

# Scheme funding statistics

Valuations and recovery plans of UK defined benefit (DB)  
and hybrid pension schemes

June 2018

The Pensions  
Regulator

# Contents

	page
Overview	3
Tranche 11 summary	3
Key figures at a glance	4
Market conditions	5
Deficits	6
Funding strategies	8
Recovery plans	8
Contributions	11
Contingent security	14
Valuation assumptions	15
Discount rates	15
Life expectancies	17
How to contact us	back cover
Data summary tables	Separate annex

## Overview

This is the 2018 update to The Pensions Regulator's (TPR's) annual funding statistics for UK defined benefit (DB) and hybrid schemes. The tables in the annex are prepared in accordance with the UK code of practice for official statistics. The underlying data are sourced from valuations and recovery plans (RPs) submitted to TPR by schemes with deficit positions, and from annual scheme returns for schemes with surplus positions.

The update is based on Tranche 11 schemes (with effective valuation dates falling from 22 September 2015 to 21 September 2016 inclusive). These valuations (with due dates for receipt falling within the period December 2016 to December 2017) fall within the fourth triennial cycle of scheme funding.

The report shows funding trends in the context of market conditions, assumptions and scheme characteristics that impact on valuations. It also describes reported arrangements for recovery plans, employer contributions and contingent security.

Data summaries (tables) contained in the Annex provide more detail on the high level trends presented in this document.

 **This symbol will indicate instances when you may find it useful to refer to the Annex**

## Tranche 11 summary

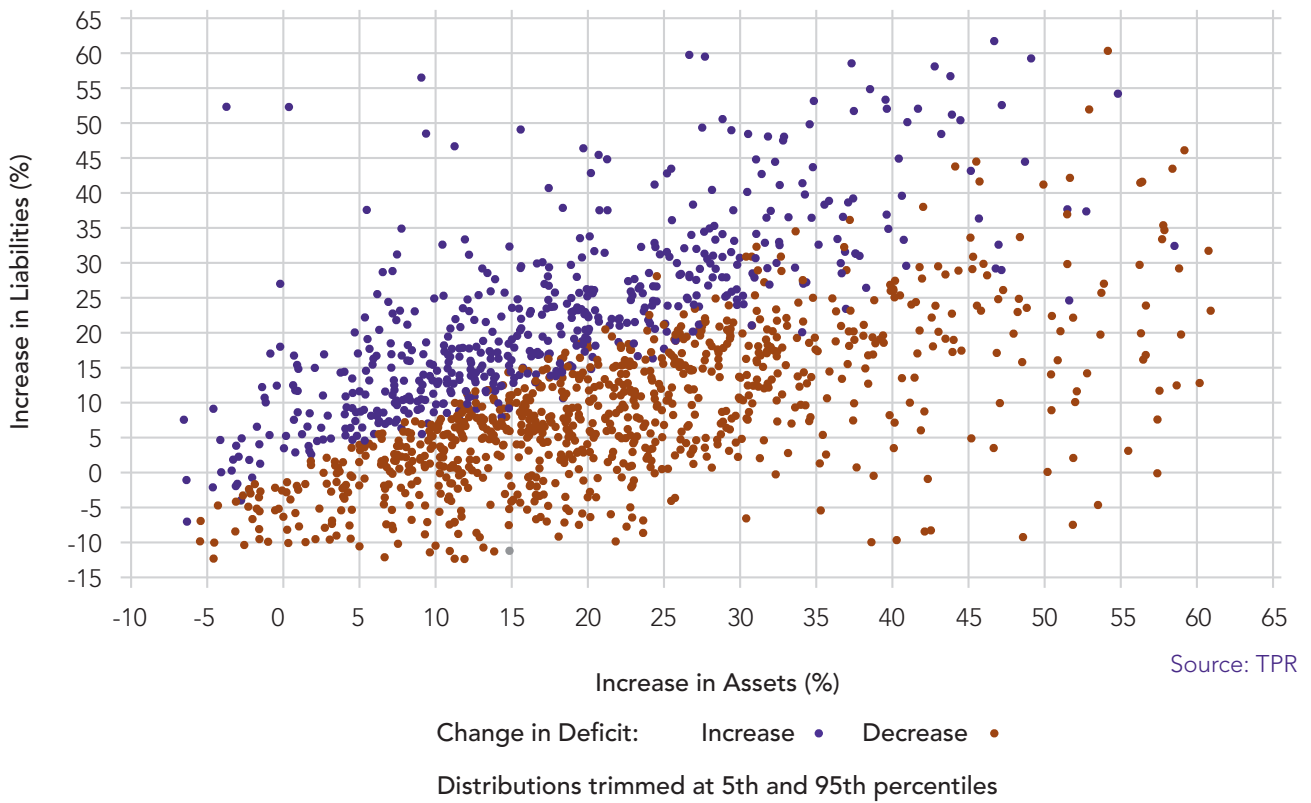
By the end of January 2018, TPR had received over 1,700 valuations with an effective valuation date for Tranche 11; just under one fifth of which reported a surplus on the Technical Provisions (TPs) funding basis. Of schemes submitting these valuations, nearly 80% had previously submitted valuations in respect of Tranches 8, 5, and 2.

The growth in assets outperformed the growth in liabilities between Tranche 8 and 11 valuation dates for many schemes, leading to an increase in the average<sup>1</sup> funding ratio on a TPs basis. Average annual deficit reduction contributions (DRCs) for Tranche 11 are greater than that for Tranche 8 at the median in nominal terms. The relative increase in average annual DRCs is 9% at the median; while the average (median) extension to the recovery plan end date, is around one and a half years.

Figure 1 illustrates the distribution of changes in deficits measured on a TPs basis for Tranche 11 schemes that previously submitted Tranche 8 valuations. Assets grew by 19% at the median compared to 12% for TPs. More schemes improved their positions over the inter-valuation period than saw deterioration in deficits.

<sup>1</sup> Averages are unweighted unless stated otherwise

**Figure 1: Distribution of the change in valuations from Tranche 8 to Tranche 11**



### Key figures at a glance



- ▶ 87%: average ratio of assets to TPs for schemes in deficit and surplus.
- ▶ 110%: average ratio of assets to TPs for schemes in surplus.
- ▶ 7.8 (7.2) years: average (median) RP length for schemes in deficit.
- ▶ 3.29%: average nominal single effective discount rate (SEDR) for Tranche 11 schemes in deficit and surplus; with 50% of assumptions falling on or between 2.89% and 3.70%.
- ▶ 0.09%: average real SEDR for schemes in deficit and surplus; with 50% of assumptions falling on or between -0.26% and 0.48%.
- ▶ 89.7 (91.9) years: median life expectancy of a future male (female) pensioner currently aged 45 for schemes in deficit and surplus.

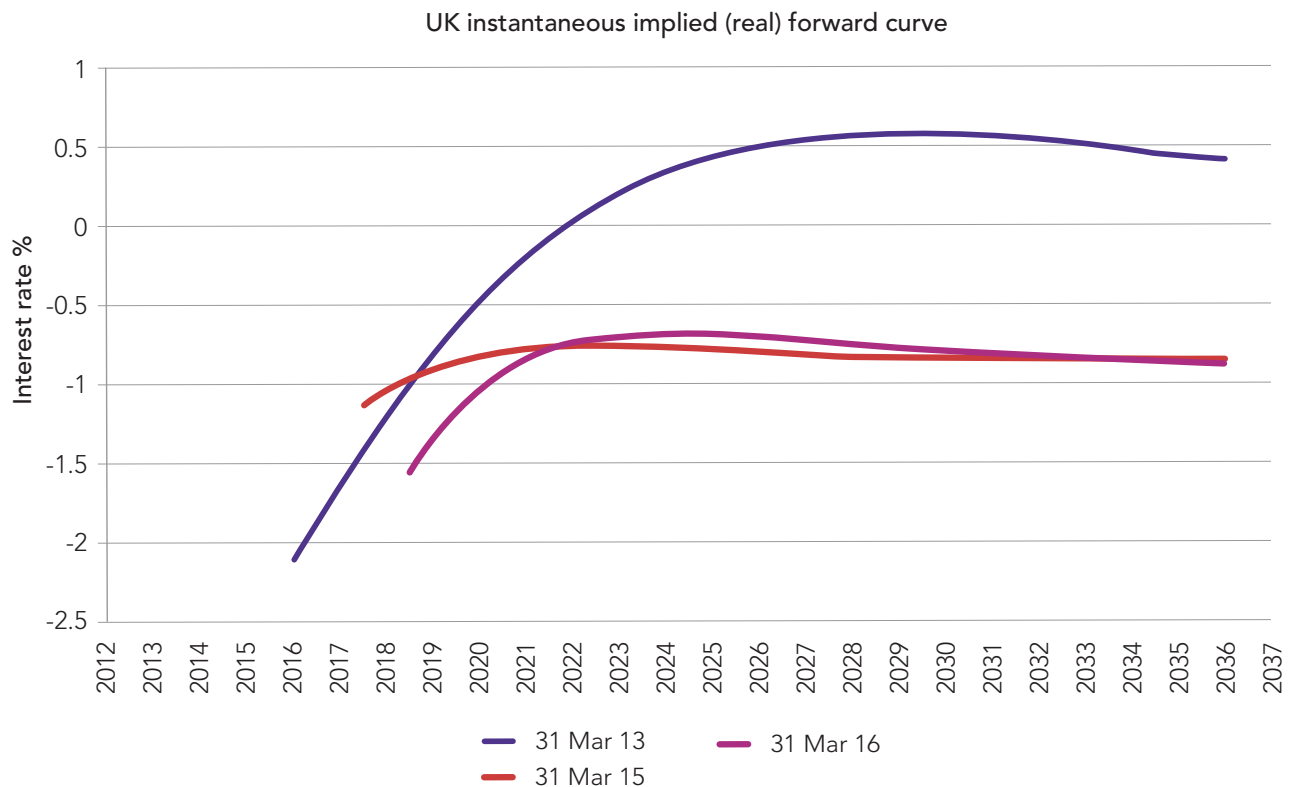
## Market conditions

During the inter-valuation period (ie between Tranches 8 and 11), growth in the UK economy rose (in 2014) to its highest level since 2005<sup>2</sup>. Equity markets generally performed well over the same period. Relative to 31 March 2016 (the effective date of many Tranche 11 valuations), the FTSE All-Share Index realised a 3-year and 5-year total return of around 11% and 32%<sup>3</sup> respectively, although the value of index<sup>4</sup> on that date was only marginally higher compared to its value three years earlier.

Between Tranche 8 and Tranche 11 valuations, yields on corporate and government bonds continued on a declining trend, with market expectations for future interest rates being revised downward. The real 20-year spot rate of interest, already in the region of negative yields during the previous valuation period, dipped below -1% towards the end of the Tranche 11 period.

Figure 2 shows market expectations for real interest rates as estimated by the Bank of England in the inter-valuation period. Compared to March 2013, forward interest rates at the end of March 2016 show an expectation for lower suppressed yields. Compared to the outlook one year earlier, forward interest rates are lower at shorter maturities and marginally higher at medium-term maturities.

**Figure 2: UK instantaneous real forward curve**



Source: Bank of England

2 Office for National Statistics, Gross Domestic Product: year on year growth

3 FTSE Russell factsheet (31 March 2016)

4 Thomson Reuters

## Deficits

Like the previous tranche, Tranche 11 schemes have seen improved asset positions – which may have been due to the combined impact of:

- ▶ sponsor contributions (regular and remedial)
- ▶ increases in some asset values, and
- ▶ positive (overall) gains on investments in the three years to valuation.

Liabilities have also grown due, in part, to lower investment return assumptions relative to those assumed in the previous valuation – which in turn may have been driven by revised (lower) expectations for long-dated bond yields relative to Tranche 8 valuations. In general, schemes with hedged positions in respect of interest rate risk will have fared better overall.

**87%**

Average ratio of assets to TPs for schemes in deficit and surplus

**110%**

Average ratio of assets to TPs for schemes in surplus only

For schemes submitting valuations in respect of both Tranche 8 and Tranche 11, the median increase in assets and TPs between valuations is 19% and 12% respectively. The average ratio of assets to TPs for Tranche 11 is 87% (89% weighted<sup>5</sup>), a 5 percentage point improvement on the average for Tranche 8 arising from stronger growth in assets relative to liabilities. The average ratio is generally higher for schemes:

- ▶ that report liabilities in respect of active memberships
- ▶ with stronger covenants (deficit schemes only)
- ▶ without a contingent asset
- ▶ with shorter RPs

Additionally, the average funding ratio exceeds 90% for:

- ▶ the most mature schemes (pensioner liabilities that represent 75% or greater of total liabilities)
- ▶ the smallest schemes (where total liabilities are less than £5m), and
- ▶ schemes with the most conservative investment strategies (less than 20% of assets invested in return-seeking investments). This trend may reflect that many schemes de-risk as funding improves.

 See Tables 2.1 and 2.3(b) in the Annex

5 Weighted by TPs

For schemes in surplus only, the average ratio of assets to TPs is 110% (104% weighted).

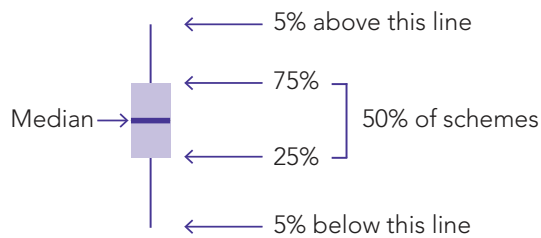
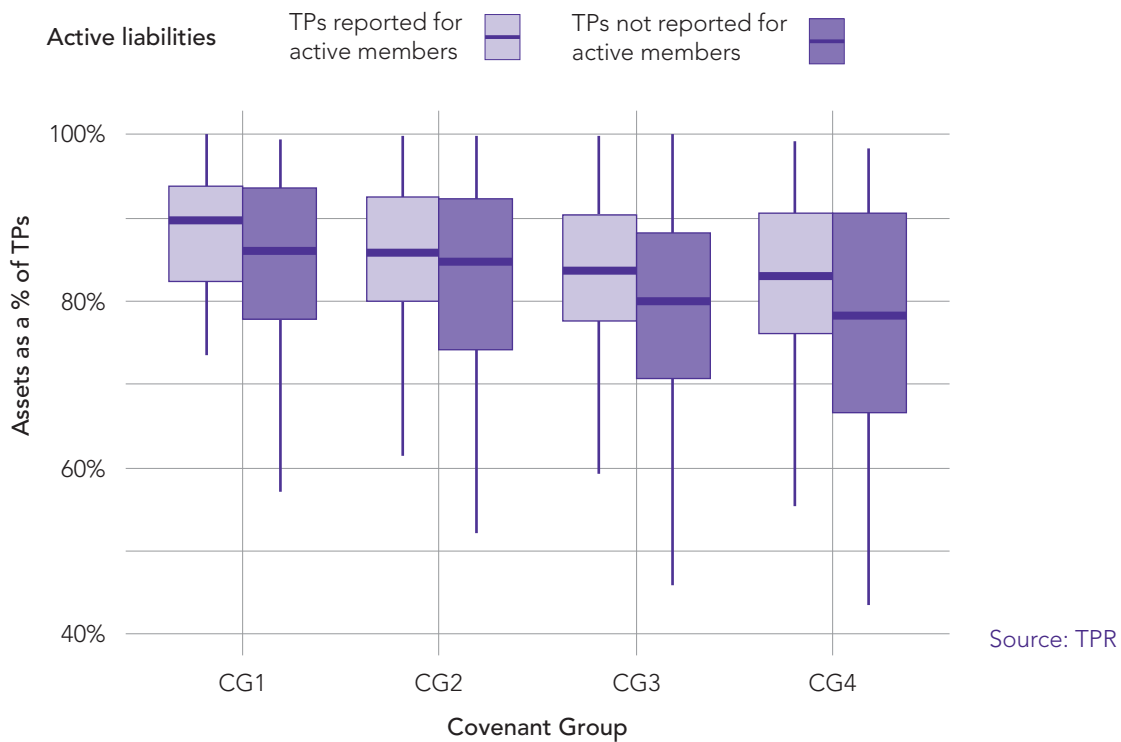
Figure 3 below shows the distribution of the ratio of assets to liabilities on a TPs basis for Tranche 11 schemes in deficit by covenant group<sup>6</sup>, and whether schemes report liabilities in respect of active members.

 See Table 2.3a in the Annex

Generally, the distribution of funding levels is higher for schemes with stronger employers. For any given covenant group, schemes reporting active member liabilities are better funded on average than those that do not. This trend is least pronounced for schemes in covenant group 2 which comprises nearly half of all Tranche 11 schemes in deficit.

Relatively higher funding among open schemes and schemes closed to new members could reflect that less well-funded schemes are more likely to close to future accruals. Also, for a given maturity, the average funding level of schemes with active liabilities will be either comparable to that of schemes without active liabilities, or higher – except for the most mature schemes (as noted earlier).

**Figure 3: Ratio of assets to TPs for Tranche 11 (by covenant and active member indicator) – schemes in deficit only**



6 Defined as: 1 (strong), 2 (tending to strong), 3 (tending to weak), and 4 (weak)

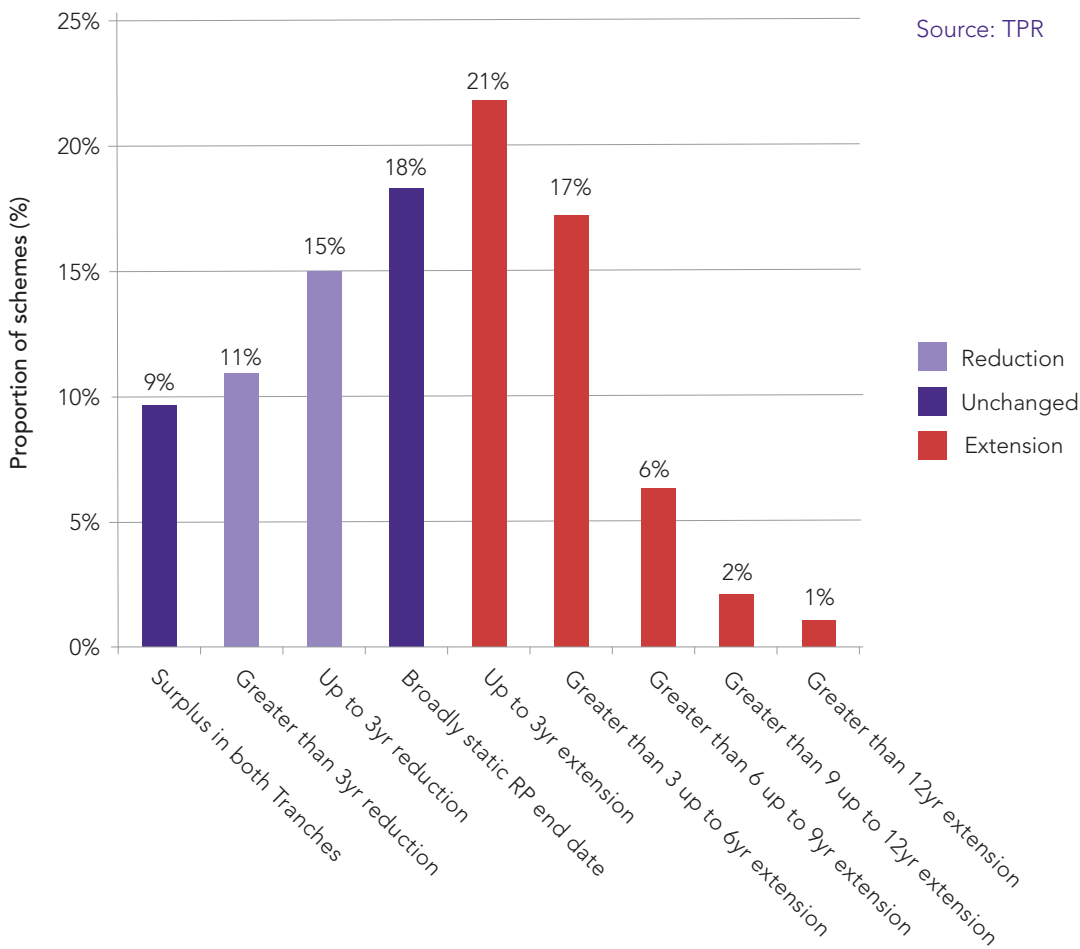
# Funding strategies

## Recovery plans

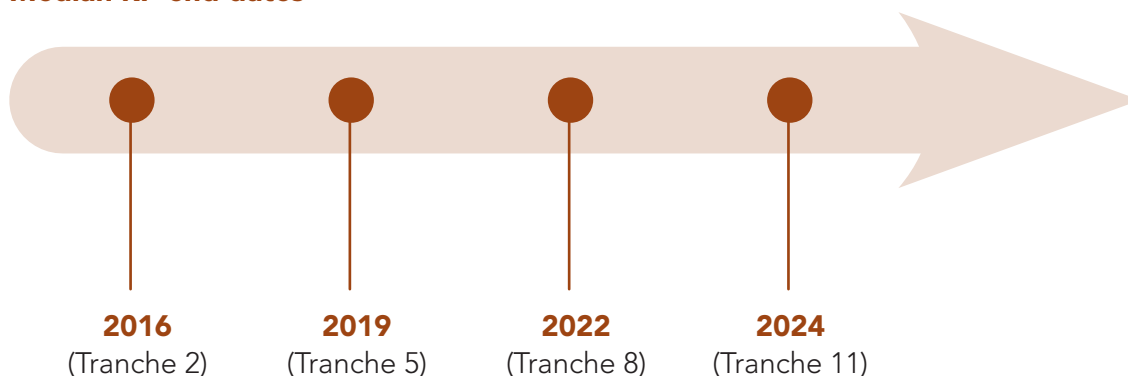
For many schemes, a smaller deficit has led to a shortened recovery period relative to that agreed under the Tranche 8 valuation.

Figure 4 shows the distribution of changes to RP end dates for Tranche 11 schemes that had previously submitted Tranche 8 RPs. Just over half of schemes (including those which remain in surplus) have brought forward their RP plan end dates or have left them unchanged, while under a tenth have extended their RP end dates by more than six years.

**Figure 4: Distribution of changes to RP end dates**





**Median RP end-dates**

In respect of their first valuations under scheme specific funding, schemes in the Tranche 2/5/8/11 cohort had a median recovery plan end-date falling in 2016. Under the fourth cycle of funding the same schemes have a median recovery plan end-date falling in 2024.

The mean and median RP lengths for Tranche 11 are 7.8 years and 7.2 years respectively. Tranche 11 RP end dates exceed those of Tranche 8 by 1.4 years at the median. Longer plans tend to be associated with schemes:

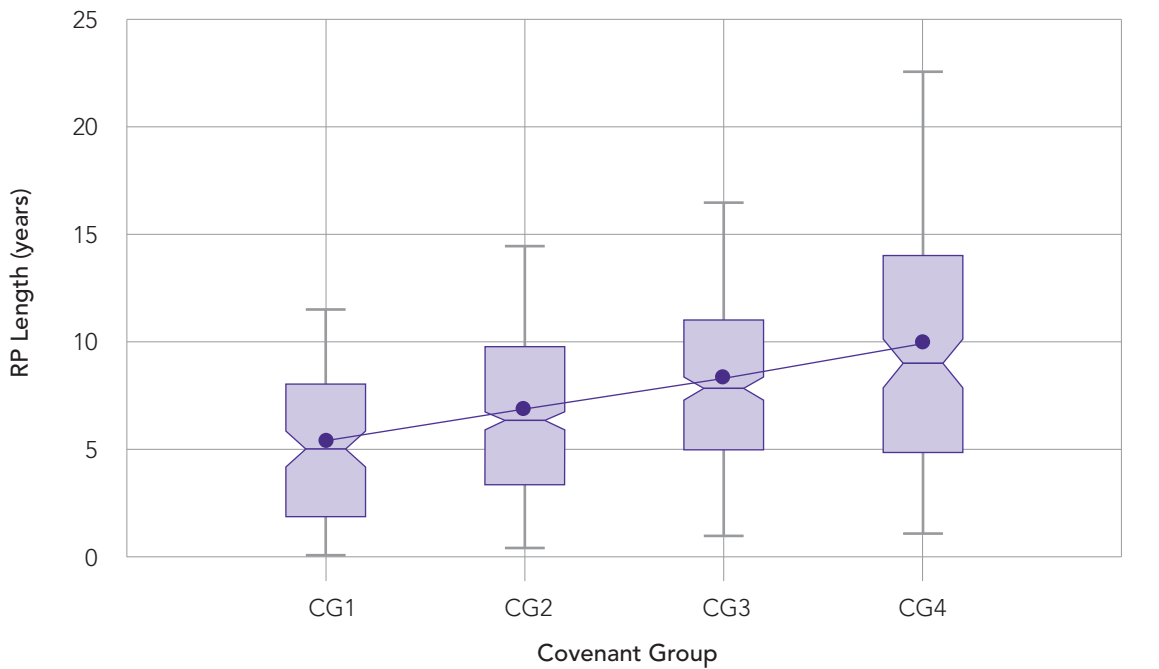
- ▶ with contingent assets
- ▶ with weaker covenant<sup>7</sup> support, and
- ▶ greater than a 40% allocation to return-seeking assets (which may reflect de-risking among schemes with better funding/relatively shorter recovery plans)
- ▶ that are larger (by TPs).

 See Tables 3.1 and 3.3 in the Annex

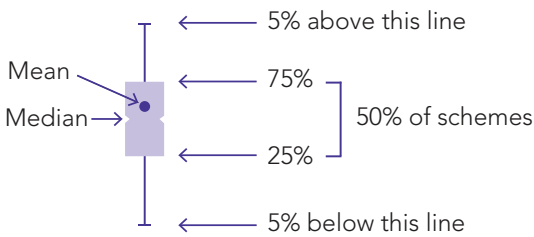
Figure 5 shows the distribution of RP lengths for Tranche 11 schemes by covenant group<sup>7</sup>. Three-quarters of schemes in covenant group 1 have RPs of at most eight years, while the same proportion of schemes in covenant group 4 have RPs of up to 14 years.

<sup>7</sup> Based on covenant group

**Figure 5: Distribution of RP length by covenant (Tranche 11)**



Source: TPR



The median extension to the RP end-date for schemes migrating from covenant group 2 to covenant group 4 over the inter-valuation period is three years (see Table 1 below). Generally, an improvement in covenant is associated with a lesser extension to recovery plans compared with that under a static transition or a weakening of covenant.

**Table 1: Median RP end-date extension by covenant group migration (Tranche 11 schemes in deficit only)**

Covenant group		Tranche 11			
		CG1	CG2	CG3	CG4
Tranche 8		Median RP end-date extension (years)			
	CG1	2.0	1.8	*	*
	CG2	0.8	1.2	1.5	3.3
	CG3	*	0.5	2.0	1.8
	CG4	*	0.0	0.1	1.9

\*Insufficient observations

## Contributions

For schemes in deficit with valuations in respect of both Tranches 8 and 11, average annual DRCs increased (in nominal terms) at the median.

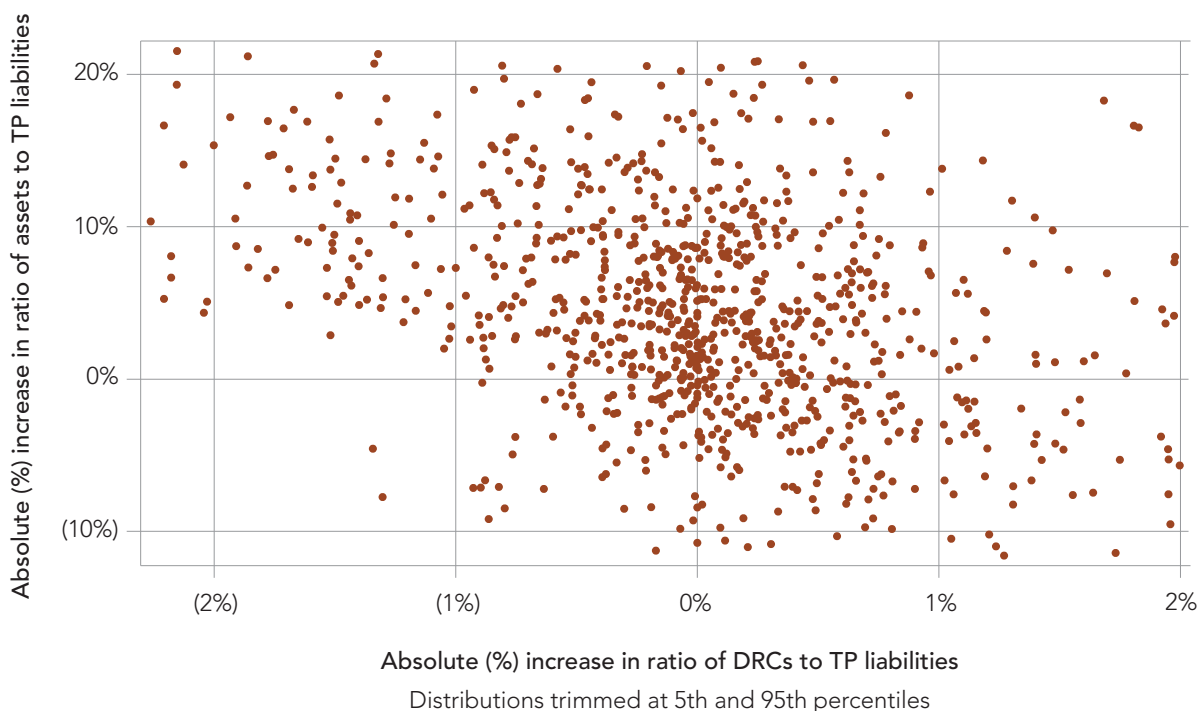
As a proportion of liabilities calculated on a TPs basis, average annual DRCs for Tranche 11 schemes are relatively unchanged at 2.1% compared to 2.2% for Tranche 8 schemes on average. This is influenced by increases in liabilities calculated on a TPs basis, as well as changes in nominal DRCs. The median increase in TPs is 12% and the corresponding relative increase in average annual DRCs is 9%. A higher level of DRCs as a percentage of liabilities on a TPs basis is associated with:

- ▶ shorter RPs
- ▶ smaller schemes (by both TPs and members)
- ▶ lower maturity (schemes with pensioner liabilities that are less than 25% of total liabilities), and
- ▶ schemes with a lower ratio of assets to TPs

Figure 6 shows the extent to which the percentage point increase in average annual DRCs as a proportion of TPs varies by the percentage point increase in TPs funding for Tranche 11 schemes in deficit. It can be seen that the majority of schemes with positive increases in funding ratios from Tranche 8 to 11, have increases to average annual DRCs as a proportion of liabilities that are concentrated in the range: -1% to 0.5%.

The converse holds true for schemes with a negative increase in the funding ratio (ie they have increases to the average annual DRCs as a proportion of liabilities that are concentrated in the range: -0.5 to 1%). The level of DRCs will be influenced by extensions made to RP ends dates (1.4 years at the median) as well as changes to the size of deficits

**Figure 6: % (Absolute) increase in DRCs as a proportion of TP liabilities vs. % (Absolute) increase in the ratio of assets to TPs (schemes in deficit only)**



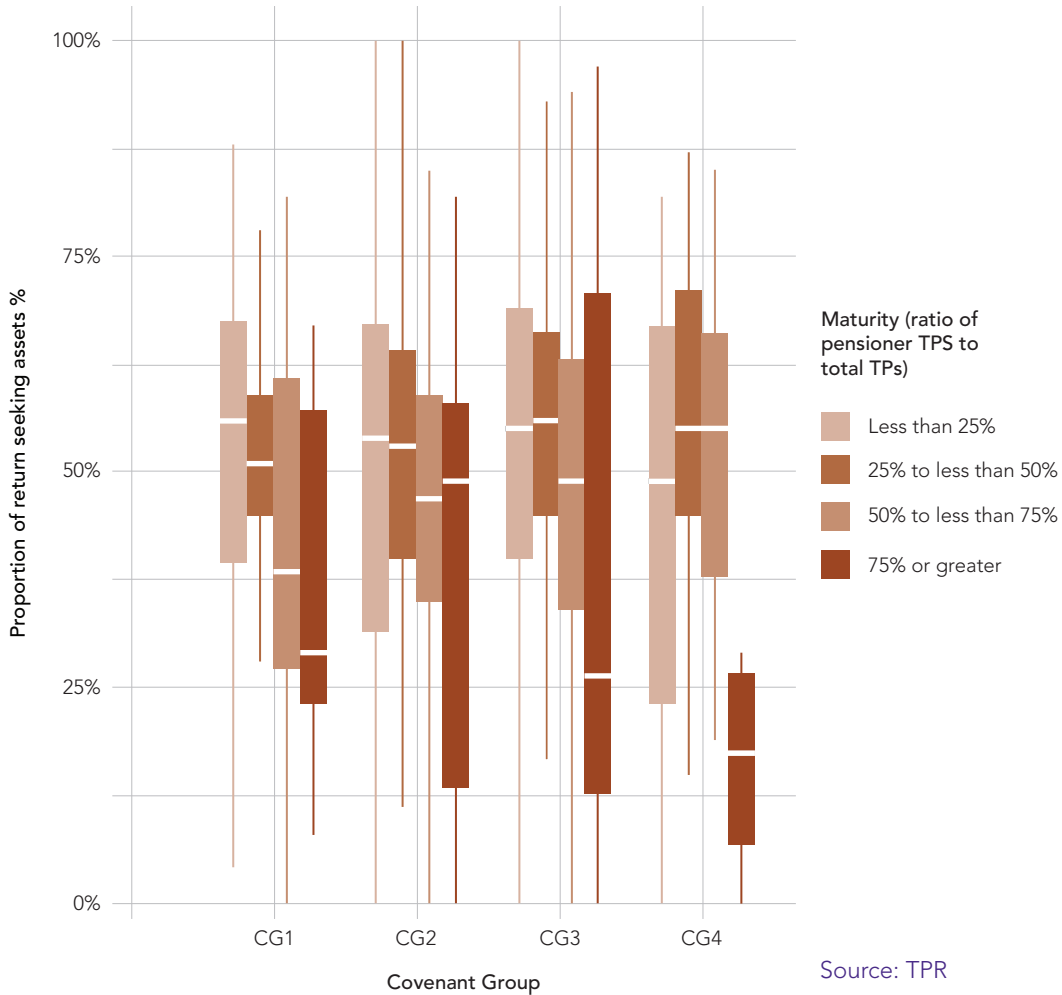
Source: TPR

The majority of Tranche 11 schemes have less than 60% of assets invested in return-seeking<sup>8</sup> asset classes, while over a quarter of schemes have a higher allocation to riskier assets. A relatively lower proportion of return seeking assets is associated with assets more robust to downside investment risk (as measured by the Pension Protection Fund (PPF) stressed assets ratio) although the presence of hedging may mitigate this effect for some schemes. Among Tranche 11 schemes there is little evidence of a greater prevalence of riskier investments among schemes with a stronger covenant. This could be because schemes with stronger covenants tend to be better funded (see Figure 3 on page 7) and better funded schemes may be more likely to afford (and hence adopt) de-risking strategies.

<sup>8</sup> 'Return-seeking assets' in this report include equities, commodities, 60% of insurance policies, 75% of property, 80% of hedge funds, 25% of corporate bonds and assets held in the 'other' category

Figure 7 shows the distribution of return seeking assets by covenant group and maturity for schemes in deficit. For all covenant groups, the scheme's allocation to riskier investments is linked to maturity. The median allocation to return seeking assets is 55% for covenant group 3 schemes with pensioner liabilities that are less than 25% of total liabilities, compared to 26% for covenant group 3 schemes with pensioner liabilities that are 75% or a greater proportion of total liabilities.

**Figure 7: Distribution of return-seeking assets by covenant group and maturity**




## Contingent security

Like the previous tranche, nearly one fifth of Tranche 11 schemes have additional security in the form of one or more contingent assets – which typically, but not always, takes the form of guarantees from a sponsor’s parent or associated entity.

Around one tenth of schemes have contingent assets that are formally recognised by the PPF in the calculation of the PPF risk-based levy. A similar proportion have contingent assets that are not recognised by the PPF but are reported as additional security in support of funding. The presence of contingent assets is associated with:

- ▶ larger schemes, and
- ▶ weaker covenant support

 See Tables 2.6 and 2.7 in the Annex

## Valuation assumptions

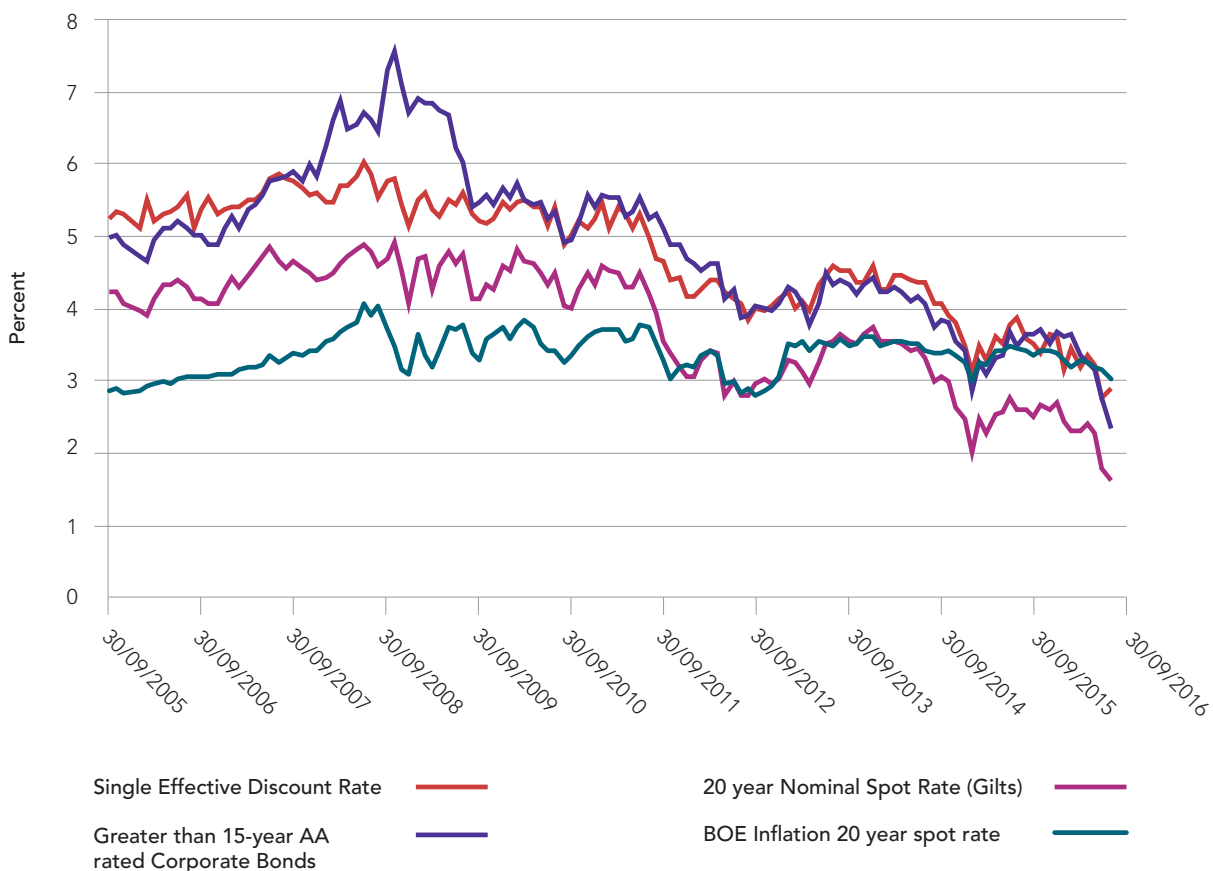
### Discount rates

Market experience and changing expectations over the inter-valuation period may be reflected in discount rates to varying degrees - depending on investment strategy and or, valuation approach. The statistics show an association between the TPs discount rate and a scheme's investment strategy. (The investment strategy of a scheme is approximated here by the scheme's allocation to return-seeking assets and may itself take some account of the ability of the employer to underwrite downside risk).

Between Tranche 8 and Tranche 11 valuations, the 20 year nominal spot rate on gilts declined overall. Near the end of the Tranche 11 valuation period, it had reached a 10 year low. The gap between implied inflation and the nominal gilt yield, which had widened during the Tranche 10 valuation period, remained so – keeping real yields negative over the Tranche 11 valuation period. For 31 December 2015 and 31 March 2016 (the two most common Tranche 11 valuation dates), the 20 year spot rate is 2.71% and 2.32% respectively, while the corresponding median single effective discount rate (SEDR) for valuations is 3.60% and 3.20% respectively. At these two dates, the SEDR closely approximated the rate of 20 year market implied inflation.

Figure 8 shows the median SEDR relative to 20 year UK gilts, 20 year spot inflation, and greater than 15 year AA-rated corporate bonds (for schemes in deficit in Tranches 1 to 7 and for all schemes in Tranches 8 to 11).

**Figure 8: Median (nominal) SEDR, 20-year nominal UK government spot rate, greater than 15-year AA corporate bonds, and 20-year inflation**



Source: TPR, Thomson Reuters, Bank of England, Markit iBoxx

The average real SEDR is 0.09% for Tranche 11, compared to 0.87% for Tranche 8.

 See Table 4.2 in the Annex

Schemes with a higher proportion of return-seeking assets tend, on average, to assume a higher discount rate. The implied level of outperformance over gilts in the discount rate appears to have an even stronger relationship to the proportion of return-seeking assets held by schemes – although there is a wide range of assumptions in discount rate outperformance among schemes with a similar allocation to return-seeking assets.

The average assumed return over gilts is lower for Tranche 11, compared to Tranche 8. The average outperformance of the real SEDR over the 20 year real government spot rate is 0.99% for Tranche 11, compared to 1.12% for Tranche 8.

 See Table 4.2 in the Annex



## Life expectancies

While there were notable increases in average assumed life expectancies over the first three funding cycles, reflecting stronger mortality assumptions over that period, average life expectancy assumptions are slightly lower for Tranche 11 schemes relative to Tranche 8 for both future and current pensioners.

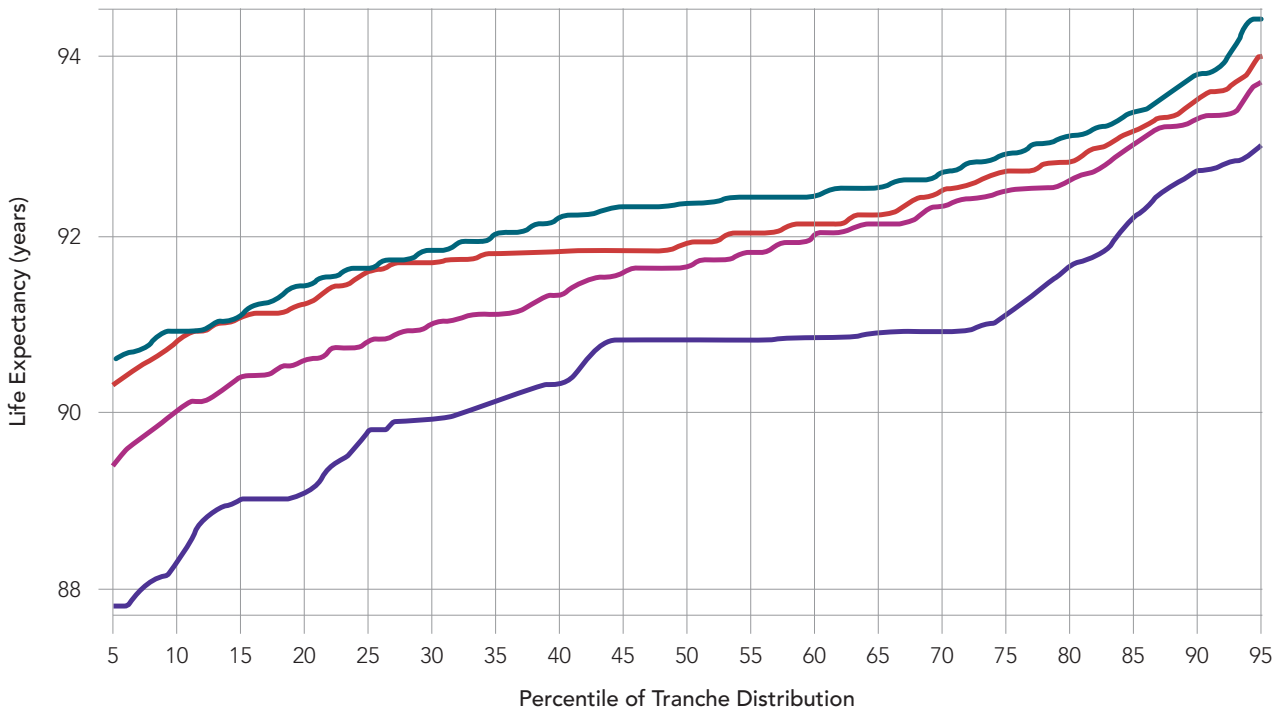
 See Table 6.1 in the Annex

This reflects the general trend observed in the wider population over the last few years and that almost all schemes use the CMI mortality projection model when allowing for future improvements. The average assumed life expectancy for a current male pensioner aged 65 is 87.8 years (compared to 87.9 years in Tranche 8). In respect of the underlying mortality assumptions:

- ▶ 94% of Tranche 11 schemes use the SAPS tables
- ▶ 55% apply a scaling factor or rating to base tables to adjust for scheme experience
- ▶ 96% use the continuous mortality investigation (CMI) projection model (first published in 2009) to allow for future improvements
- ▶ while over four fifths of schemes assume a long term rate of improvement/underpin of 1.5% or higher; with 6% assuming a rate of 2% or higher.

Figures 9a and 9b show the distribution of assumed life expectancies for future pensioners aged 45 (male and female) respectively, for Tranches 2, 5, 8 and 11. At the median, the assumed life expectancy of a future male pensioner currently aged 45 for Tranches 8 and 11 is 89.9 and 89.7 years, respectively. Similarly, the median life expectancy of a future female pensioner currently aged 45 for Tranches 8 and 11 is 92.3 and 91.9 years respectively. The median life expectancy assumption for future pensioner males (females) in Tranche 11 is higher than the corresponding assumption for Tranche 2 by over 1.7 years (1.1 years).

**Figure 9a: Distribution of life expectancy assumptions for future female pensioners currently aged 45 (Tranches 2, 5, 8, 11)**

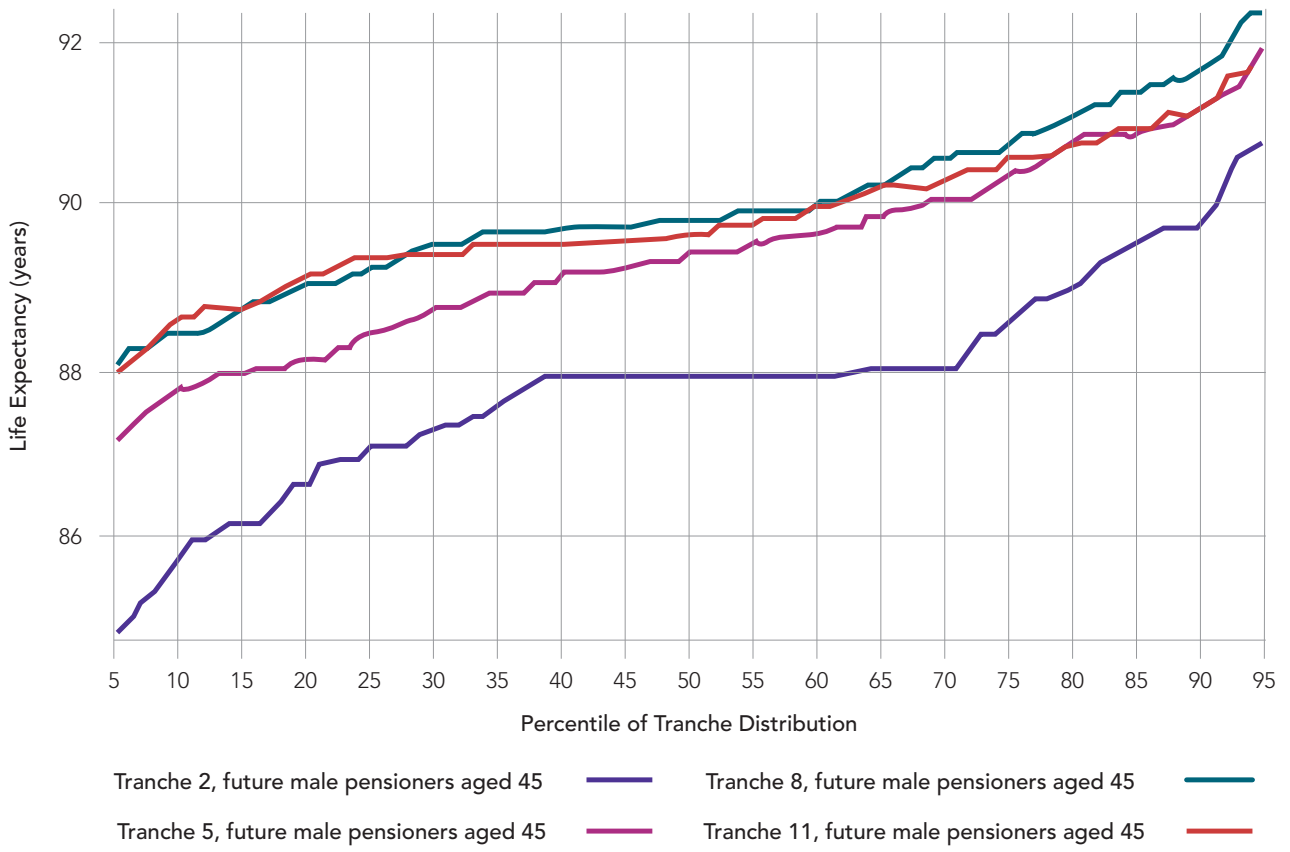


Tranche 2, future female pensioners aged 45 ——— Tranche 8, future female pensioners aged 45 ———  
 Tranche 5, future female pensioners aged 45 ——— Tranche 11, future female pensioners aged 45 ———

Distributions trimmed at 5th and 95th percentiles

Source: TPR

**Figure 9b: Distribution of life expectancy assumptions for future male pensioners currently aged 45 (Tranches 2, 5, 8, 11)**



Distributions trimmed at 5th and 95th percentiles

Source: TPR

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## Scheme funding statistics

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