA (or EEPA) option at outset / headroom limit at outset

= £328.00 / £7,000 = 0.0469 = 5% (nearest %)

Example F2 – lapsed EEPA option

F.5 Consider a member as in Example F1 who lapsed their EEPA contract after making 10 monthly EEPA payments. Current headroom limit (in 2019/20) is £7,000 a year.

F.6 At outset the value of the EEPA option was 5% of the headroom limit (from Example F1 before). Once the EEPA contract has lapsed, then the value of EEPA option is reassessed as: $5\% \times 10 / 19 = 0.0263 = 3\%$ (nearest %). That is, the EEPA option has used up 3% of the headroom limit.



Appendix G: Assumptions underlying factors

Financial assumptions

Nominal discount rate	4.448% pa
CPI	2.00% pa
Real discount rate (in excess of CPI)	2.40% pa

Mortality assumptions

Base mortality tables	S2NMA and S2NFA
Base table adjustment	Member: 104% of S2NMA for males and 104% of S2NFA for females (as per 2016 valuation)
Future mortality improvement	Based on ONS principal UK population projections 2016
Year of Use	2020

Other assumptions

Proportion of male members for the purpose of unisexing factors	50%
Allowance for commutation	Nil



Appendix H: Limitations of this guidance

- H.1 This guidance should not be used for any purpose other than those set out in this guidance.
- H.2 The factors contained in this guidance are subject to regular review. Scheme managers and administrators need to ensure that they are using the latest factors, as relevant, when processing cases.
- H.3 Advice provided by GAD must be taken in context and is intended to be considered in its entirety. Individual sections, if considered in isolation, may be misleading, and conclusions reached by a review of some sections on their own may be incorrect. GAD does not accept responsibility for advice that is altered or used selectively. Clarification should be sought if there is any doubt about the intention or scope of advice provided by GAD.
- H.4 This guidance only covers the actuarial principles around the calculation and application of EEPA and EPA factors. Any legal advice in this area should be sought from an appropriately qualified person or source.
- H.5 Scheme managers and administrators should satisfy themselves that EEPA and EPA calculations and benefit awards comply with all legislative requirements including, but not limited to, tax and contracting-out requirements.
- H.6 This guidance is based on the Regulations in force at the time of writing. It is possible that future changes to the Regulations might create inconsistencies between this guidance and the Regulations. If users of this guidance believe there to be any such inconsistencies, they should bring this to the attention of Cabinet Office and GAD. Under no circumstances should this guidance take precedence over the Regulations. Administrators should ensure that they comply with all relevant Regulations.