

As part of our defined benefit funding consultation, we commissioned the Government Actuary's Department (GAD) to do some modelling to assess the implications of setting the long-term objective (LTO) at various levels.

Details of the modelling approach were included in GAD's report: 'Modelling the Long-Term Objective', dated 14 February 2020 (<https://www.thepensionsregulator.gov.uk/-/media/thepensionsregulator/files/import/pdf/modelling-long-term-funding-objective.ashx>). During the consultation period, we have been approached for further details of GAD's model.

The attached document contains further details of GAD's modelling of a scheme once it has reached its LTO. It contains all the additional information we intend to publish on the post-LTO modelling.

We have commissioned further modelling work to cover the period prior to reaching the LTO. This further modelling and an impact assessment will be published with our second consultation.



Government
Actuary's
Department

Modelling the Long-Term Funding Objective: Likely outcomes of different approaches ('LTO report')

Additional information

We have been informed that The Pensions Regulator (TPR), have received requests for some additional information in relation to the GAD LTO report dated 14 February 2020. The following sections provide additional information in the areas that we understand have been raised with TPR.

The information on the following pages should be read alongside the LTO report and the TPR Defined benefit funding code of practice consultation document dated March 2020. This additional information is not intended to provide comprehensive details of the methods and assumptions adopted for the analysis within the LTO report, but is expected to provide further clarity in particular around the low-dependency funding basis analysis.

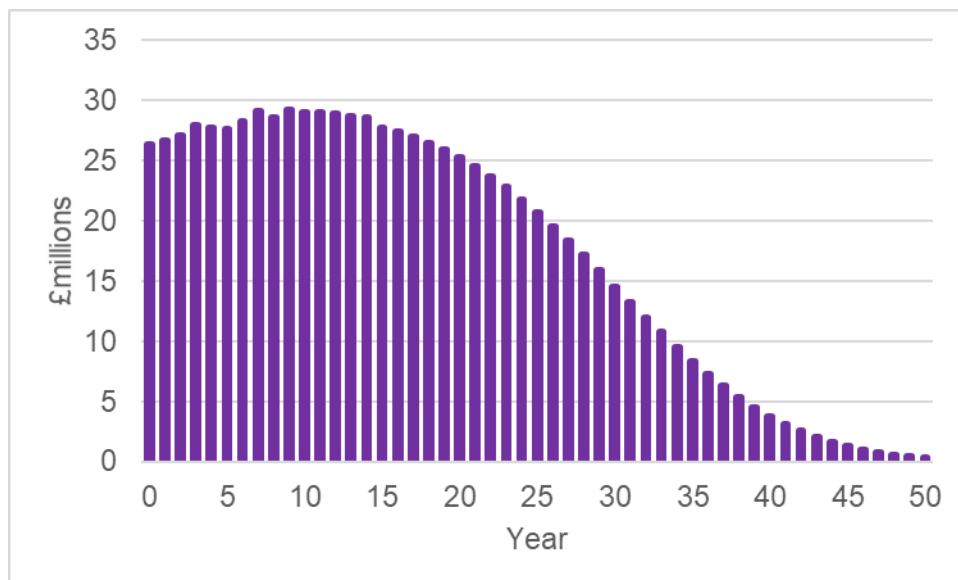
Other than TPR, no person or third party is entitled to place any reliance on the contents of this note and the analysis in the LTO report. GAD has no liability to any person or third party for any action taken or for any failure to act, either in whole or in part, on the basis of the analysis.

11 August 2020



1. Member benefit cash flows

We include below a chart of assumed projected member benefit cashflows underlying the example scheme of duration 14 years used to produce the analysis in section 3 of the Modelling the Long-Term Funding Objective report dated 14 February 2020. These are based on assumptions applicable as at 31 March 2018 used in the low-dependency (LD) basis analysis. Stochastic modelling was used to inform the report and hence the projected member benefit cashflows alter under each future economic scenario modelled.



2. Gilts discount rate

Please see Appendix A of GAD's 14 February 2020 report. Appendix A explains that – rather than using a single fixed gilts discount rate – the liability calculation discount rates are based on adjustments to the gilt yield curves in the economic scenario generator, i.e. a stochastic approach has been used. Each economic scenario will have its own yield curve that changes each year, but the medians closely reflect the market as at 31 March 2018. Page 33 explains that the economic scenario generator is calibrated such that the path of interest rates closely matches market yields, and this is illustrated in chart 3 on page 14. Page 33 also tabulates the gilt yield adjustments used for the various liability calculations.

3. Individual growth asset outperformance returns and volatility

Page 16 of our 14 February 2020 report tabulates returns in excess of gilts over 25 years for the portfolios considered in the LTO analysis. However, we set out below the summary of annualised mean gross returns and standard deviation for each of the asset classes in our growth asset sub-portfolio, used within the modelling.

Growth asset	Annualised mean gross return (arithmetic) over 10 years	Standard deviation (volatility) over 10 years
Global equity (ex UK) hedged	5.3%	16.6%
US high yield (corporate) bonds	5.3%	11.7%
(US) hedge funds	5.3%	9.9%
UK property	3.3%	13.0%

4. Portfolio details

Please refer to Appendix B of our 14 February 2020 report – we have specified the portfolio allocation used for the LTO analysis, split between growth, matching gilts, leveraged LDI and corporate bonds. We have also separated the growth portfolio into global equity, US high yield bonds, hedge funds and UK property.

5. Asset correlations

We set out below a selection of 10-year correlations between different asset classes within the economic scenarios used for the modelling.

Asset	Global equity (ex UK) hedged	US high yield (corporate) bonds	(US) hedge funds	UK property	Global corporate bonds	UK govt bonds
Global equity (ex UK) hedged		0.34	0.41	0.38	0.17	0.08
US high yield (corporate) bonds			0.68	0.15	0.54	-0.03
(US) hedge funds				0.19	0.65	-0.03
UK property					0.08	-0.03
Global corporate bonds						0.14
UK govt bonds						

6. Deficit recovery contributions (DRCs) maximum

As noted in paragraph 4.4 of the 14 February 2020 report, the analysis in the report for the period before a scheme reaches significant maturity is only intended to provide some context for the analysis of possible low dependency assumptions. Therefore, this analysis illustrates the impact of some example funding approaches that will not represent the approaches being adopted by all schemes. Per the footnote on page 26 of our report, “The annual contribution cap is set at the initial rate of DRCs, which is equivalent to 1.7% of the starting TP liability.” See also paragraph 4.9: “For the archetype with a weak sponsor covenant, deficit recovery contributions (DRCs) are limited (in nominal terms) to the amount that was payable at the start of the projection. Therefore, in some scenarios this can result in a recovery plan longer than 15 years in length.” This is an approximation of what schemes might currently be doing, adequate for the purposes of the report. However, paragraph 4.17 recommends that further analysis of the period before schemes reach significant maturity should be carried out, in order to consider the different paths that could be taken for a scheme to reach LD funding, noting that such analysis is beyond the scope of the report.

7. Investment strategy de-risking pattern and the link between Technical Provisions (TPs) and growth assets and how the TPs were calculated on the de-risking path

With reference to paragraph 4.7 of our 14 February 2020 report, “the investment strategy is assumed to de-risk over time as the scheme matures. The TP basis for each scheme adjusts consistently with this de-risking through the use of a higher pre-retirement discount rate than post-retirement discount rate. Consequently, as the scheme matures the effective discount rate reduces, as does the expected return on the scheme assets.” Given the high-level nature of the analysis involved in section 4, for the purposes of our report the investment strategy was de-risked on a straight line basis over the 15 years of the projection, such that the start and end portfolios for the projection were consistent with the assumed discount rate. As mentioned on page 8 of our report, and similarly to 6. above, considering the period before schemes reach significant maturity requires further analysis beyond the scope of the February 2020 report.