Government Actuary's Department

ONS Wealth and assets survey

Pension wealth annuity factors – Round 8 guidance note

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Chris Morley, FIA

Navigating risk | Cutting through complexity

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1. Introduction

Background

1.1 The Office for National Statistics ('ONS') produce and publish a biennial survey of the wealth and assets of households in Great Britain (the 'WAS'). We understand the WAS is used widely across government to inform policy making.

1.2 Pension wealth is captured alongside property, physical assets and net financial wealth (e.g. savings). Pension wealth is split across two categories: pensions that are defined contribution ('DC') in nature, and pensions that are defined benefit ('DB') in nature.

1.3 The ONS use a model (as set out in Appendix B) to estimate pension wealth based on answers to household survey questions. This model is subject to public scrutiny.

1.4 The ONS commissioned the Government Actuary's Department ('GAD') to provide annuity factors for use in the ONS's pension wealth model for Round 8 of the wealth and assets survey (i.e. interviews conducted between April 2020 and March 2022).

1.5 The annuity factors GAD have calculated for Round 8 are published in the spreadsheet titled '*ONS-WAS Round 8 Annuities.ods'* on the 25 June 2025, which represent the $a_{R_i}(t)$ variable in the ONS model (see Appendix B).

1.6 The assumptions used to calculate these annuities are set out in Appendix A. Please refer to GAD's report on the discount rate methodology titled '*valuing defined benefit pension wealth'* dated 5 December 2024, which includes further detail on the financial assumptions.

Purpose and third-party reliance

1.7 This guidance note is addressed to the Wealth and Pensions Analysis team within the ONS. This note shows how the annuity factors GAD have calculated should be used in the ONS wealth model to place an approximate value on the wealth of pension benefits.

1.8 This guidance note has been prepared for the use of the ONS for the purposes of demonstrating the application of the annuity factors in Round 8 only. It includes examples of how these annuity factors should be applied in practice for different situations and types of member.

1.9 Other than the ONS, 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.

Limitations

1.10 This guidance should not be used for any purpose other than those set out in this guidance.

1.11 ONS should ensure they are content that the assumptions used to calculate the annuity factors are reasonable for their purposes. The ONS need to ensure that they are using the appropriate factors when performing calculations, and applying the factors as intended.

1.12 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.

Compliance

1.13 Other aspects of ONS's model review, including a review of the questionnaire used to collect data for the model, are outside the scope of this guidance note.

1.14 This guidance note and annuity factors, and the work undertaken to produce it, has been carried out in accordance with the applicable Technical Actuarial Standards: TAS 100 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.

2. Pension wealth conversion annuity factors

2.1 The annuity factors set out in the spreadsheet titled '*ONS-WAS Round 8 Annuities.ods*' have been calculated using the assumptions as set out in Appendix A.

2.2 These annuity factors are intended to be used in the ONS's current wealth model as set out in Appendix B to approximate the overall wealth of DB pensions (and DC pensions in payment)[1] for Round 8 of the ONS's Wealth and Assets Survey.

2.3 The user will need to select the relevant factor for each individual pension from the relevant table (1-4), using the following identifiers (as established in the ONS Round 8 survey responses):

Age (last birthday)
Sex (male/female)
Pensioner status (current pensioner, active or deferred member)
Term to assumed retirement age (complete years for active or deferred members from their last birthday)
Member pension or survivor's pension (only for pensions already in payment)

2.4 The relevant factor table (1-4) to refer to in the spreadsheet are:

Category	Males	Females
Current pensioner	Table 1, column B. *"Male pensioner"*	Table 2, column B. "*Female pensioner*"
Survivor pensioner (receiving a dependant pension)	Table 1, column C. "*Male survivor"*	Table 2, column C. *"Female survivor"*
Active or deferred/retained (i.e. pension not in payment yet)	Table 3 (column depends on term to retirement age)	Table 4 (column depends on term to retirement age)

2.5 For any non-pensioners who are over their retirement age, the user should refer to tables 3 or 4 (depending on male or female) and look up the relevant annuity factors assuming zero term to retirement at the member's age at the interview date. See example 5 in section 3 below.

[1] As per GAD recommendation 7 in Discount Rate methodology report

3. Example calculations

This section provides examples of the calculations to estimate the pension wealth for individuals, by applying the relevant annuity factor, $a_{R_i}(t)$, to the annual pension using the ONS's model (as set out in appendix B).

For the non-pensioner examples, the calculations assume $d = 2.40\%$, in line with the recommendation in GAD's advice '*valuing defined benefit pension wealth'* paper dated 5 December 2024.

Example 1: Current pensioner

Male age 70 years and 2 months at interview date

Annual pension in payment of £25,000 pa at interview date (Y_i *in ONS model*)

Table 1: Male pensioner annuity factor for a 70 year old: 14.84 ($a_{R_i}(t)$ *in ONS model*)

Current pensioner, so no discounting factor required or lump sum payment.

Estimated pension wealth at interview date: £25,000 x 14.84 = £371,000

Example 2: Partner/survivor

Female, age 85 years and 9 months at interview date

Partner's annual pension in payment of £2,500 pa at interview date (Y_i *in ONS model*)

Table 2: Female survivor annuity factor for an 85 year old: 6.27 ($a_{R_i}(t)$ *in ONS model*)

Current pensioner, so no discounting factor required or lump sum payment.

Estimated pension wealth at interview date: £2,500 x 6.27 = £15,675

Example 3: Active member (DB pension)

Male, age 40 years and 7 months at interview date

Estimated accrued DB pension of £15,000 pa at interview date (Y_i *in ONS model*)

Assumed retirement age in ONS model: 62

Years to assumed retirement age: 62 – 40.58 = 21.42 years

For term to retirement in the factor table, use rounded age at last birthday: 62 – 40 = 22

Table 3: Male annuity factor for a 40 year old with 22 years to retirement: 20.46 ($a_{R_i}(t)$ *in ONS model*)

Estimated DB pension wealth at interview date: $\frac{£15{,}000 \text{ x } 20.46}{(1+2.40\%)^{22}}$ = £182,137

Example 4: Deferred/retained member (DB pension)

Female, age 55 years and 6 months at interview date

Estimated accrued DB pension of £30,000 pa at interview date $(Y_i \; in \; ONS \; model)$

Assumed retirement age in ONS model: 65

Years to assumed retirement age: 65 – 55.5 = 9.5 years

For term to retirement in the factor table, use rounded age at last birthday: 65 – 55 = 10

Table 4: Female annuity factor for a 55 year old with 10 years to retirement: 18.56
$(a_{R_i}(t) \; in \; ONS \; model)$

Estimated DB pension wealth at interview date: $\frac{£30{,}000 \text{ x } 18.56}{(1+2.40\%)^{10}}$ = £439,238

Example 5: Deferred member over normal retirement age (DB pension)

Male, age 72 years and 6 months at interview date

Estimated accrued DB pension of £35,000 pa at interview date $(Y_i \; in \; ONS \; model)$

Assumed retirement age in ONS model: 72.5

Years to assumed retirement age: 0 years (assume retires immediately)

Table 3: Male annuity factor for a 72 year old with 0 years to retirement: 13.91
$(a_{R_i}(t) \; in \; ONS \; model)$

Estimated DB pension wealth at interview date: $\frac{£35{,}000 \text{ x } 13.91}{(1+2.40\%)^{0}}$ = £486,850

Appendix A: assumptions underlying the Round 8 annuity factors

A summary of the assumptions used to calculate the annuity factors is shown below:

Assumptions	Round 8
Net discount rate	2.40%
Post-retirement mortality base tables[1]:	
Male pensioner	101% of S3PMA
Female pensioner	104% of S3PFA
Male partner	102% of S3DMA
Female partner	101% of S3DFA
Future mortality improvements	ONS 2020 population projections
Commutation of pension at retirement	Nil
Marital assumptions:	
Proportion married	ONS 2022 population estimates by marital status and living arrangements
Age difference	Males 2 years older than eligible partner (and vice versa)
Assumed partner pension proportion	50% of original member's pension
Gender of partner	Partners are assumed to be the opposite gender to the member
Guarantee period for lump payment on death of member	Current pensioners: 0 years Non-pensioners: 5 years

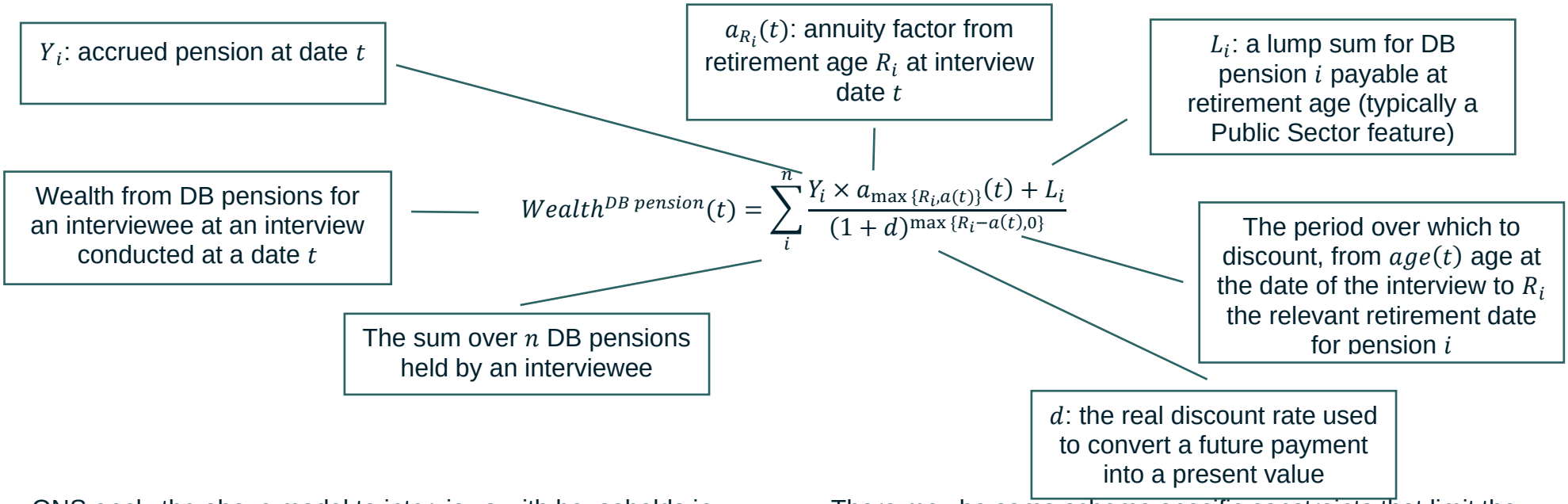
The annuity factors assume no mortality before retirement age.

The factors do not include revaluation rates or assumed salary increases before retirement, as this is allowed for separately in the ONS's model shown in Appendix B.

[1] CMI note with recommended adjustments to S3 base tables

Appendix B: ONS model breakdown

The ONS have outlined the structure of their intended approach to modelling DB pension wealth in Round 8 in line with GAD's advice '*valuing defined benefit pension wealth'* paper dated 5 December 2024, summarised below:



ONS apply the above model to interviews with households in their sample in each wave/round.

The above formulation of the model covers the approach taken for deferred DB pension entitlements, where the Y_i pension payable may be known. Where interviewees remain active participants in their DB pension scheme, we understand this accrued value is calculated as:

$$accrual\ rate \times service \times pensionable\ salary;$$

There may be some scheme specific constraints that limit the pensionable salary definition or the maximum eligible service that are ignored.

For interviewees currently in receipt of their pension, the period of discounting applied on the bottom of the equation is nil. Therefore, the wealth is derived solely from the in-payment pension Y_i and the relevant annuity factor.