Pension
Protection
Fund

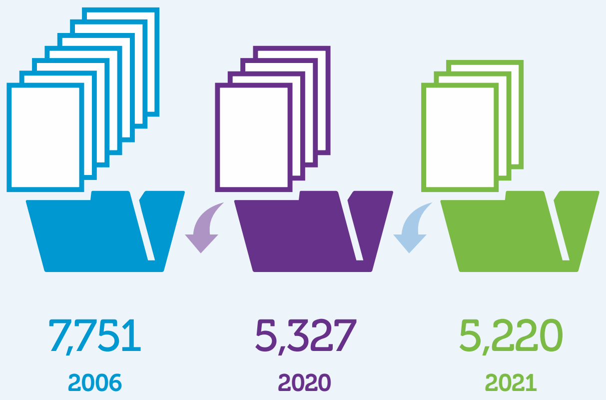
The Purple Book 2021

DB pensions universe
risk profile

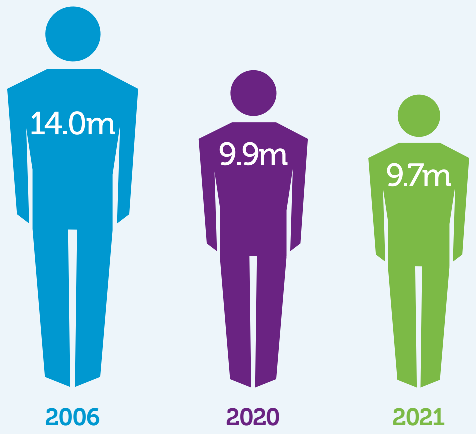
Overview

Overview

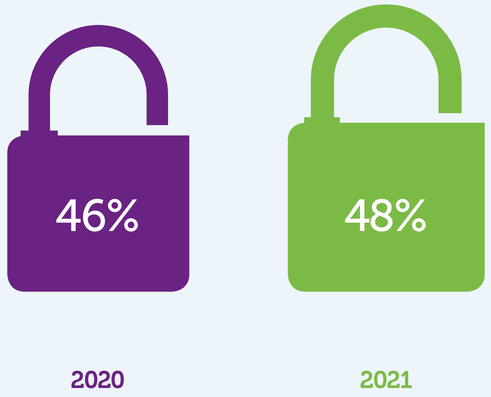
Number of eligible schemes



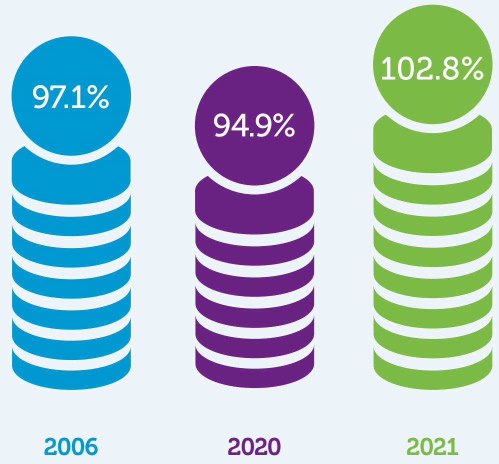
Number of members



Proportion of schemes closed to all benefit accrual



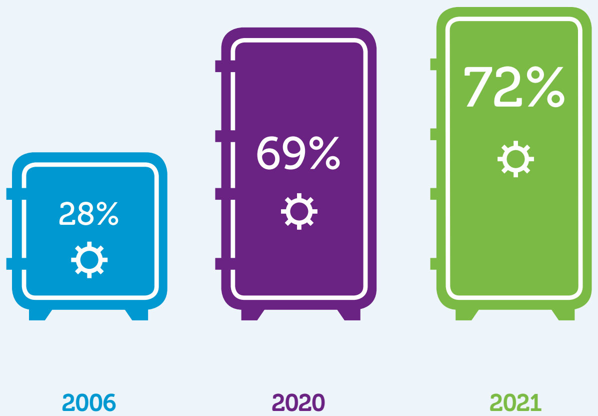
Scheme funding



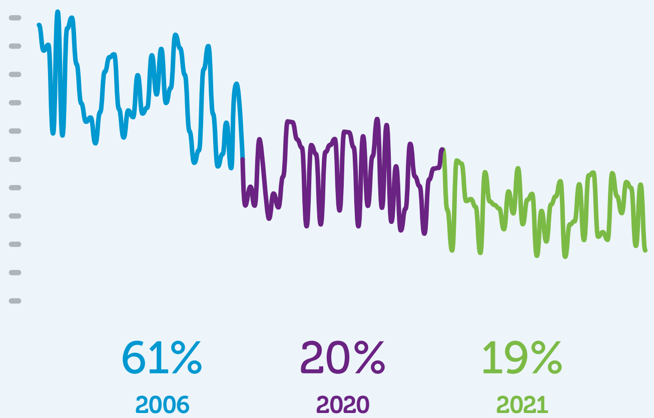
Surplus/deficit of schemes in surplus/deficit

PPF Probability of Success

Bonds trend



Equities trend



Number and liabilities of schemes in PPF assessment

Introduction

The Purple Book, also known as The Pensions Universe Risk Profile, is now in its 16th edition. We've published *The Purple Book* annually since 2006, giving the most comprehensive data and analysis of the UK defined benefit (DB) pension landscape. This publication tracks trends in DB scheme funding, demographics, asset allocation and more. It also gives us, the Pension Protection Fund (PPF), an in-depth understanding of the risks we face from the universe of schemes we protect. Understanding this information helps us to model the level of claims we may need to absorb in years to come, and helps inform decisions on our funding strategy.

01
Executive summary

Highlights and key trends from this year's *Purple Book.*

Data

There are estimated[1] to be 5,220 schemes in the PPF-eligible universe as at 31 March 2021, a reduction from 5,327 as at 31 March 2020. The declining universe reflects schemes winding up, scheme mergers, and schemes entering PPF assessment. This year, *The Purple Book* dataset covers 5,215 schemes – 99.9 per cent of the estimated 5,220 schemes eligible for PPF compensation.

Schemes with more than 5,000 members make up almost 75 per cent of each of total assets, liabilities and members, while only forming seven per cent of the total number of schemes in *The Purple Book 2021* dataset. Conversely, schemes with fewer than 1,000 members make up 80 per cent of the total number of schemes but only around 10 per cent of total assets, liabilities and members.

Scheme demographics

The proportion of schemes open to new members remained at 11 per cent, the same as in *The Purple Book 2020.* While the number of open schemes fell sharply from 2006 to 2010, the decline has slowed since then. Schemes that are closed to new members continue to close also to new benefit accrual, with a rise to 48 per cent from 46 per cent in 2020. The proportion of schemes closed to new benefit accrual is nine percentage points higher than the proportion closed to new members.

There are just under one million active members in *The Purple Book 2021* dataset who are members of a scheme still open to new benefit accrual and who continue to accrue benefits. This is a reduction of four per cent over the year. The number of active members has fallen each year since the first edition of *The Purple Book* in 2006, when there were 3.6 million active members.

Schemes that remain open tend to have a larger membership. 23 per cent of members were in open schemes, with a further 43 per cent in schemes that are closed to new members but open to new benefit accrual.

The Purple Book 2021 dataset includes 9.7 million Defined Benefit (DB) scheme members, down from 9.9 million last year. Of these:
- 43 per cent are pensioner members;
- 47 per cent are deferred members; and
- 10 per cent are active members.

Scheme funding

Universe scheme funding improved in the year to 31 March 2021. The net funding position on a section 179 (s179) basis as shown in the PPF 7800 Index improved to a surplus of £46.9 billion compared to a deficit of £90.7 billion the year before, while the aggregate funding ratio increased to 102.8 per cent from 94.9 per cent. The increase in the aggregate funding ratio is mainly the result of market movements, primarily the result of higher gilt yields driving down liability values by more than the corresponding decrease in asset values, together with large increases in equity values. There was a further increase in the aggregate funding ratio from reflecting up-to-date valuations and the latest eligible universe available by updating to the new *Purple Book 2021* dataset.

On an estimated full buy-out basis, the net funding position improved to a deficit of £615.3 billion from a deficit of £668.5 billion the year before and the funding ratio improved from 71.8 per cent to 73.7 per cent.

Asset allocation

The aggregate proportion of schemes' assets invested in equities fell from 20.4 per cent to 19.0 per cent while the proportion in bonds rose from 69.2 per cent to 72.0 per cent.

Within bonds, the index-linked bonds proportion increased from 46.1 per cent to 47.2 per cent. The corporate bonds proportion increased slightly from 28.0 per cent to 28.2 per cent, while the government fixed interest bonds proportion fell from 25.9 per cent to 24.6 per cent.

Within equities, the UK-quoted proportion fell from 13.3 per cent to 11.6 per cent. The overseas-quoted proportion decreased from 69.0 per cent to 68.3 per cent, while the proportion of unquoted/private equities increased from 17.7 per cent to 20.1 per cent.

1 The number of schemes in the PPF-eligible universe as at 31 March 2021 could be different from 5,220 if any of these schemes are discovered to be ineligible for PPF protection or if any other schemes are discovered to be eligible for PPF protection as at 31 March 2021.

Risk reduction

DB pension schemes have continued to close to new benefit accrual. They have also continued to move their investment allocation away from equities and towards bonds, continuing the trend for de-risking assets.

Based only on current recovery plans in place, total annual recovery plan payments are indicated to decrease by around 94 per cent over the next 10 years, from around £12.2 billion in 2021 to around £0.8 billion in 2031, as schemes increasingly become fully funded on a Technical Provisions basis. However, this only shows the current position so changes may be made to existing recovery plans and new recovery plans may be put in place in the future if experience is different from what has currently been assumed by schemes.

Analysis of The Pensions Regulator's (TPR's) latest Technical Provisions and recovery plan data shows that in Tranche 14[2], the average recovery plan length was 5.9 years, over a year and a half less than that of Tranche 11 (comparable given the three-year valuation cycle). Assets as a percentage of Technical Provisions increased from 87.0 per cent in Tranche 11 to 91.4 per cent in Tranche 14.

The total number of contingent assets submitted to the PPF for the 2021/22 levy year was 317, compared with 395 in 2020/21. This is largely because fewer Type A contingent assets (employer parent or group guarantees) were certified for PPF levy purposes.

There were £56 billion worth of risk transfer deals (buy-ins, buy-outs and longevity swaps) in 2020, up from £54 billion the previous year. However, this is still a relatively small amount in the context of the whole universe of schemes.

PPF levy, claims, and compensation

- In 2020/21, the levy totalled £630 million, up from £564 million the previous year.
- The top 100 levy payers accounted for 55 per cent of the total levy, up from 51 per cent last year.
- 28 per cent of schemes had no risk-based levy while 3.0 per cent of schemes saw the cap of 0.5 per cent of smoothed liabilities apply to their risk-based levy.
- 82 per cent of the total levy came from schemes sponsored by employers categorised as 'Non-Subsidiaries £30 million+ and Large Subsidiaries', 'Credit Rated' or 'Group £50m+' for Experian scorecard purposes.

In the year to 31 March 2021, 30 new schemes entered PPF assessment. This is lower than last year when there were 41 new schemes but is similar to the year to 31 March 2019 when there were 26 new schemes. The total value of the year's claims was £0.2 billion (as measured on an s179 basis), which is lower than last year's claims of £0.5 billion.

In the year to 31 March 2021, the PPF made compensation payments of £1,006 million – the highest to date – compared with £860 million in the previous year. As at 31 March 2021, there were 184,844 records in respect of members receiving compensation[3], up from 169,861 a year earlier. The average annual payment per record to members receiving compensation was £4,829, up from £4,588 as at 31 March 2020.

PPF risk developments

The table below highlights some of the key results from the PPF's financial modelling:

Probability of success	95 per cent, up from 83 per cent last year as the funding levels of the PPF and the schemes we protect have improved significantly since March 2020.
Funding horizon and target funding margin	2030 and 10 per cent, unchanged since last year.

We have also carried out sensitivity testing to understand the key financial risks to which we are exposed.

We continue to monitor, and seek to understand, the impacts of the key risks we face including:
- The impact of economic trends, including the COVID-19 pandemic and Brexit, on both our financial position and that of the scheme universe. This includes consideration of the level of claims that may occur in the future.
- The impact of changes in the regulatory environment including potential changes to the scheme funding regime and increased disclosure requirements for climate change risk. We have also been seeking to understand the impact of new guidance for commercial pension scheme consolidators.

Economy and market background

The following table sets out how some key market indicators in the assessment of universe scheme assets and s179 liabilities have changed over the year:

Market indicator	Change over the year to 31 March 2021
10-year fixed interest gilt yield	0.53pp
15-year fixed interest gilt yield	0.53pp
20-year fixed interest gilt yield	0.54pp
5–15-year index-linked gilt yield	-0.09pp
FTSE All-Share Index (TR)	26.71%
FTSE All-World Ex-UK Index (TR)	40.40%

pp = percentage point(s)
TR = Total Return

2 Tranche 14 covers schemes with valuation dates between 22 September 2018 and 21 September 2019. https://www.thepensionsregulator.gov.uk/en/document-library/research-and-analysis/scheme-funding-analysis-2021/scheme-funding-analysis-2021-annexure
3 Some members have more than one record in the data.

02
The data

An overview of the dataset used in this edition of *The Purple Book*.

Summary

- This chapter contains information on the number and distribution of schemes in *The Purple Book 2021* dataset and the estimated universe of PPF-eligible schemes.
- The main analysis in *The Purple Book 2021* is based on the most recent scheme returns submitted to TPR by 31 March 2021. This covered a dataset of 5,215 DB schemes, covering 9.7 million members[4]. This represents virtually all PPF-eligible schemes and universe liabilities. At the time of writing, complete 2021 information for the remaining schemes was not yet available and so these have been excluded from the sample. A full description of the data used is set out in the appendix.
- It is estimated that the eligible universe of schemes was 5,220 as at 31 March 2021, a reduction from 5,327 as at 31 March 2020. The declining universe reflects schemes winding up, scheme mergers, and schemes entering PPF assessment.
- The fact that the dataset accounts for such a large proportion of the universe means that results for the whole universe would only be slightly different from those presented in *The Purple Book 2021*.
- As in previous editions of *The Purple Book*, the bulk of the analysis uses funding with pension scheme liability values measured on an s179 basis. This is, broadly speaking, what would have to be paid to an insurance company to take on the payment of PPF levels of compensation.

4 One individual can have multiple memberships (for example, of different pension schemes). Hence the number of members exceeds the number of individuals.

Figure 2.1 | Distribution of schemes excluding those in assessment by size of scheme membership as at 31 March 2021

The Purple Book 2021 sample covers almost all of the estimated PPF-eligible schemes, with 99.9 per cent of all PPF-eligible schemes included.

Number of members	2–99	100–999	1,000–4,999	5,000–9,999	10,000+	Total
Estimated 2021 universe (number of schemes)	1,874	2,280	720	160	186	5,220
The Purple Book 2021 dataset (number of schemes)	1,873	2,280	717	159	186	5,215
The Purple Book 2021 dataset as a % of 2021 PPF-eligible DB universe	99.9%	100.0%	99.6%	99.4%	100.0%	99.9%

Source: PPF

Figure 2.2 | Distribution of assets, s179 liabilities and members in *The Purple Book* 2021 dataset as at 31 March

Large schemes with more than 5,000 members make up seven per cent of schemes in *The Purple Book 2021* dataset but almost 75 per cent of each of total assets, liabilities and members.

Number of members	2–99	100–999	1,000–4,999	5,000–9,999	10,000+	Total
Assets (£bn)	16.9	152.2	280.8	211.2	1,059.6	1,720.7
s179 liabilities (£bn)	15.4	149.9	279.9	207.8	1,020.9	1,673.8
Number of members (000's)	82	798	1,631	1,110	6,118	9,739

Note: the components may not sum to the total because of rounding.

Source: PPF

Figure 2.3 | *The Purple Book* datasets

The universe has declined by two per cent over the year, similar to previous years. This reflects schemes winding up, scheme mergers, and schemes transferring into the PPF.

	Estimated universe	*The Purple Book* dataset	Number of members (m)
2006	7,751	5,772	14.0
2007	7,542	5,892	12.7
2008	7,400	6,898	12.4
2009	7,098	6,885	12.4
2010	6,850	6,596	12.0
2011	6,550	6,432	12.0
2012	6,460	6,316	11.7
2013	6,225	6,150	11.4
2014	6,070	6,057	11.1
2015	5,967	5,945	11.0
2016	5,886	5,794	10.9
2017	5,671	5,588	10.5
2018	5,524	5,450	10.4
2019	5,436	5,422	10.1
2020	5,327	5,318	9.9
2021	5,220	5,215	9.7

Note: the reason for the increase in *The Purple Book* dataset from 2006 to 2008 is mainly a result of improvements to the design of the scheme return intended to permit better PPF validation procedures.

Source: PPF

03
Scheme demographics

This chapter looks at trends in scheme status and member status.

Schemes can be open to new members, closed to new members but open to new benefit accrual, closed to new members and benefit accrual, or winding up.

Members may be actively accruing benefits, deferred, or retired.

Summary

This chapter describes the dataset used for this year's edition of *The Purple Book* and includes some comparisons with data from previous years. Figures for the total number of schemes and total scheme membership are included, with breakdowns by scheme size, scheme status, and member status.

How we categorise schemes has varied in previous editions of *The Purple Book* as more informative breakdowns became available. For more detailed information, see the appendix.

Some statistics from this chapter are summarised in the following table:

	Date of *The Purple Book*	
	31 March 2021	31 March 2020
Number of schemes in *The Purple Book* dataset	**5,215**	5,318
Proportion of schemes that are:		
open to new members	**11%**	11%
closed to new members (but open to new benefit accrual)	**39%**	41%
closed to new benefit accrual	**48%**	46%
winding up	**2%**	2%
Number of members covered by schemes in *The Purple Book* dataset, of which:	**9.7m**	9.9m
pensioner members	**43%**	43%
deferred members	**47%**	46%
active members (still accruing benefits)	**10%**	11%

- The number of active members has fallen to just under one million for the first time. This is just over a quarter of those found in the first *Purple Book* dataset in 2006.
- The gradual trend of schemes closing to both new members and new benefit accrual has continued and now stands at 48 per cent. This compares with 12 per cent in *The Purple Book* dataset in 2006.
- 72 per cent of schemes have assets of less than £100 million.

Scheme status

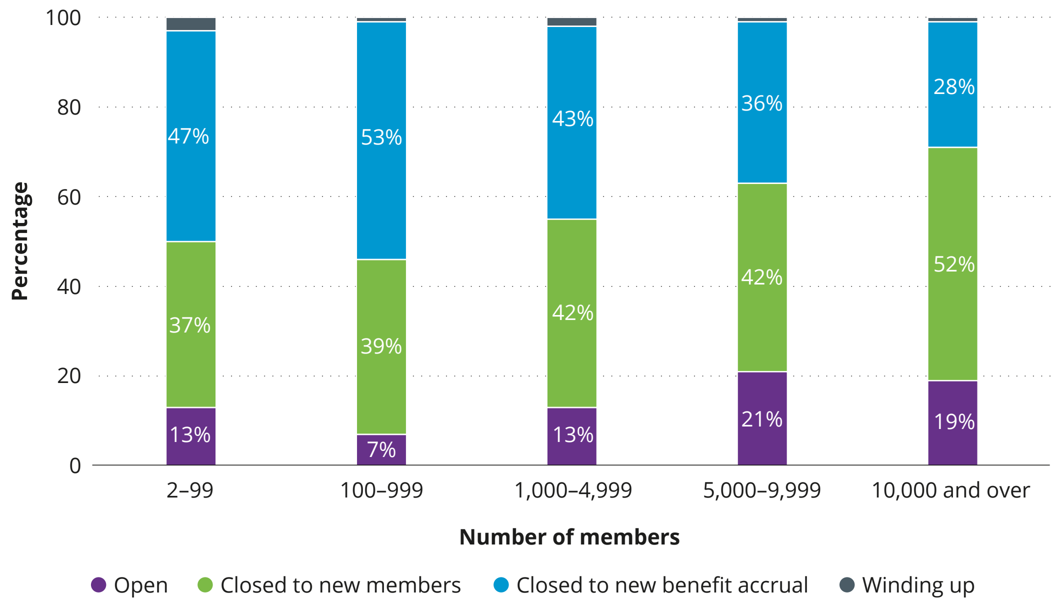
Figure 3.1 | Distribution of schemes by scheme status

39 per cent of schemes are closed to new members, and another 48 per cent are also closed to new benefit accrual.

Source: PPF

Figure 3.2 | Distribution of schemes by scheme status and member group

Large schemes are more likely to be open to new members or new benefit accrual.

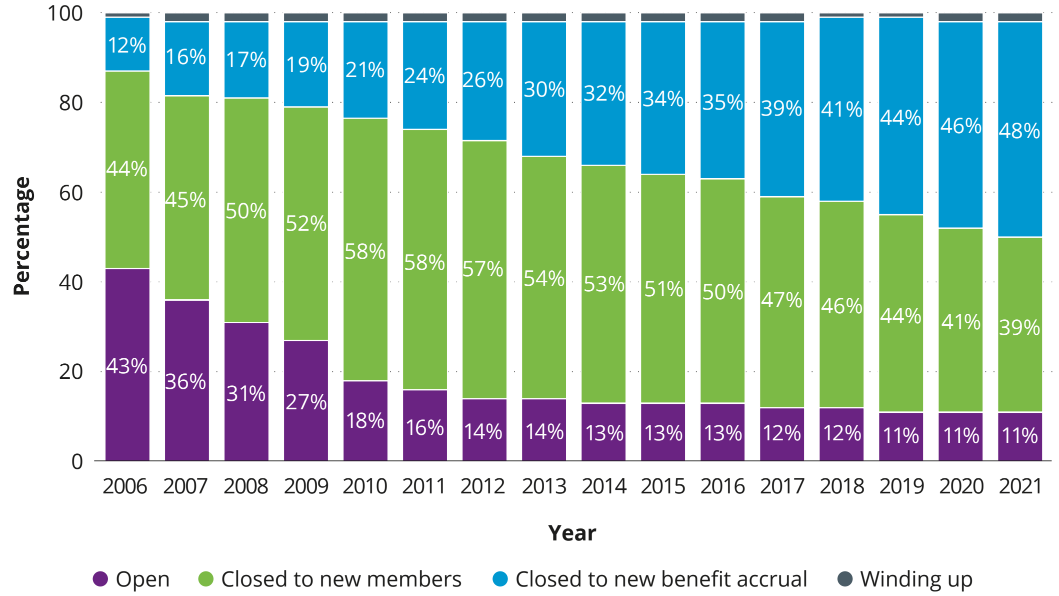


Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Figure 3.3 | Distribution of schemes by scheme status and year

The gradual trend of schemes already closed to new members also closing to accrual has continued, with this status now covering 48 per cent of schemes.

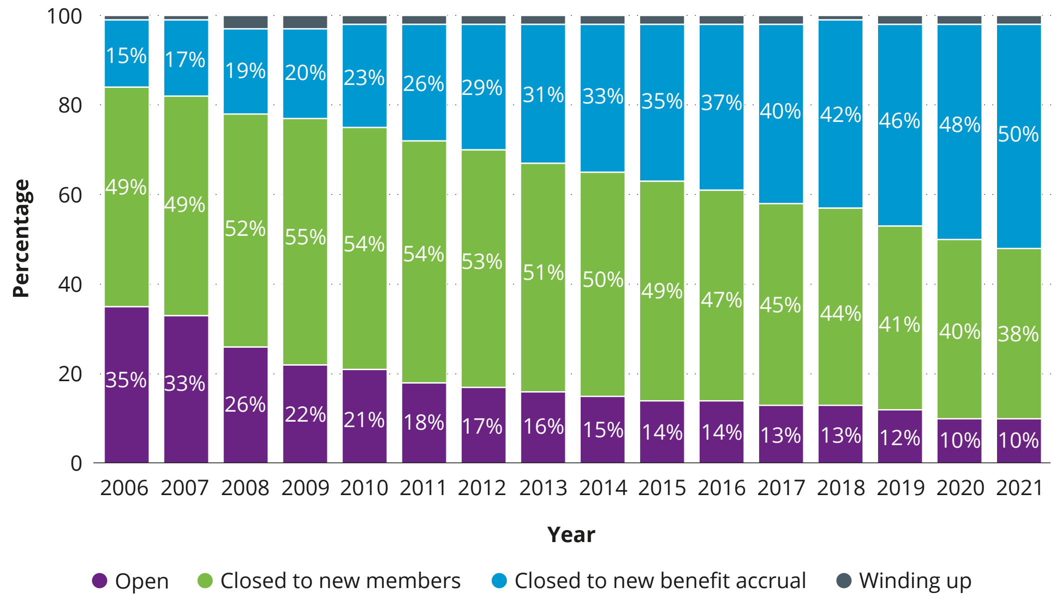


Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Figure 3.4 | Distribution of schemes by scheme status and year (excluding hybrid schemes[5])

The distribution of schemes by scheme status in *The Purple Book 2021* dataset is similar whether or not hybrid schemes are excluded.



Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Scheme status and scheme members

Figure 3.5 | Distribution of members by scheme status

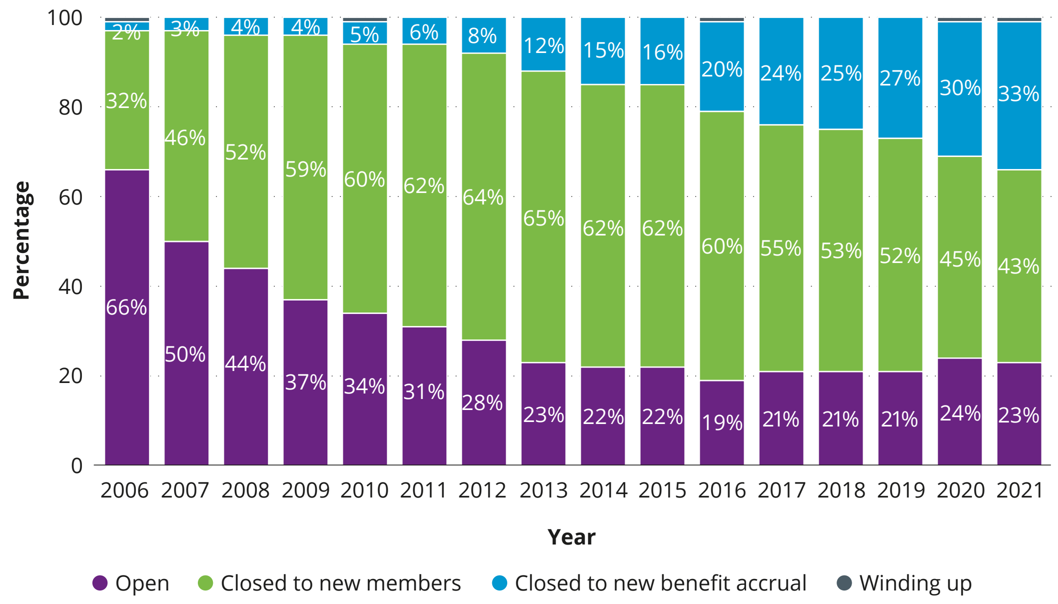
Around 65 per cent of members are in schemes that have some form of new benefit accrual.

Source: PPF

5 A hybrid scheme is one that provides DB and defined contribution (DC) benefits. The treatment of such schemes has varied in past editions of *The Purple Book* as better data has become available (see the appendix for a detailed explanation). At present we define a scheme as closed if the DB section is closed, even if the DC section remains open.

Figure 3.6 | Distribution of members by scheme status and year

The proportion of members in open schemes has stabilised in recent years following a significant decline between 2006 and 2013.

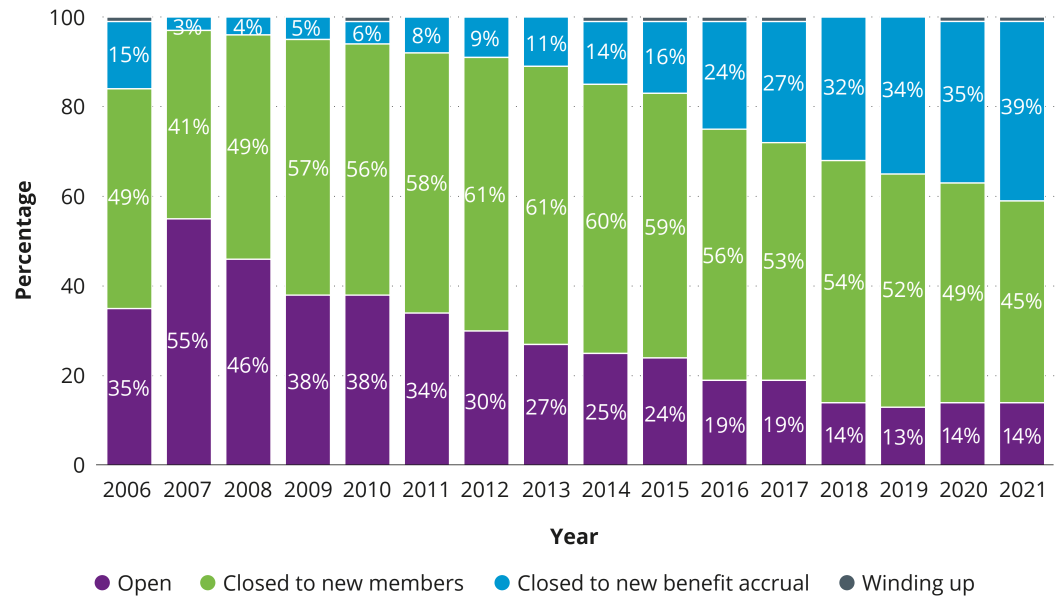


Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Figure 3.7 | Distribution of members by scheme status and year (excluding hybrid schemes)

Excluding hybrid schemes has an effect on the distribution of members by scheme status in *The Purple Book 2021* dataset. This is partly due to one very large open scheme having a hybrid status.



Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Scheme membership

Figure 3.8 | Number and distribution of members by member type and scheme status as at 31 March 2021

Although around 65 per cent of members are in schemes that are open to new benefit accrual, only 10 per cent of members are actually accruing benefits.

Number (000's)/%	Open	Closed to new members	Closed to new benefit accrual	Winding up	All
Active members	657.0	323.9	–	–	981.0
	7%	3%	0%	0%	10%
Deferred members	820.5	1,887.4	1,824.3	43.4	4,575.7
	8%	19%	19%	0%	47%
Pensioner members	730.8	2,014.4	1,400.7	36.6	4,182.6
	8%	21%	14%	0%	43%
Total	**2,208.4**	**4,225.8**	**3,225.0**	**80.1**	**9,739.3**
	23%	**43%**	**33%**	**1%**	**100%**

Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

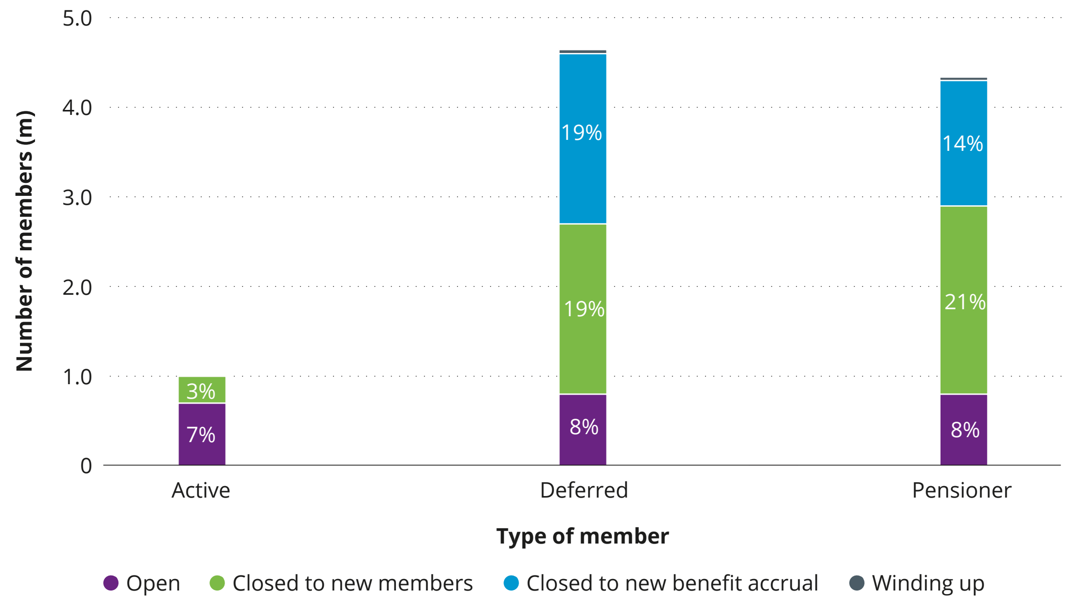
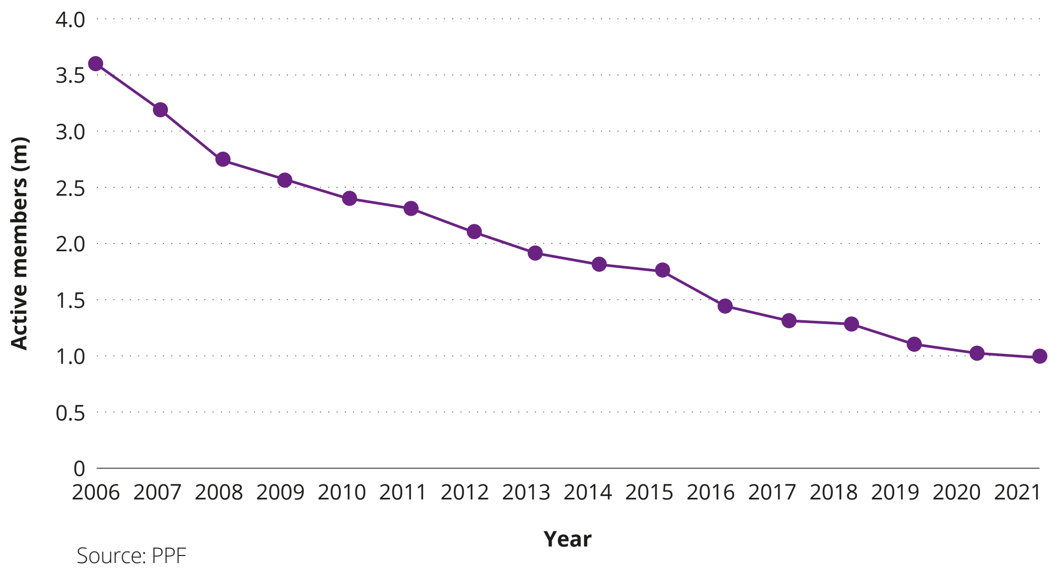


Figure 3.9 | Active members in *The Purple Book* datasets

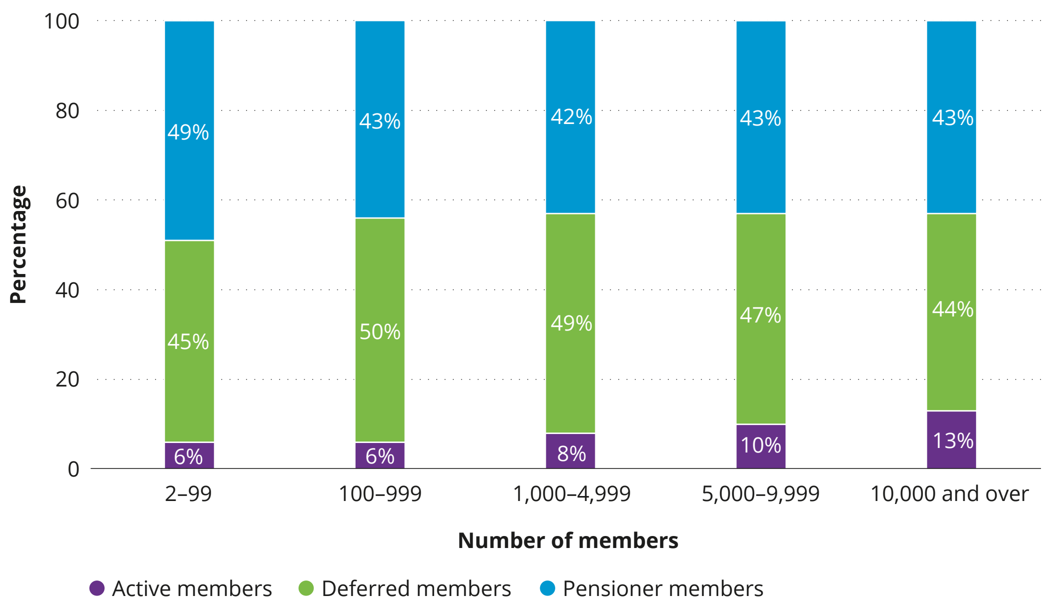
The number of active members has fallen to less than one million for the first time.



Source: PPF

Figure 3.10 | Distribution of member type, by scheme membership size

The proportion of active members increases as scheme membership size increases.

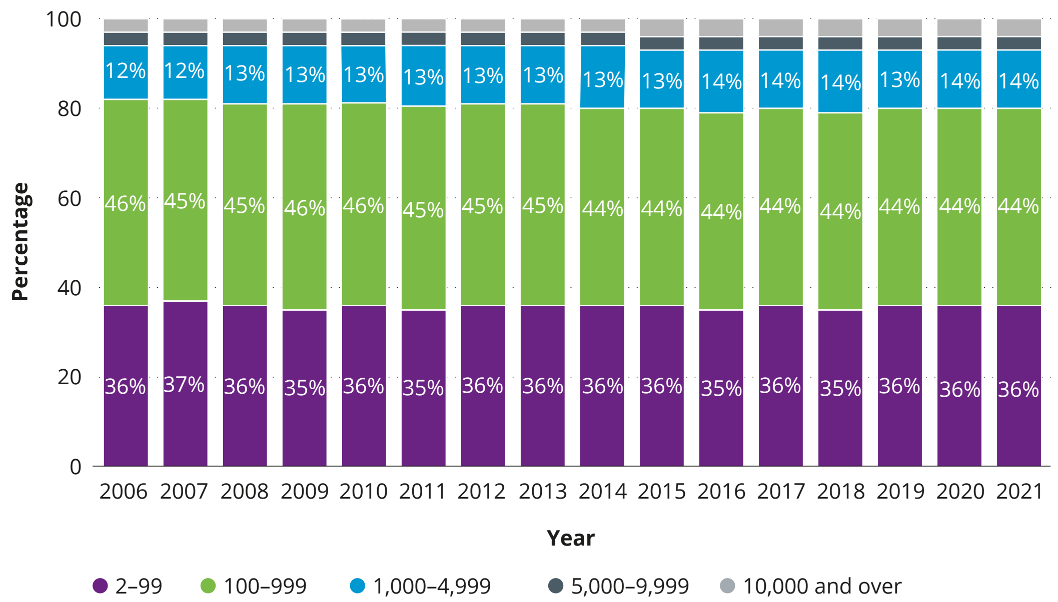


Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Figure 3.11 | Proportion of schemes by scheme membership size, by year

The distribution of schemes by scheme membership size has remained relatively stable over time, suggesting that there is little correlation between scheme size and removal from the eligible universe.



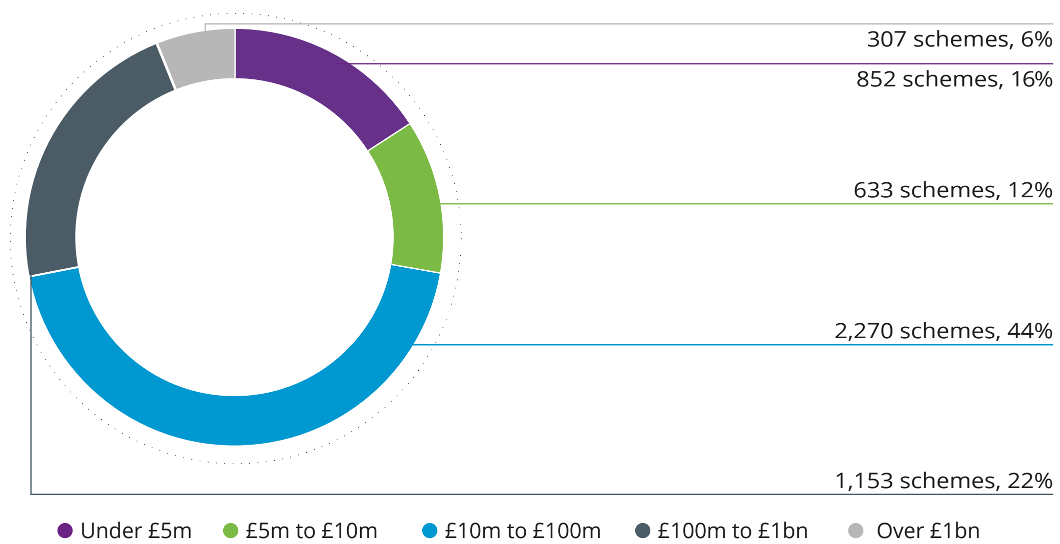
Note: the percentages may not sum to 100 per cent because of rounding.

Source: PPF

Asset size

Figure 3.12 | Distribution of schemes by asset size

72 per cent of schemes have assets of less than £100 million.

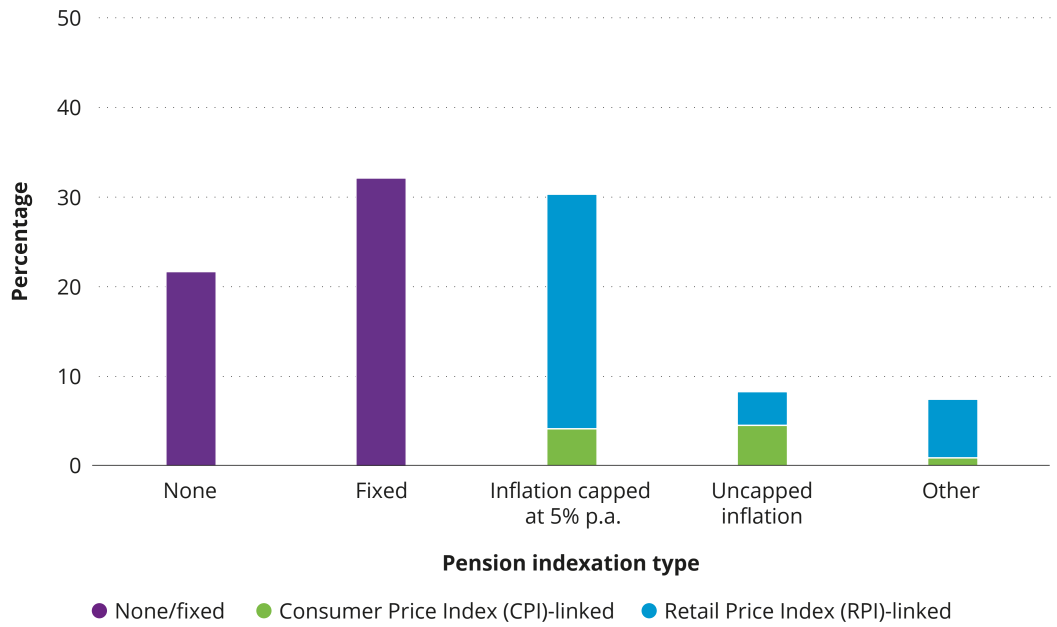


Source: PPF

Pension indexation types

Figure 3.13 | Pension indexation types for scheme benefits accrued before 6 April 1997

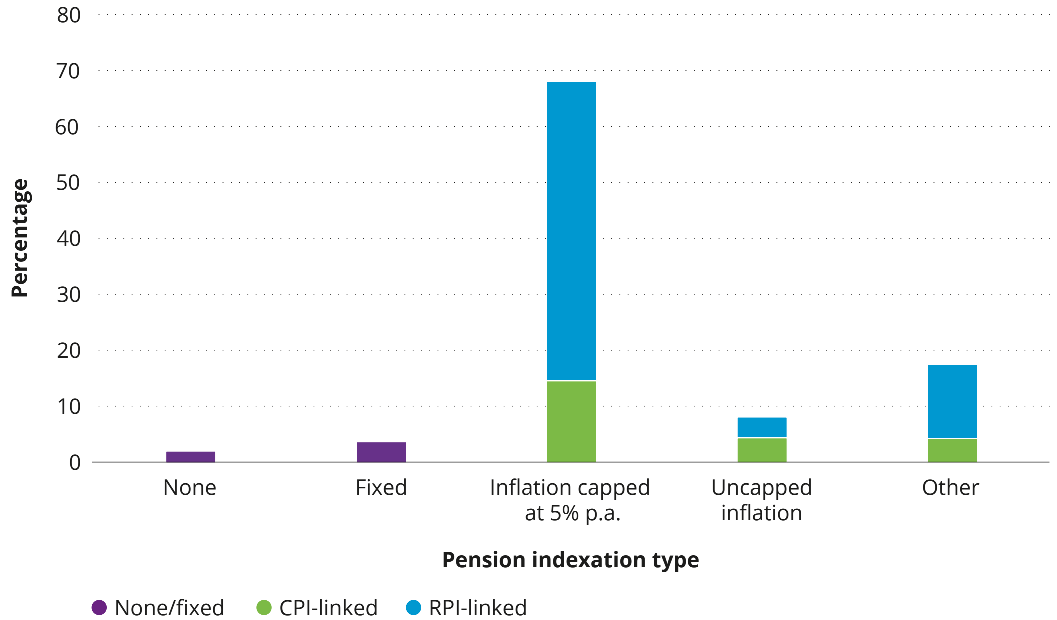
More than three quarters of schemes provide indexation on scheme benefits accrued before 6 April 1997.



Source: PPF

Figure 3.14 | Pension indexation types for scheme benefits accrued after 5 April 1997

Around two thirds of schemes provide indexation of inflation capped at five per cent a year on scheme benefits accrued after 5 April 1997.



Source: PPF

Note: this is based on scheme return data provided by schemes, where the scheme return specifies that in cases where there is more than one rate of indexation, the rate applying to the largest proportion of protected liabilities should be submitted.

Note: most of the schemes with no pension indexation don't have any scheme benefits that were accrued after 5 April 1997. The remaining instances may be errors in scheme return data submitted by schemes.

04
Scheme funding

This chapter looks at how well funded schemes are, and trends and scheme funding by scheme size, status and maturity.

Summary

This chapter covers funding on an s179 basis as at 31 March 2021, which is based on version A9 of the s179 assumptions[6]. Funding information supplied in scheme returns submitted to TPR is processed so that the funding ratios can be estimated at a common date, allowing consistent totals to be used. In *The Purple Book* Deficit-Reduction Contributions (DRCs), as submitted for levy purposes, have been added to the asset values submitted in s179 valuations.

A scheme that is 100 per cent funded on an s179 basis has broadly enough assets to pay an insurance company to take on the scheme with PPF levels of compensation.

In addition, this chapter considers estimated full buy-out funding information. This has been calculated using the same valuation assumptions and underlying data as for the s179 calculations. An approximate allowance is then made for the difference between the PPF level of compensation and full scheme benefits. Some of the statistics summarising these calculations are shown below:

	The Purple Book	
Item	**31 March 2021**	31 March 2020
Net s179 funding position (£bn)	**46.9 surplus**	90.7 deficit
s179 liabilities (£bn)	**1,673.8**	1,791.3
Assets (£bn)	**1,720.7**	1,700.6
Funding ratio:		
s179 basis	**102.8%**	94.9%
Estimated full buy-out basis	**73.7%**	71.8%

The following table sets out how some of the market indicators used to assess and roll forward pension scheme assets and s179 liabilities have changed over the year:

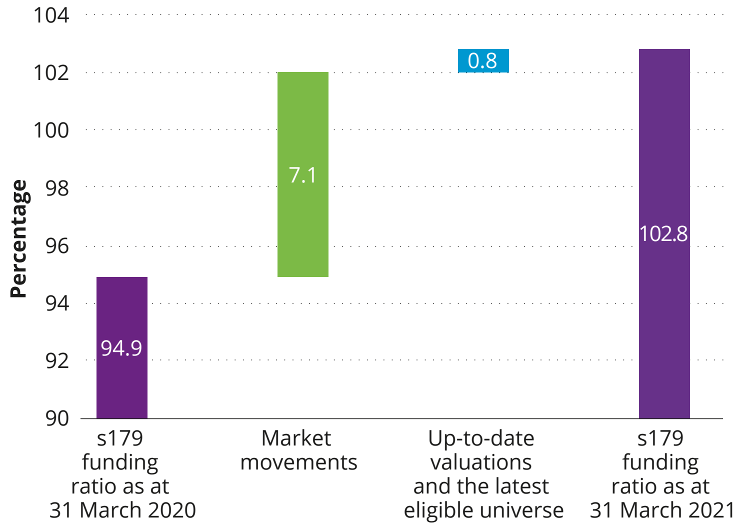
Market indicator	Change over the year to 31 March 2021
10-year fixed interest gilt yield	0.53pp
15-year fixed interest gilt yield	0.53pp
20-year fixed interest gilt yield	0.54pp
5–15-year index-linked gilt yield	-0.09pp
FTSE All-Share Index (TR)	26.71%
FTSE All-World Ex-UK Index (TR)	40.40%

pp = percentage point(s)
TR = Total Return

6 Version A9 of the s179 assumptions guidance is available on the PPF website at the link below. A new version of the s179 assumptions guidance became available after 31 March 2021, which is version A10 that is effective from 1 May 2021 onwards.

https://www.ppf.co.uk/sites/default/files/file-2018-11/s179_assumptions_guidance_-_a9.pdf

The change in the aggregate s179 funding ratio over the year is a result of market movements and new data, as shown in the following chart.



Source: PPF

- The 7.9 percentage point increase in the s179 funding ratio over the year to 31 March 2021 can be broken down as follows:
  - The impact of market movements has resulted in a 7.1 percentage point increase in the s179 funding ratio. This was due to large increases in equity values and gilt yields over the year, which caused total assets to increase while total liabilities decreased.
  - Additionally, an increase of 0.8 percentage points in the s179 funding ratio was observed from adopting the new *Purple Book 2021* dataset, which includes more up-to-date scheme valuations.
- The s179 funding ratio at 31 March 2021 is around six percentage points higher than that disclosed in the first *Purple Book* as at 31 March 2006. However, total assets and liability values have more than doubled over this period for the following reasons:
  - The significant increase in assets has arisen from increases in equity values (returns of around 115 per cent and 300 per cent on UK and global equities respectively), increases in bond values and DRCs, offset to some extent by schemes that have left the PPF universe.
  - The significant increase in liabilities has arisen from lower gilt yields and longer life expectancies driving up liability values, again offset to some extent by schemes that have left the PPF universe.
- Funding ratios are higher among:
  - More mature schemes (i.e. those with a higher proportion of liabilities that relate to pensioners), and
  - The smallest and largest schemes (compared to mid-size schemes).
- In the last 10 years, the proportion of liabilities that relates to pensioner members has remained relatively stable at around 40 per cent, whereas the proportion relating to active members has reduced by nine percentage points to 19 per cent.

Overall funding

Figure 4.1 | Key funding statistics as at 31 March 2021

The net s179 funding position of the schemes in *The Purple Book 2021* dataset at 31 March 2021 was a surplus of £46.9 billion, corresponding to a funding ratio of 102.8 per cent.

	s179	Estimated full buy-out
Total number of schemes	5,215	5,215
Total assets (£bn)	1,720.7	1,720.7
Total liabilities (£bn)	1,673.8	2,335.9
Net funding position (£bn)	46.9	-615.3
Aggregate funding ratio	102.8%	73.7%
Number of schemes in deficit	2,575	4,786
Number of schemes in surplus	2,640	429
Net funding position for schemes in deficit (£bn)	-128.5	-622.0
Net funding position for schemes in surplus (£bn)	175.3	6.8

Note: the component figures may not sum to the total because of rounding.

Source: PPF

Scheme funding continued

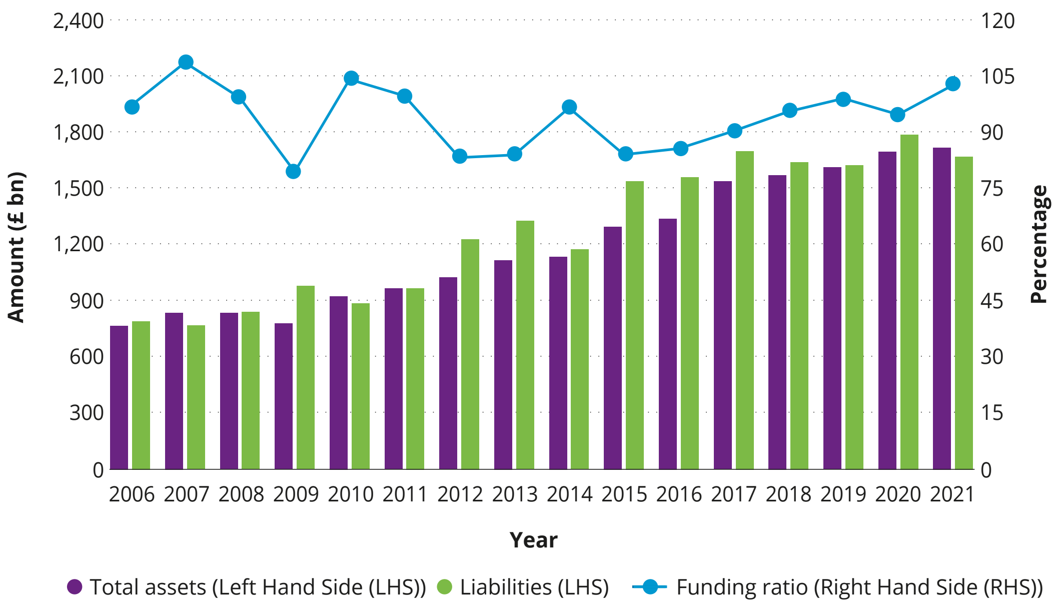
Figure 4.2 | Current and historical funding figures on an s179 basis

The aggregate s179 funding ratio improved by 7.9 percentage points over the year to 31 March 2021 and is higher than 100 per cent for the first time since 31 March 2010. The deficit of schemes in deficit improved from £229.1 billion to £128.5 billion over the year to 31 March 2021.

			s179 liabilities				
Year	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Deficit of schemes in deficit (£bn)	Surplus of schemes in surplus (£bn)
2006	7,751	769.5	792.2	-22.7	97.1%	-76.3	53.5
2007	7,542	837.7	769.9	67.8	108.8%	-38.5	106.2
2008	6,897	837.2	842.3	-5.1	99.4%	-67.7	62.6
2009	6,885	780.4	981.0	-200.6	79.6%	-216.7	16.0
2010	6,596	926.2	887.9	38.3	104.3%	-49.1	87.4
2011	6,432	968.5	969.7	-1.2	99.9%	-78.3	77.1
2012	6,316	1,026.8	1,231.0	-204.2	83.4%	-231.3	27.1
2013	6,150	1,118.5	1,329.2	-210.8	84.1%	-245.8	35.0
2014	6,057	1,137.5	1,176.8	-39.3	96.7%	-119.0	79.7
2015	5,945	1,298.3	1,542.5	-244.2	84.2%	-285.3	41.1
2016	5,794	1,341.4	1,563.1	-221.7	85.8%	-273.5	51.8
2017	5,588	1,541.1	1,702.9	-161.8	90.5%	-246.7	84.9
2018	5,450	1,573.3	1,643.8	-70.5	95.7%	-187.6	117.1
2019	5,422	1,615.3	1,628.0	-12.7	99.2%	-159.8	147.1
2020	5,318	1,700.6	1,791.3	-90.7	94.9%	-229.1	138.4
2021	5,215	1,720.7	1,673.8	46.9	102.8%	-128.5	175.3

Note: the component figures may not sum to the total because of rounding.

The aggregate s179 funding ratio at 31 March 2021 is around six percentage points higher than at 31 March 2006. In that time, liability values have increased by around £900 billion and assets have increased by a similar amount.



Source: PPF

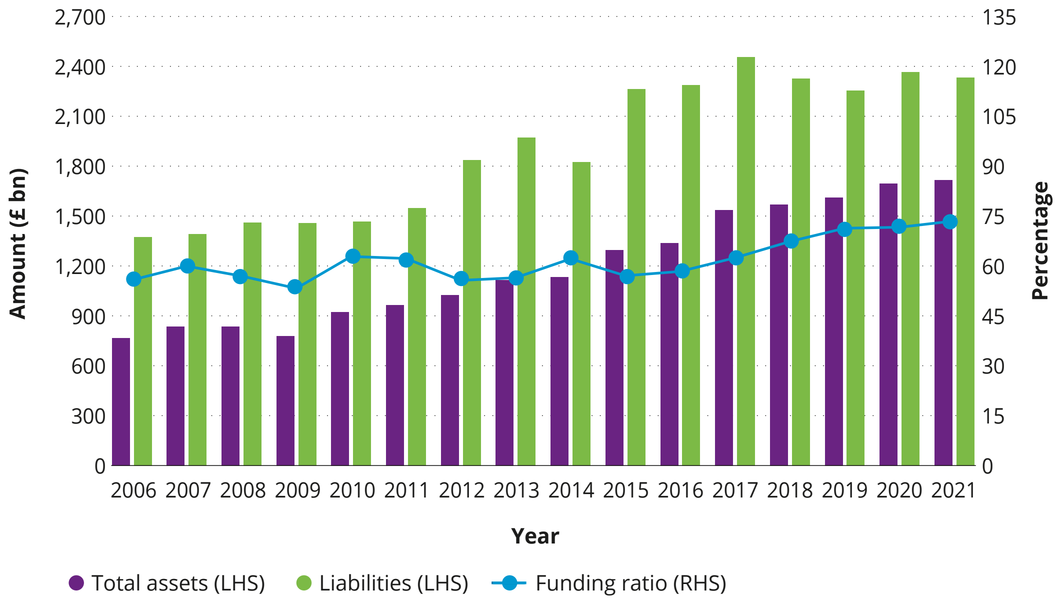
Figure 4.3 | Current and historical funding figures on an estimated full buy-out basis

The aggregate full buy-out funding ratio increased from 71.8 per cent to 73.7 per cent over the year to 31 March 2021, which is smaller than the increase in the aggregate s179 funding ratio. This is because of an increase in inflation expectations over the year, which is more significant for buy-out liabilities than for s179 liabilities.

		Estimated full buy-out		
Year	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio
2006	769.5	1,376.7	-607.2	55.9%
2007	837.7	1,393.7	-556.0	60.1%
2008	837.2	1,465.8	-628.6	57.1%
2009	780.4	1,461.1	-680.7	53.4%
2010	926.2	1,469.3	-543.1	63.0%
2011	968.5	1,551.8	-583.3	62.4%
2012	1,026.8	1,840.5	-813.7	55.8%
2013	1,118.5	1,974.7	-856.2	56.6%
2014	1,137.5	1,827.2	-689.7	62.3%
2015	1,298.3	2,269.2	-970.9	57.2%
2016	1,341.4	2,293.1	-951.7	58.5%
2017	1,541.1	2,461.7	-920.6	62.6%
2018	1,573.3	2,332.0	-758.7	67.5%
2019	1,615.3	2,260.3	-644.9	71.5%
2020	1,700.6	2,369.1	-668.5	71.8%
2021	1,720.7	2,335.9	-615.3	73.7%

Note: the component figures may not sum to the total because of rounding.

Since 2006, there has been a significant increase in the aggregate full buy-out funding ratio, from 55.9 per cent to 73.7 per cent at 31 March 2021.



The s179 funding ratio has fluctuated over time, from 97.1 per cent at 31 March 2006 to 102.8 per cent at 31 March 2021. Over the same period, the estimated full buy-out funding ratio has increased significantly, from 55.9 per cent to 73.7 per cent.

Source: PPF

Analysis of funding by scheme membership size

Figure 4.4 | s179 funding ratios by size of scheme membership as at 31 March 2021

The best funded schemes were the smallest, with an aggregate s179 funding ratio of 109.7 per cent for schemes with fewer than 100 members.

Scheme size (members)	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
2 to 99	1,873	16.9	15.4	1.5	109.7%	106.7%
100 to 999	2,280	152.2	149.9	2.3	101.5%	99.0%
1,000 to 4,999	717	280.8	279.9	0.9	100.3%	98.8%
5,000 to 9,999	159	211.2	207.8	3.4	101.6%	100.9%
10,000 and over	186	1,059.6	1,020.9	38.8	103.8%	106.0%
Total	**5,215**	**1,720.7**	**1,673.8**	**46.9**	**102.8%**	**102.1%**

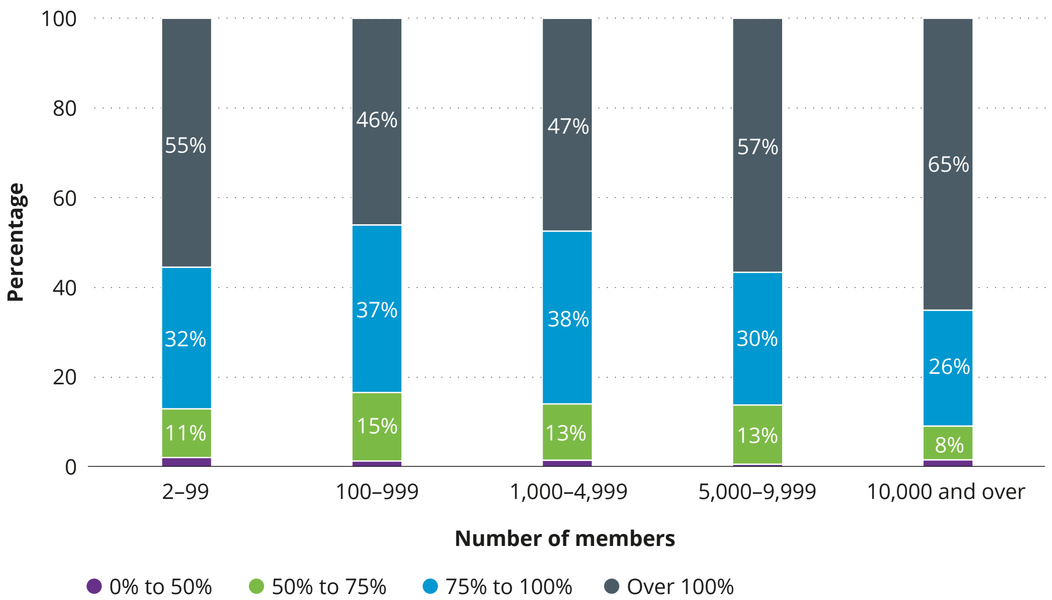
Note: the component figures may not sum to the total because of rounding.

* Whereas aggregate funding ratios are determined by comparing the total assets and liabilities for all schemes, the simple average funding ratio is the average of all of the schemes' individual funding ratios. Note that 10 schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. All of these schemes were small, with total assets of £0.1 billion.

Source: PPF

Figure 4.5 | Distribution of s179 funding ratios by size of scheme membership as at 31 March 2021

Schemes with at least 5,000 members are the most well funded on an s179 basis.



Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

Figure 4.6 | Estimated full buy-out levels by size of scheme membership as at 31 March 2021

In aggregate the best funded schemes on a full buy-out measure were the smallest and largest schemes.

Members (number)	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
2 to 99	1,873	16.9	21.5	-4.7	78.4%	77.9%
100 to 999	2,280	152.2	209.5	-57.3	72.6%	71.7%
1,000 to 4,999	717	280.8	385.0	-104.1	72.9%	72.6%
5,000 to 9,999	159	211.2	286.6	-75.5	73.7%	72.4%
10,000 and over	186	1,059.6	1,433.3	-373.7	73.9%	75.0%
Total	**5,215**	**1,720.7**	**2,335.9**	**-615.3**	**73.7%**	**74.2%**

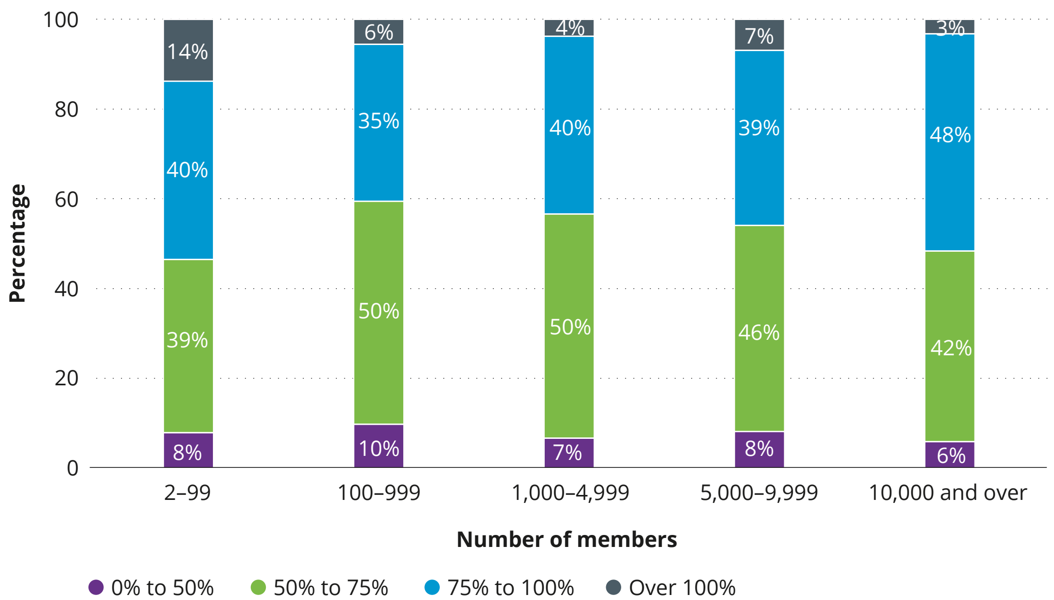
Note: the components may not sum to the totals because of rounding. Also the ratios of the components may not equal the aggregate ratios because of rounding.

* 10 schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. All of these schemes were small, with total assets of £0.1 billion.

Source: PPF

Figure 4.7 | Distribution of estimated full buy-out funding ratios by size of scheme membership as at 31 March 2021

The majority of schemes had buy-out funding ratios between 50 and 100 per cent.



Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

Analysis of funding by scheme maturity

Maturity is measured here as the percentage of the scheme liabilities relating to pensioners.

Figure 4.8 | Analysis of s179 funding ratios by scheme maturity as at 31 March 2021

The most mature schemes have an aggregate s179 funding ratio that is around 50 percentage points higher than the least mature schemes.

Proportion of s179 liabilities relating to pensioners	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
25% and less	1,102	199.8	234.6	-34.7	85.2%	88.4%
Between 25% and 50%	2,557	980.1	978.0	2.1	100.2%	98.5%
Between 50% and 75%	1,277	496.3	428.1	68.3	116.0%	114.7%
Between 75% and 100%	279	44.4	33.2	11.2	133.8%	131.7%
Total	**5,215**	**1,720.7**	**1,673.8**	**46.9**	**102.8%**	**102.1%**

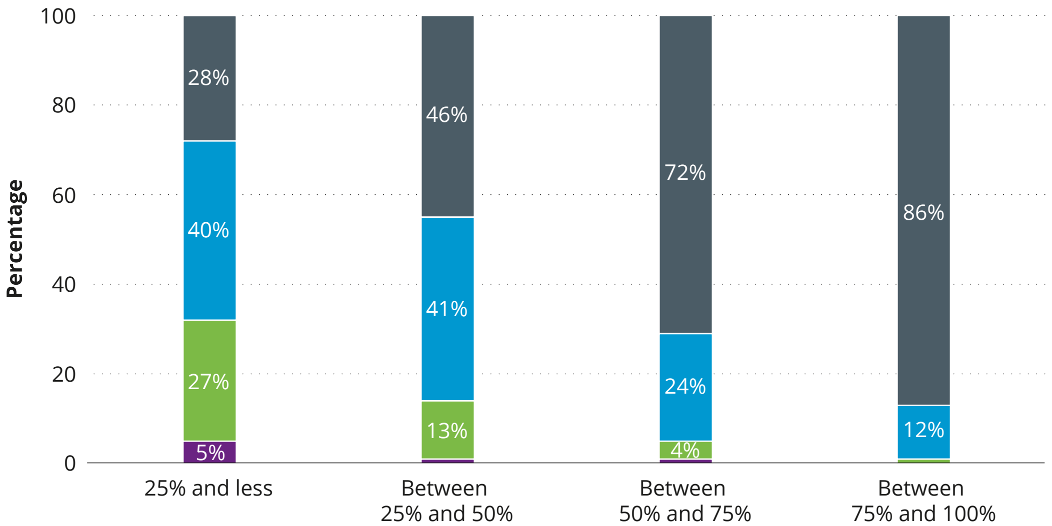
Note: the components may not sum to the totals because of rounding. Also the ratios of the components may not equal the aggregate ratios because of rounding.

* 10 schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. All of these schemes were small, with total assets of £0.1 billion.

Source: PPF

Figure 4.9 | Distribution of funding ratios on an s179 basis by scheme maturity as at 31 March 2021

Funding ratios improve with scheme maturity, with 86 per cent of the most mature schemes being overfunded on an s179 basis.



Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

Figure 4.10 | Analysis of s179 funding ratios by scheme status as at 31 March 2021

Open schemes are around 15 percentage points worse funded than closed schemes, as measured by the aggregate s179 funding ratio.

Status	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
Open	560	341.8	380.8	-39.0	89.7%	95.5%
Closed to new members	2,037	892.0	826.5	65.5	107.9%	103.7%
Closed to future accrual	2,524	472.8	454.1	18.8	104.1%	101.8%
Winding up	94	14.0	12.4	1.6	112.9%	112.1%
Total	**5,215**	**1,720.7**	**1,673.8**	**46.9**	**102.8%**	**102.1%**

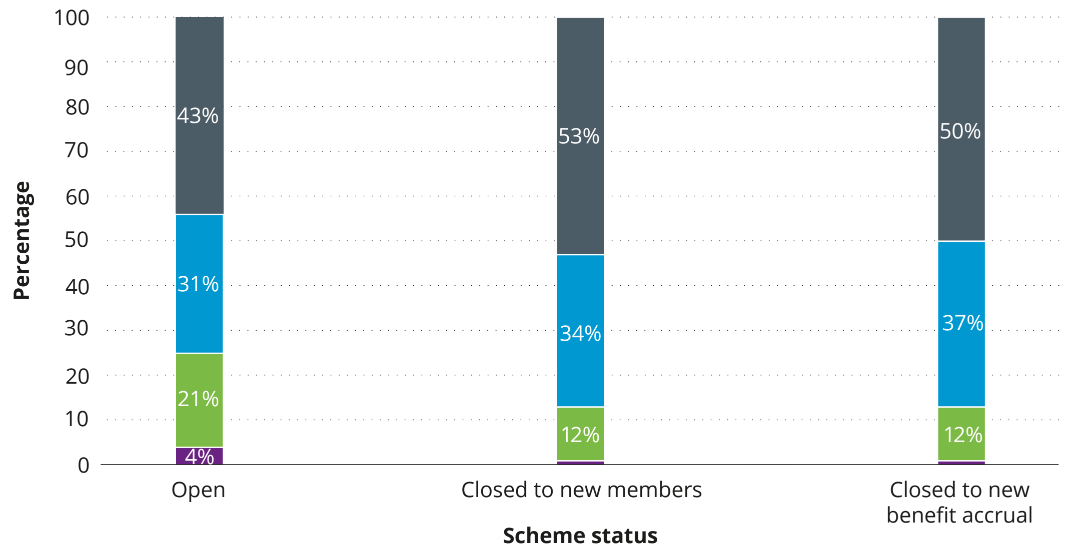
Note: the components may not sum to the totals because of rounding. Also the ratios of the components may not equal the aggregate ratios because of rounding.

* 10 schemes with funding ratios more than 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. All of these schemes were small, with total assets of £0.1 billion.

Source: PPF

Figure 4.11 | Distribution of schemes by s179 funding ratios within scheme status groups as at 31 March 2021

More than half of all open schemes have an s179 funding ratio below 100 per cent.



Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

Figure 4.12 | Analysis of estimated full buy-out funding ratios by scheme status as at 31 March 2021

Open schemes are around 10 percentage points worse funded than closed schemes, as measured by the aggregate buy-out funding ratio.

Status	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
Open	560	341.8	512.8	-171.1	66.6%	71.7%
Closed to new members	2,037	892.0	1,176.7	-284.7	75.8%	75.2%
Closed to future accrual	2,524	472.8	628.7	-155.8	75.2%	73.7%
Winding-up	94	14.0	17.7	-3.7	79.3%	83.3%
Total	**5,215**	**1,720.7**	**2,335.9**	**-615.3**	**73.7%**	**74.2%**

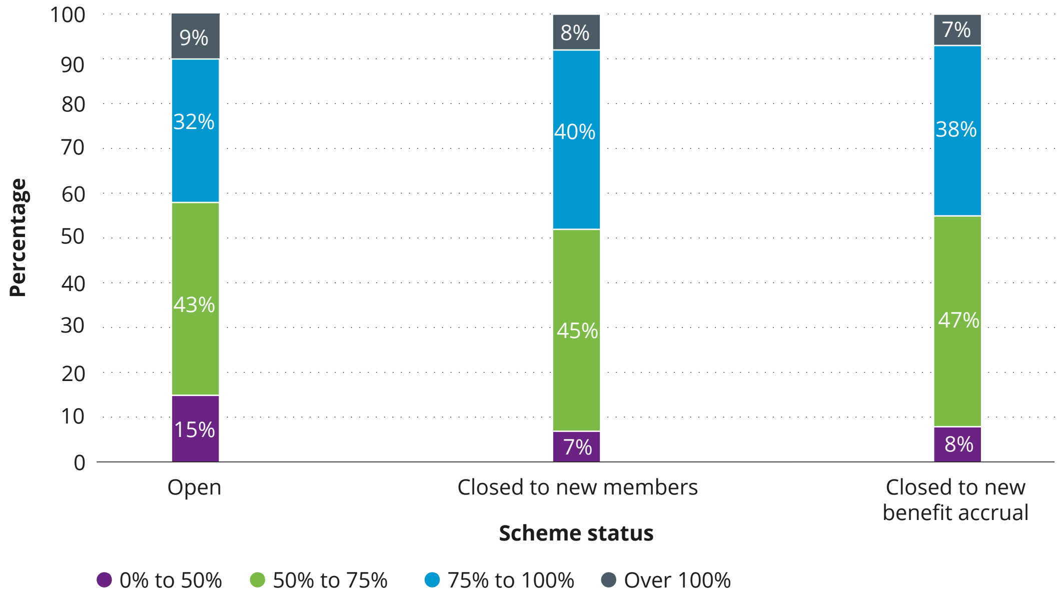
Note: the components may not sum to the totals because of rounding. Also the ratios of the components may not equal the aggregate ratios because of rounding.

* 10 schemes with funding ratios over 200 per cent (on a full buy-out measure) were excluded from the simple averages to avoid distortions. All of these schemes were small, with total assets of £0.1 billion.

Source: PPF

Figure 4.13 | Distribution of schemes by estimated full buy-out funding ratios within scheme status groups as at 31 March 2021

Around 60 per cent of open schemes have an estimated full buy-out funding ratio of less than 75 per cent.

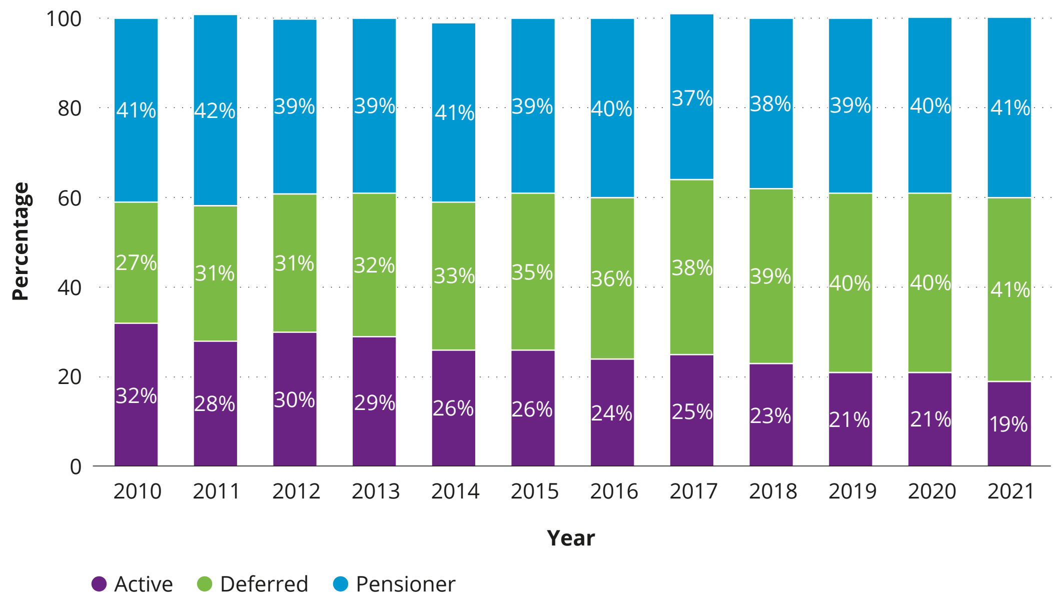


Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

Figure 4.14 | s179 liabilities by member status in current and historical *Purple Book* datasets

The proportion of liabilities that relates to actives has reduced by nine percentage points over the last 10 years.



Note: the percentages in each column may not sum to 100 per cent because of rounding.

Source: PPF

05
Funding sensitivities

This chapter looks at factors affecting scheme funding levels, including changes in equity prices, gilt yields and life expectancy.

Summary

- This chapter shows how the funding of DB schemes and markets has changed since 2006, and how the funding of DB schemes at 31 March 2021 would change as a result of plausible changes in markets and longevity.

The following sections cover:

- The historical changes in s179 scheme funding since 2006. The series in this section take the estimated funding position at 31 March in previous years' editions of *The Purple Book*.
- Various funding sensitivities. All of these are on an s179 basis, taking the funding position as at 31 March 2021[7] as the base and using *The Purple Book 2021* dataset.

Change in s179 funding position over time

- Both the historical net funding position and funding ratio had been broadly trending downwards between March 2006 and August 2016. This trend has subsequently reversed and both measures are now higher than the levels they were at on 31 March 2006.
- The proportion of schemes in deficit on an s179 basis reached an all-time low of 49 per cent in March 2021.

Funding sensitivities as at 31 March 2021

- A 0.1 percentage point (10 basis point) rise in both nominal and real gilt yields increases the 31 March 2021 net funding position by £15.3 billion from £46.9 billion to £62.2 billion. A 2.5 per cent rise in equity prices would improve the net funding position by £9.7 billion.
- A 0.1 percentage point (10 basis point) reduction in both nominal and real gilt yields raises aggregate scheme liabilities by 1.9 per cent and raises aggregate scheme assets by 0.9 per cent. A 2.5 per cent increase in equity markets increases scheme assets by 0.6 per cent.
- If individuals live two years longer than expected, s179 liabilities would increase by £131.9 billion, or 7.9 per cent.

7 Using the valuation guidance as in Chapter 4. For more information, see the PPF website.

Historical changes in s179 scheme funding since 2006

The estimated funding position of the universe of schemes can change over time owing to a number of factors including financial markets, actuarial assumptions, the decline in the number of DB schemes, and sponsoring employers' special contributions. The historical series in this section take the estimated funding position at 31 March from previous editions of *The Purple Book*. The monthly profiles between end-March of one year and end-February of the next are obtained by rolling forward the assets and liabilities using movements in nominal and real gilt yields and equity markets.

Figure 5.1 | Historical s179 aggregate funding ratio and net funding position of pension schemes in *The Purple Book* datasets

The aggregate s179 funding ratio and net funding position have been gradually increasing since their low points in 2016.

Source: PPF

Figure 5.2 | Historical movements in assets and s179 liabilities of schemes in *The Purple Book* datasets

There has been a general upward trend in both assets and liabilities since 2006.

Source: PPF

Figure 5.3 | Historical aggregate funding position for schemes in deficit and surplus

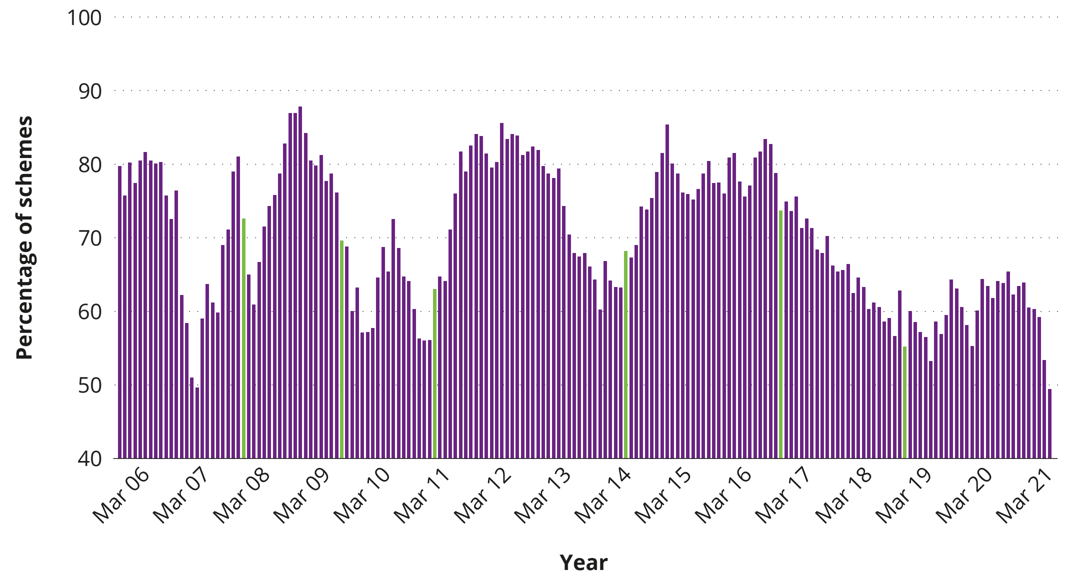
The deficit of schemes in deficit was at its largest in August 2016 at £451 billion. At 31 March 2021 this deficit was at £129 billion, down £100 billion from the £229 billion experienced at 31 March 2020.

The funding position of schemes in surplus has been more stable over time than the funding position of schemes in deficit.

Source: PPF

Figure 5.4 | Historical percentage of schemes in deficit each month in *The Purple Book* datasets

In March 2021, the percentage of schemes in deficit reached an all-time low of 49 per cent.



The green lines indicate months in which changes were made to the assumptions used to value schemes on an s179 measure. The changes to assumptions in March 2008 and October 2009 reduced the number of schemes in deficit by 412 and 566 respectively, while the changes to assumptions in April 2011 and May 2014 raised the number of schemes in deficit by 107 and 259 respectively. The changes to assumptions in November 2016 and November 2018 reduced the number of schemes in deficit by 157 and 437 respectively.

Source: PPF

Funding sensitivities continued

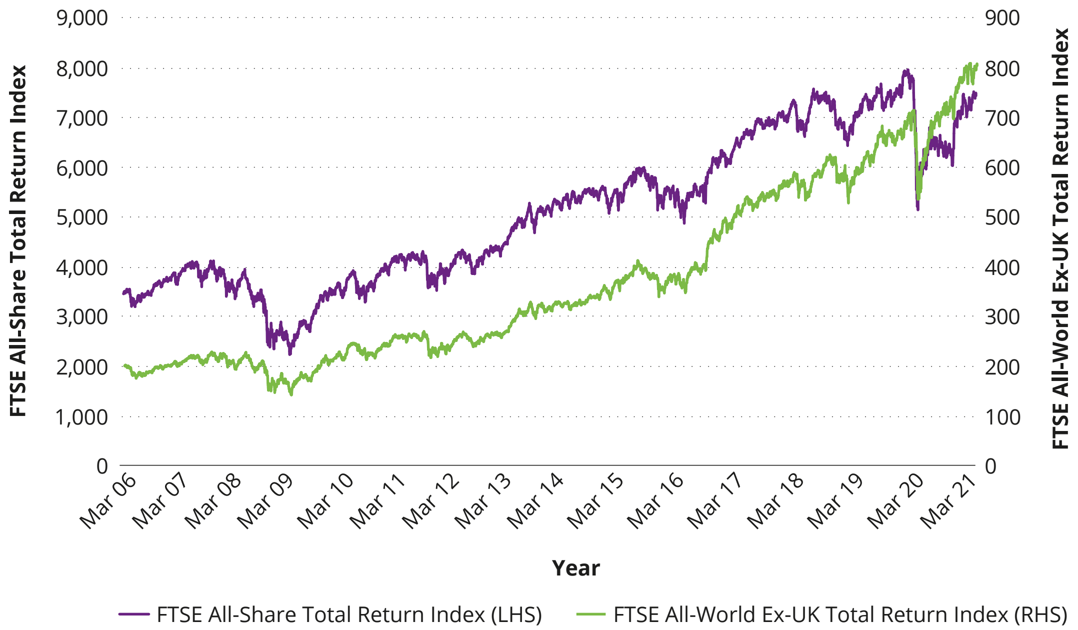
Figure 5.5 | Movements in gilt yields

Gilt yields have increased since their all-time lows in March 2020.

Source: Bloomberg

Figure 5.6 | Movements in equity indices

The FTSE All-Share and All-World Ex-UK Total Return Indices have recovered from their sharp declines in March 2020.



Source: Bloomberg

Funding sensitivities: rules of thumb

Funding ratios are sensitive to movements in financial markets, with equity and gilt prices in particular having a major impact upon scheme assets, and gilt yields affecting liability values. This section shows the effect on scheme funding positions of changes in equity and gilt markets. The impact of a 7.5 per cent rise in equity prices and a 0.3 percentage point increase in gilt yields have been accurately calculated and then the rest of the results have been calculated by pro-rating these two impacts.

The sensitivities do not take into account the use of derivative instruments to hedge changes in interest rates, inflation, equity levels or life expectancy.

Figure 5.7 | Impact of changes in gilt yields and equity prices on s179 funding positions from a base net funding position of £46.9 billion as at 31 March 2021

Small changes in gilt yields have a more substantial impact on s179 funding positions than small changes in equity prices.

Assets less s179 liabilities (£bn)							
	Movement in gilt yields						
Movement in equity prices	-0.3pp	-0.2pp	-0.1pp	0.0pp	0.1pp	0.2pp	0.3pp
7.5%	31.1	45.9	60.8	76.0	91.3	106.8	122.5
5.0%	21.4	36.1	51.1	66.3	81.6	97.1	112.8
2.5%	11.6	26.4	41.4	56.6	71.9	87.4	103.1
0.0%	1.9	16.7	31.7	**46.9**	62.2	77.7	93.4
-2.5%	-7.8	7.0	22.0	37.1	52.5	68.0	83.6
-5.0%	-17.5	-2.7	12.3	27.4	42.8	58.3	73.9
-7.5%	-27.2	-12.4	2.6	17.7	33.0	48.5	64.2

Source: PPF

A 0.1 percentage point rise in both nominal and real gilt yields would have improved the end-March 2020 s179 net funding position by £15.3 billion from £46.9 billion (bold) to £62.2 billion (shaded). That's more than the £9.7 billion impact of a 2.5 per cent increase in equity prices (shaded).

Figure 5.8 | Impact of changes in gilt yields and equity prices on assets from a base of 100 as at 31 March 2021

Small changes in gilt yields have a slightly larger impact on assets than small changes in equity prices.

Assets relative to a base of 100							
	Movement in gilt yields						
Movement in equity prices	-0.3pp	-0.2pp	-0.1pp	0.0pp	0.1pp	0.2pp	0.3pp
7.5%	104.5	103.6	102.6	101.7	100.8	99.9	99.0
5.0%	103.9	103.0	102.1	101.1	100.2	99.3	98.4
2.5%	103.4	102.4	101.5	100.6	99.7	98.7	97.9
0.0%	102.8	101.9	100.9	**100.0**	99.1	98.2	97.3
-2.5%	102.2	101.3	100.4	99.4	98.5	97.6	96.7
-5.0%	101.7	100.7	99.8	98.9	98.0	97.1	96.2
-7.5%	101.1	100.2	99.2	98.3	97.4	96.5	95.6

Source: PPF

A 2.5 per cent increase in equity prices would raise scheme assets by 0.6 per cent (shaded). A 0.3 percentage point decrease in gilt yields would increase scheme assets by 2.8 per cent (shaded).

Funding sensitivities continued

Figure 5.9 | Impact of changes in gilt yields on s179 liabilities as at 31 March 2021

A 0.1 percentage point movement in gilt yields would impact s179 liabilities by 1.9 per cent.

Impact on s179 liabilities						
	Movement in both nominal and real gilt yields					
	-0.3pp	-0.2pp	-0.1pp	0.1pp	0.2pp	0.3pp
Percentage change	5.6%	3.7%	1.9%	-1.9%	-3.7%	-5.6%

Source: PPF

Figure 5.10 | Impact of changes in nominal or real gilt yields on s179 liabilities as at 31 March 2021 (base = £1,673.8 billion)

As at 31 March 2021, the s179 liabilities were almost three times as sensitive to changes in nominal yields as to changes in real yields.

Impact on s179 liabilities				
	Change in nominal yields		Change in real yields	
	-0.1pp	0.1pp	-0.1pp	0.1pp
£bn	1,697.5	1,650.1	1,682.2	1,665.5
Percentage change	1.4%	-1.4%	0.5%	-0.5%

Note: s179 liabilities are assessed using a combination of various nominal and real gilt yields. Whereas figure 5.9 shows the impact of universal stresses across both nominal and real yields, figure 5.10 stresses the nominal and real gilt yields separately.

Source: PPF

Figure 5.11 | Impact of changes in life expectancy assumptions on s179 liabilities as at 31 March 2021 (base = £1,673.8 billion)

If individuals live two years longer than expected, s179 liabilities would increase by £131.9 billion, or 7.9 per cent. Conversely, if individuals live two years shorter than expected, s179 liabilities would decrease by £128.7 billion, or 7.7 per cent.

	s179 liabilities (£ bn)	% change from base
Age rating +2 years	1,545.1	-7.7%
Age rating -2 years	1,805.7	7.9%

Note: the impact of increased length of life has been approximated by age rating down by two years – that is, replacing the life expectancy assumptions for each individual by an individual currently two years younger.

Source: PPF

06
Insolvency risk

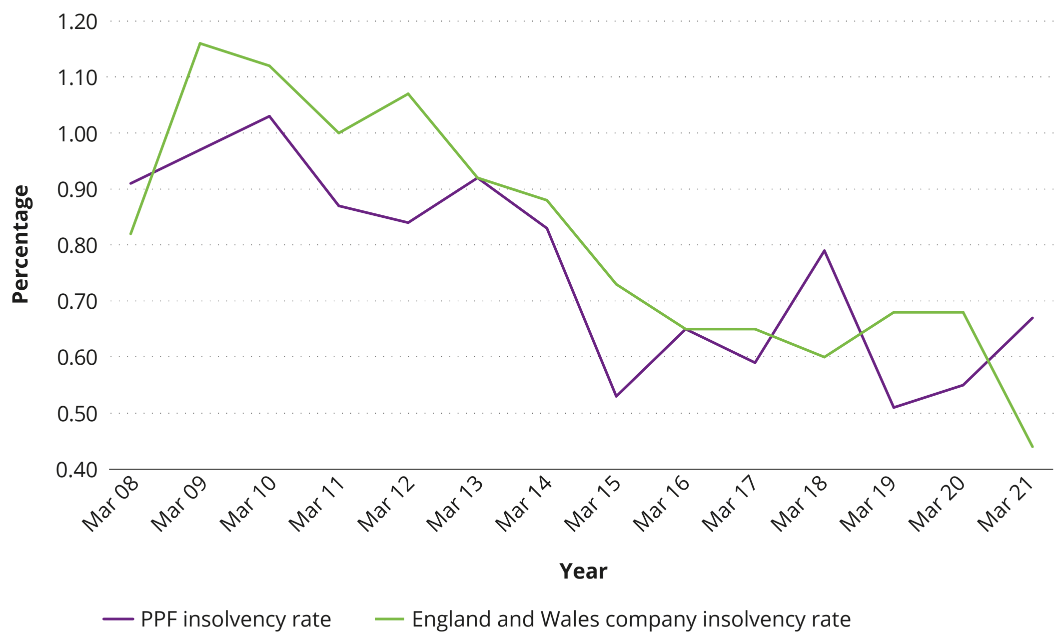
This chapter looks at the rate of insolvencies in DB scheme sponsors, compared to the overall company insolvency rate in England and Wales, and insolvencies by scheme size.

Summary

- This chapter shows the annual insolvency rate for employers in the PPF universe and companies in England and Wales. It also shows the number of England and Wales company insolvencies compared with the rate of UK real GDP growth. Finally, it shows a proxy for insolvency risk over the next year, for different scheme sizes.
- The average insolvency rate in the PPF universe has increased by 0.12 percentage points to 0.67 per cent at 31 March 2021.
- Conversely, the average annual insolvency rate of companies in England and Wales decreased by 0.24 percentage points to 0.44 per cent at 31 March 2021. This was caused by a decrease of around 34 per cent in the number of annual England and Wales company insolvencies.
- UK real GDP growth was -6.1 per cent in Q1 2021, down from -2.2 per cent in Q1 2020.
- In aggregate, larger schemes tend to have a lower insolvency risk than those with fewer members.

Figure 6.1 | Annual insolvency rates*

Despite the challenges brought on by COVID-19, the insolvency rate in England and Wales fell to its lowest point since 31 March 2008, falling from 0.68 per cent at 31 March 2020 to 0.44 per cent at 31 March 2021. However, the rate of insolvencies for the PPF universe did increase marginally over the year.

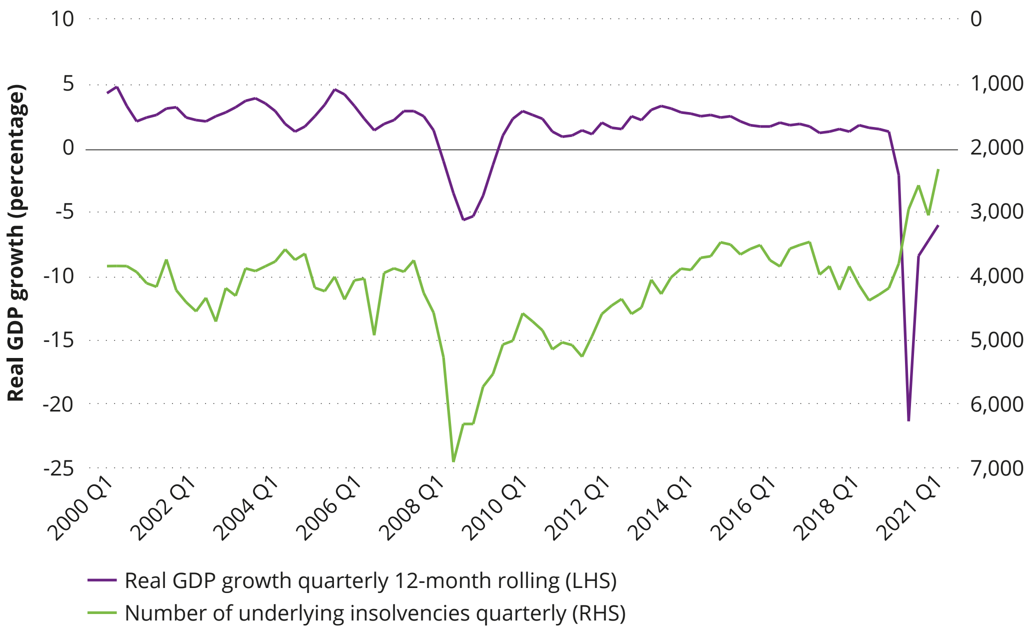


* The England and Wales company insolvency rate has been calculated based on the 2.5 million companies in England and Wales that are VAT/PAYE registered with HMRC. Insolvencies in England and Wales account for around 95 per cent of UK insolvencies. In comparison, there are around 14,000 companies in the PPF universe, or around 12,500 if companies that participate in multiple schemes are only counted once.

Source: PPF, Office for National Statistics (ONS)

Figure 6.2 | England and Wales underlying company insolvencies (seasonally adjusted)

The number of insolvencies in England and Wales decreased by around 34 per cent in the year to 31 March 2021 compared with the year to 31 March 2020. UK real GDP growth fell by 3.9 percentage points over the same period.



Note: as the ONS and UK Insolvency Service revise their methodology and receive new data, the figures for previous time periods may be updated.

Source: ONS and the UK Insolvency Service

Figure 6.3 | Average levy rates of sponsoring companies by scheme membership size*

Insolvency probabilities were similar between 31 March 2020 and 31 March 2021 in spite of the challenges brought on by COVID-19, with decreases observed for schemes with fewer than 5,000 members.

* Schemes' risk-based levy rates, as used in calculating the PPF levy, have been used as a proxy for the insolvency probabilities.

Source: PPF

07
Asset allocation

This chapter looks at trends in the types of assets DB schemes invest in.

Summary

- This chapter contains information on how DB schemes have invested scheme assets since 2006 and how asset allocations in *The Purple Book 2021* dataset vary according to different scheme characteristics, such as scheme size.
- Around 98 per cent of schemes' asset allocations in *The Purple Book 2020* dataset were at a date in 2019 or 2020.
- The aggregate proportion of schemes' assets invested in equities fell from 20.4 per cent to 19.0 per cent while the proportion in bonds rose from 69.2 per cent to 72.0 per cent.
- Within bonds, the proportions held were broadly unchanged from last year with index-linked bonds making up the biggest proportion at 47.2 per cent. Corporate bonds accounted for 28.2 per cent of the bonds held and government fixed interest bonds contributed 24.6 per cent of the total.
- Smaller schemes tend to have higher proportions in government and corporate fixed interest bonds than in index-linked bonds.
- Within equities, the UK-quoted proportion fell from 13.3 per cent to 11.6 per cent. Similarly the proportions of overseas-quoted equities decreased slightly from 69.0 per cent to 68.3 per cent, while unquoted/private equities increased from 17.7 per cent to 20.1 per cent.
- Smaller schemes tend to hold higher proportions in UK equities with smaller proportions in both overseas and unquoted/private equities.
- The best funded schemes tend to have the greatest proportion of their assets invested in bonds and a smaller proportion invested in equities.
- As scheme maturity increases, the proportion of assets invested in equities falls.

Asset data[8]

Figure 7.1 | Distribution of schemes by asset allocation date*

Around 98 per cent of schemes provided an asset allocation with an effective date in 2019 or 2020.

Asset allocation year	Number of schemes	Percentage of *The Purple Book 2021* dataset
2006–2012	1	0.0%
2013	0	0.0%
2014	0	0.0%
2015	3	0.1%
2016	2	0.0%
2017	14	0.3%
2018	46	0.9%
2019	1,765	33.8%
2020	3,370	64.6%
2021	14	0.3%
Total	**5,215**	**100%**

* There can be a significant gap between the date of the scheme return and the date at which the asset allocation was taken. This means that the date at which asset allocation data is provided differs from scheme to scheme.

Source: PPF

8 Asset allocations submitted by schemes are not adjusted for market movements. Most of this chapter uses weighted average asset allocations. For example, the weighted average share of equities is the total amount of equities across all schemes divided by the total amount of assets across all schemes. The simple average takes the arithmetic average of each scheme's proportion of its assets held in equities.

Asset allocation continued

Figure 7.2 | Weighted average asset allocation in total assets

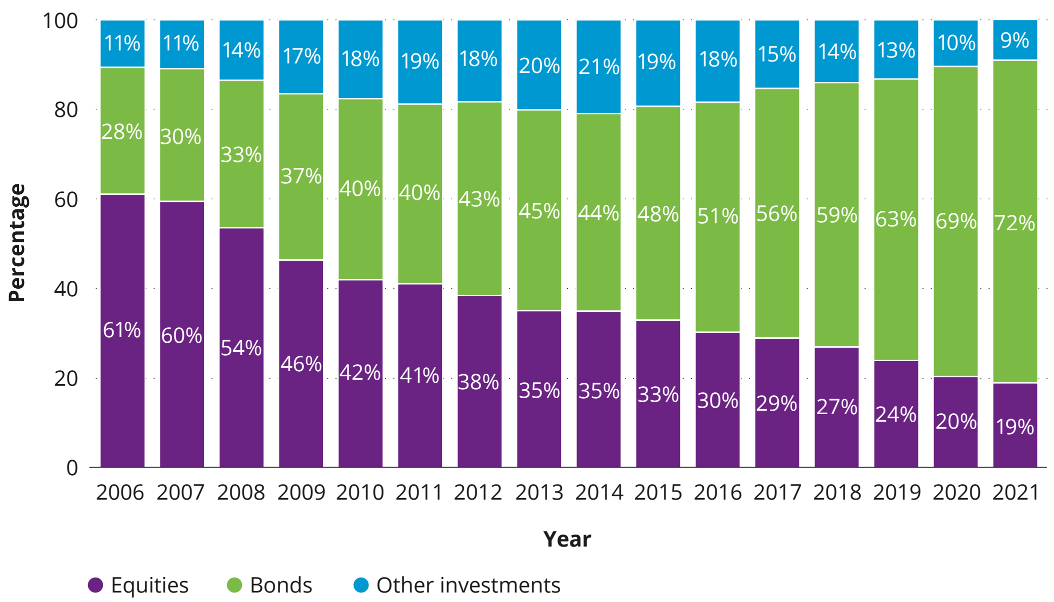
In *The Purple Book 2021* dataset, the proportion invested in bonds rose while the proportion in equities fell.

Year/*The Purple Book* dataset	Asset class								
				Breakdown of other investments					
	Equities	Bonds	Other investments	Property	Cash and deposits	Insurance policies	Hedge funds*	Annuities*	Misc
2006	61.1%	28.3%	10.6%	4.3%	2.3%	0.9%	n/a	n/a	3.1%
2007	59.5%	29.6%	10.9%	5.2%	2.3%	0.8%	n/a	n/a	2.5%
2008	53.6%	32.9%	13.5%	5.6%	3.0%	1.1%	n/a	n/a	3.8%
2009	46.4%	37.1%	16.5%	5.2%	3.9%	1.4%	1.5%	n/a	4.5%
2010	42.0%	40.4%	17.6%	4.6%	3.9%	1.4%	2.2%	n/a	5.4%
2011	41.1%	40.1%	18.8%	4.4%	4.1%	1.6%	2.4%	n/a	6.3%
2012	38.5%	43.2%	18.3%	4.9%	5.1%	0.2%	4.5%	n/a	3.6%
2013	35.1%	44.8%	20.1%	4.7%	6.7%	0.1%	5.2%	n/a	3.5%
2014	35.0%	44.1%	20.9%	4.6%	6.1%	0.1%	5.8%	n/a	4.3%
2015	33.0%	47.7%	19.3%	4.9%	3.5%	0.1%	6.1%	n/a	4.7%
2016	30.3%	51.3%	18.4%	4.8%	3.0%	0.1%	6.6%	2.1%	1.7%
2017	29.0%	55.7%	15.3%	5.3%	-0.9%	0.1%	6.7%	3.3%	0.8%
2018	27.0%	59.0%	14.0%	4.8%	-2.5%	0.1%	7.0%	3.4%	1.2%
2019	24.0%	62.8%	13.2%	5.0%	-4.4%	0.3%	7.4%	4.0%	1.0%
2020	20.4%	69.2%	10.4%	4.9%	-7.2%	0.1%	6.8%	5.0%	0.8%
2021	19.0%	72.0%	9.1%	4.7%	-9.5%	0.1%	6.1%	6.6%	0.9%

The weighted average proportion of assets held in cash and deposits being negative represents a number of large schemes with significant negative cash holdings which are likely to be related to investments such as swaps and repurchase agreements.

* n/a denotes not available, where schemes may have been invested in these asset classes but the percentages cannot be determined from the data held.

Note: figures may not sum to 100 per cent or the 'Other investments' total due to rounding.



Source: PPF

Figure 7.3 | Asset allocation: simple averages

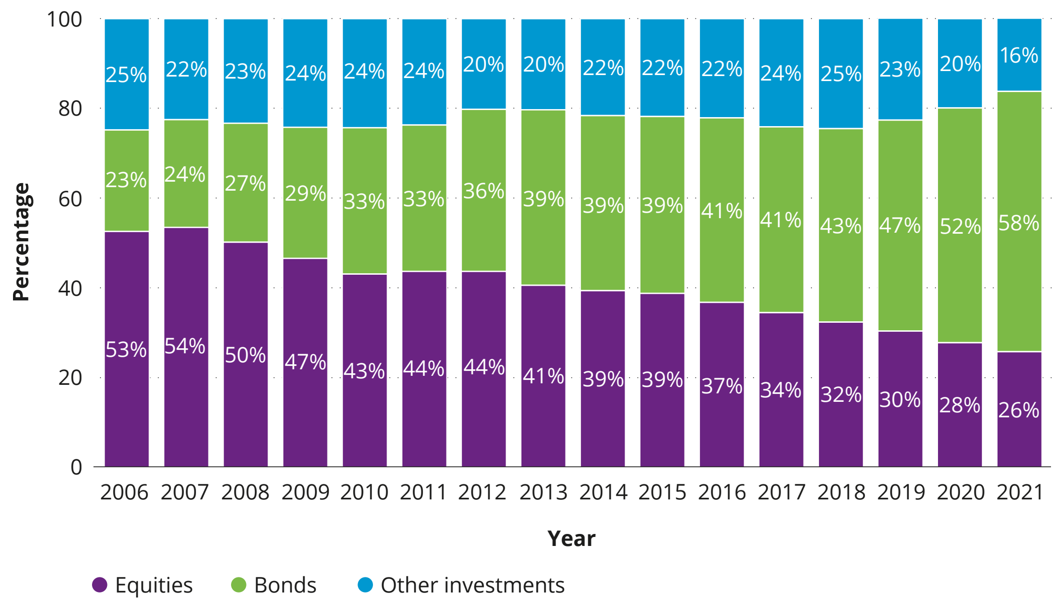
A comparison of simple and weighted averages in 2021 shows there is a greater weighted allocation to bonds and smaller allocations to equities and other investments. This reflects the fact that the larger schemes hold a greater proportion of bonds than smaller schemes.

Year/*The Purple Book* dataset	Asset class								
				Breakdown of other investments					
	Equities	Bonds	Other investments	Property	Cash and deposits	Insurance policies	Hedge funds*	Annuities*	Misc
2006	52.6%	22.6%	24.8%	2.1%	3.9%	14.9%	n/a	n/a	3.6%
2007	53.5%	24.0%	22.5%	2.5%	3.7%	13.7%	n/a	n/a	2.6%
2008	50.2%	26.5%	23.3%	2.9%	4.4%	13.0%	n/a	n/a	2.9%
2009	46.6%	29.2%	24.2%	2.8%	5.6%	12.4%	0.7%	n/a	2.6%
2010	43.1%	32.6%	24.3%	2.6%	5.7%	12.3%	0.9%	n/a	2.8%
2011	43.7%	32.6%	23.7%	2.7%	4.9%	11.8%	1.0%	n/a	3.3%
2012	43.7%	36.1%	20.2%	3.5%	5.5%	4.4%	3.7%	n/a	3.2%
2013	40.6%	39.1%	20.3%	3.6%	6.2%	2.0%	5.0%	n/a	3.5%
2014	39.4%	39.0%	21.6%	3.5%	6.4%	1.8%	6.2%	n/a	3.9%
2015	38.8%	39.4%	21.8%	3.6%	5.7%	1.7%	7.3%	n/a	3.7%
2016	36.8%	41.1%	22.1%	3.7%	5.4%	1.2%	7.9%	2.4%	1.5%
2017	34.5%	41.4%	24.1%	3.7%	3.6%	0.7%	7.9%	6.8%	1.3%
2018	32.4%	43.1%	24.5%	3.3%	1.8%	0.6%	8.5%	8.9%	1.4%
2019	30.4%	47.0%	22.7%	3.4%	-0.8%	0.5%	8.9%	9.4%	1.3%
2020	27.8%	52.3%	19.9%	3.4%	-3.2%	0.6%	7.9%	9.7%	1.7%
2021	25.8%	58.0%	16.3%	3.2%	-6.6%	0.6%	6.9%	10.6%	1.7%

The simple average proportion of assets held in cash and deposits being negative represents schemes with negative cash holdings which are likely to be related to investments such as swaps and repurchase agreements.

* n/a denotes not available, where schemes may have been invested in these asset classes but the percentages cannot be determined from the data held.

Note: figures may not sum to 100 per cent or the 'Other investments' total due to rounding.



Note: figures may not sum to 100 per cent or the 'Other investments' total due to rounding.

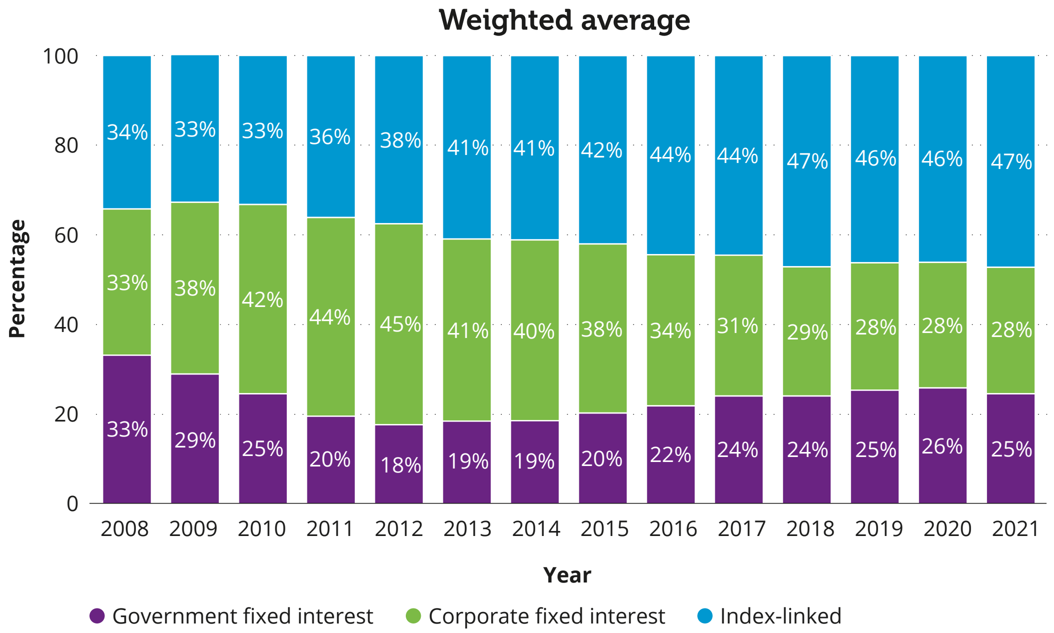
Source: PPF

Figure 7.4 | Bond splits

The proportion of bonds in each class has remained broadly unchanged in recent years.

Year/*The Purple Book* dataset	Bonds					
	Weighted average			Simple average		
	Government fixed interest	Corporate fixed interest	Index-linked	Government fixed interest	Corporate fixed interest	Index-linked
2008	33.2%	32.6%	33.9%	47.2%	33.0%	19.8%
2009	29.0%	38.3%	32.6%	45.6%	37.3%	17.1%
2010	24.6%	42.2%	33.1%	37.3%	43.0%	19.8%
2011	19.6%	44.3%	36.1%	31.2%	47.1%	21.7%
2012	17.7%	44.8%	37.5%	28.2%	49.4%	22.4%
2013	18.5%	40.6%	40.9%	27.0%	49.6%	23.4%
2014	18.6%	40.3%	41.1%	23.8%	51.9%	24.4%
2015	20.3%	37.7%	42.0%	23.8%	51.2%	25.0%
2016	21.9%	33.7%	44.4%	24.4%	49.0%	26.6%
2017	24.1%	31.4%	44.5%	25.9%	46.8%	27.3%
2018	24.1%	28.8%	47.1%	27.2%	42.1%	30.8%
2019	25.4%	28.4%	46.2%	29.0%	38.9%	32.1%
2020	25.9%	28.0%	46.1%	29.4%	36.1%	34.6%
2021	24.6%	28.2%	47.2%	30.4%	34.8%	34.8%

Note: the rows may not sum to 100 per cent due to rounding.



Note: figures may not sum to 100 per cent due to rounding.

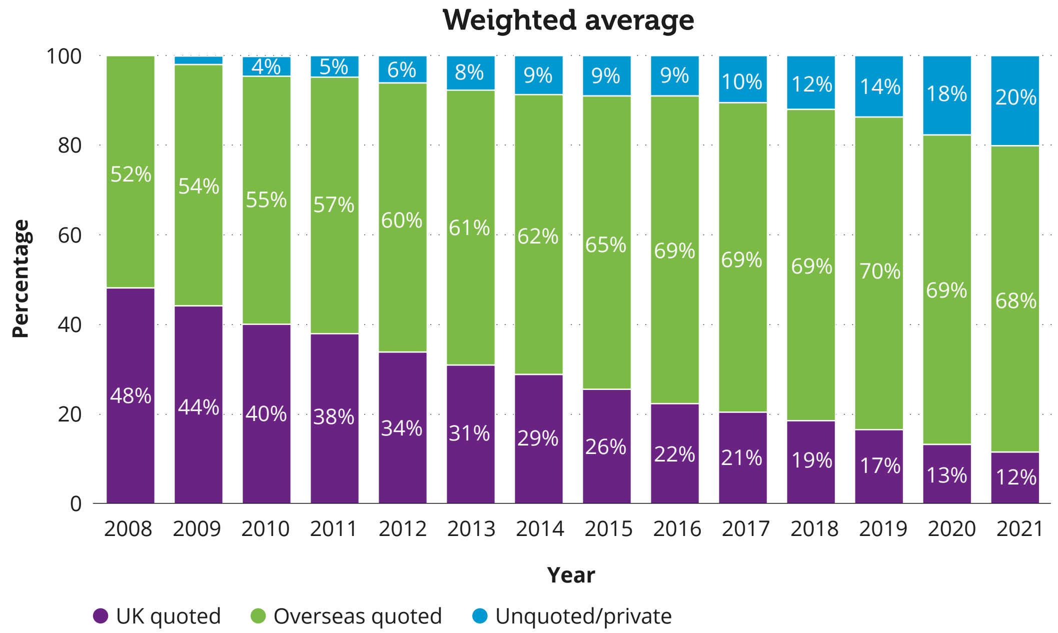
Source: PPF

Figure 7.5 | Equity splits

Within equities, the proportion invested in private equities continued to rise, while the proportion invested in UK equities continued to fall.

Year/*The Purple Book* dataset	Equities					
	Weighted average			Simple average		
	UK quoted	Overseas quoted	Unquoted/ Private	UK quoted	Overseas quoted	Unquoted/ Private
2008	48.2%	51.8%	n/a	60.4%	39.6%	n/a
2009	44.2%	53.8%	1.9%	57.6%	41.7%	0.7%
2010	40.1%	55.3%	4.4%	55.3%	43.7%	1.0%
2011	38.0%	57.2%	4.8%	52.7%	46.1%	1.2%
2012	33.9%	60.0%	6.1%	49.9%	48.5%	1.7%
2013	31.0%	61.3%	7.7%	47.5%	50.3%	2.2%
2014	28.9%	62.4%	8.7%	44.9%	52.7%	2.4%
2015	25.6%	65.4%	9.0%	42.2%	55.3%	2.5%
2016	22.4%	68.6%	9.0%	38.8%	58.6%	2.6%
2017	20.5%	69.0%	10.5%	36.3%	61.0%	2.7%
2018	18.6%	69.4%	12.0%	32.1%	65.0%	3.0%
2019	16.6%	69.7%	13.7%	29.6%	66.7%	3.7%
2020	13.3%	69.0%	17.7%	26.9%	68.4%	4.8%
2021	11.6%	68.3%	20.1%	24.9%	69.4%	5.8%

Note: the rows may not sum to 100 per cent due to rounding.



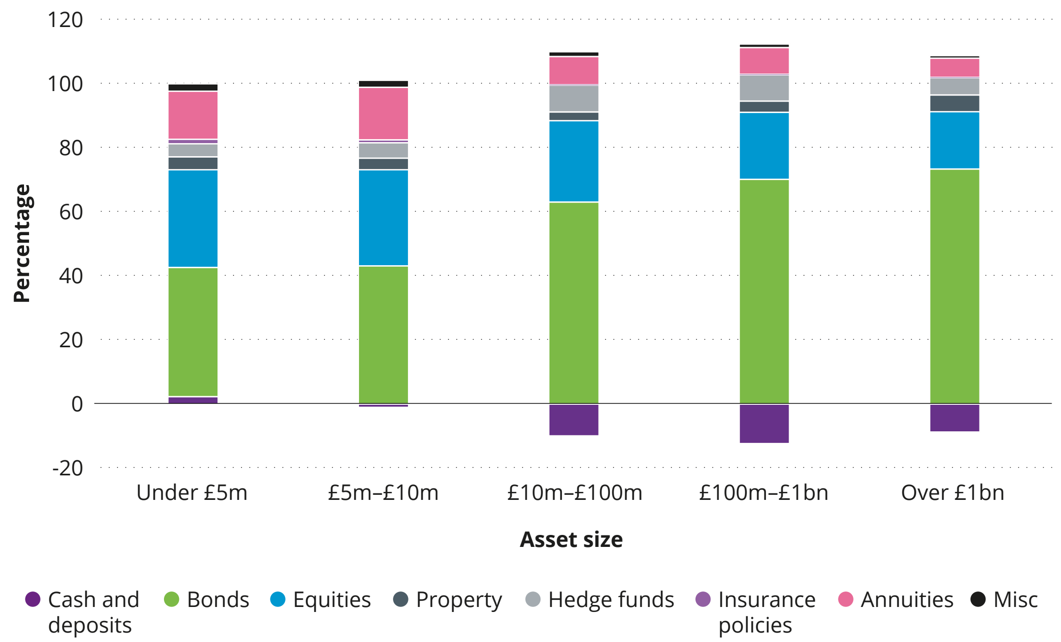
Note: figures may not sum to 100 per cent or the 'Other investments' total due to rounding.

Source: PPF

Asset allocation continued

Figure 7.6 | Weighted average asset allocation of schemes by asset size

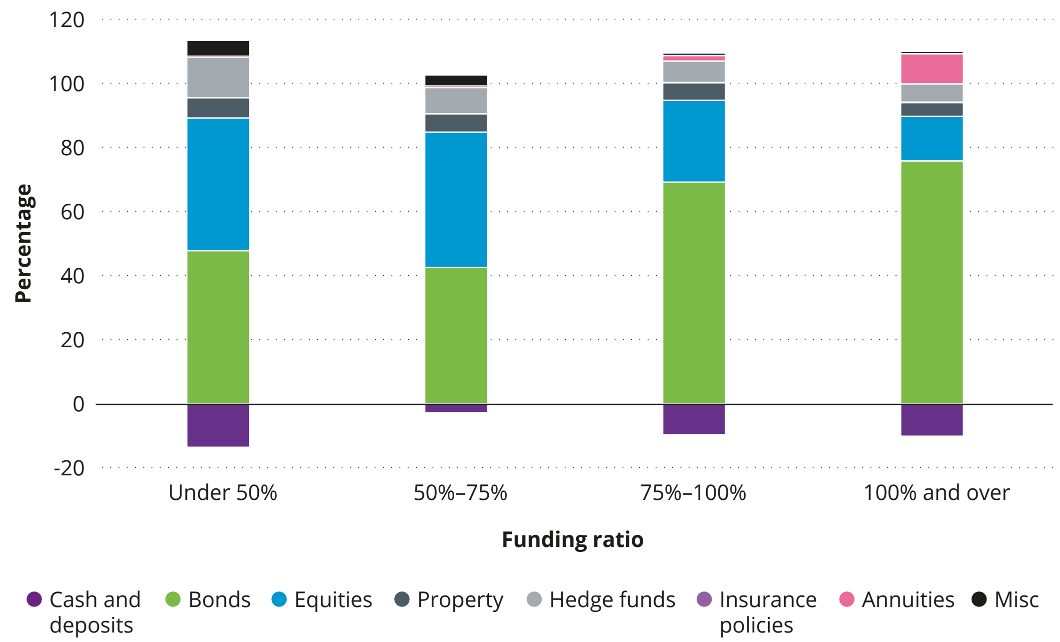
The proportion of assets held in bonds tends to increase with scheme asset size, while equities display the opposite relationship.



Source: PPF

Figure 7.8 | Weighted average asset allocation by s179 funding ratio

The best funded schemes tend to have the greatest proportion of assets invested in bonds, with a smaller proportion invested in equities.

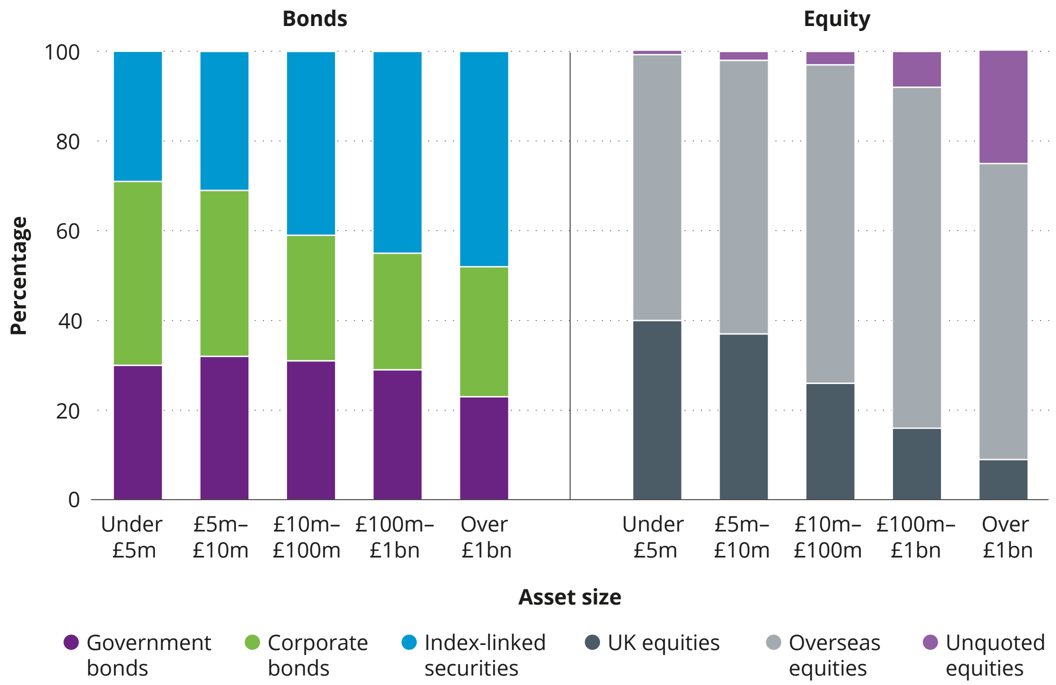


Schemes that are in surplus on an s179 basis have the greatest proportion of assets invested in bonds, which is consistent with the stability of the s179 funding position of these schemes over time as shown in figure 5.3.

Source: PPF

Figure 7.7 | Weighted averages of equity and bond holdings split by asset size

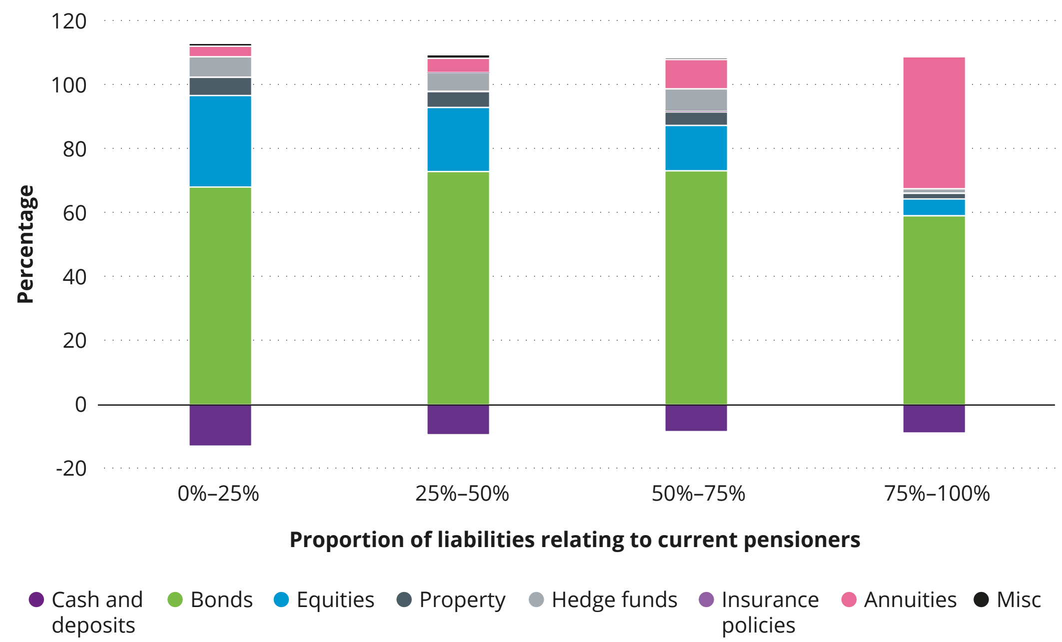
Larger schemes tend to hold a higher proportion of overseas and private equities within their equity portfolio, and a higher proportion of index-linked bonds in their bond portfolio.



Source: PPF

Figure 7.9 | Weighted average asset allocation of schemes by scheme maturity

As scheme maturity increases, the proportion of equities falls.



Note: the heavy concentration in 'Annuities' for mature schemes is explained by one large scheme with a heavy concentration in annuity policies.

Source: PPF

08
Risk reduction

This chapter looks at measures that schemes have taken to reduce risk in their funding levels. This helps to reduce the risk of schemes claiming on the PPF, so taking such measures can help schemes to reduce the amount of PPF levy they pay.

Summary

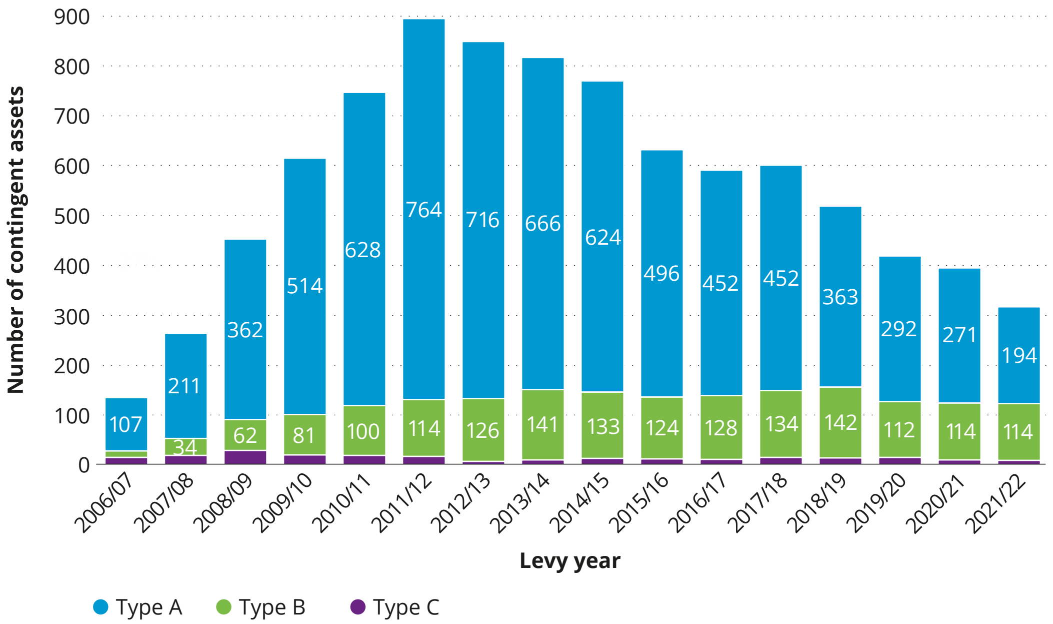
- This chapter contains information on the risk reduction measures DB schemes have put in place or undertaken, including contingent assets, longevity swaps, buy-ins and buy-outs. It also shows information on how recovery plan lengths and funding measures relative to DB schemes' Technical Provisions have changed over time.
- The total number of contingent assets submitted to the PPF for the 2021/22 levy year was 317, compared with 395 in 2020/21. This is almost entirely due to a reduction in the number of Type A Contingent Assets (employer parent or group guarantees).
- Based only on current recovery plans in place, total annual recovery plan payments are indicated to decrease by around 94 per cent over the next 10 years as schemes increasingly become fully funded on a Technical Provisions basis. The rate of decrease is planned to be similar between different scheme sizes and, in aggregate, annual recovery plan payments are set to fall from around £12.2 billion in 2021 to around £0.8 billion in 2031. Changes may be made to existing recovery plans and new recovery plans may be put in place in the future if experience is different from what has currently been assumed by schemes.
- Analysis of TPR's latest Technical Provisions and recovery plan data shows that in Tranche 14[9], the average recovery plan length was 5.9 years, over a year and a half less than that of Tranche 11 (comparable given the three-year valuation cycle). The average funding ratio as measured by assets divided by Technical Provisions was 91.4 per cent in Tranche 14, 4.4 percentage points higher than Tranche 11.
- Technical Provisions as a percentage of s179 liabilities increased to 103.0 per cent from 95.8 per cent in Tranche 11. There was also a rise in Technical Provisions as a percentage of buy-out liabilities, from 69.2 per cent to 75.7 per cent.
- Total risk transfer business covering buy-outs, buy-ins and longevity swaps amounted to £306 billion between the end of 2007 and the second quarter of 2021. 38 per cent of these deals were longevity swaps.
- The total value of risk transfer deals was £56 billion in 2020, which was slightly higher than £54 billion in 2019 and is the highest amount for a calendar year on record.

9 Tranche 14 covers schemes with valuation dates between 22 September 2018 and 21 September 2019.

Contingent assets

Figure 8.1 | Contingent assets by type

The number of recognised contingent assets is the lowest since levy year 2007/08.



Type A Contingent Assets are parent/group companies' guarantees to fund the scheme, up to a pre-arranged amount.

Type B Contingent Assets comprise security over holdings of cash, real estate and/or securities.

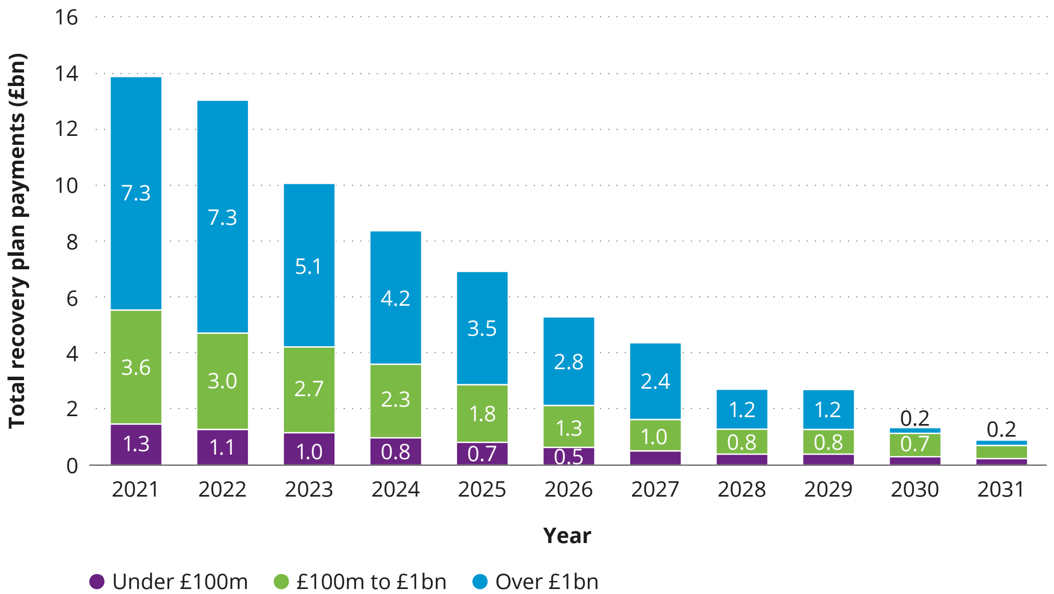
Type C Contingent Assets consist of letters of credit and bank guarantees.

Source: PPF

Recovery plan payments

Figure 8.2 | Planned recovery plan payments until 2031 by asset size

Total annual recovery plan payments are planned to reduce by around 94 per cent over the next 10 years, from around £12.2 billion in 2021 to around £0.8 billion in 2031.



Source: TPR

The scheme funding regime

Figure 8.3 | Technical Provisions and recovery plan lengths (unweighted averages)

In Tranche 14, the average recovery period was 5.9 years, over a year and a half shorter than Tranche 11 (comparable given the three-year valuation cycle).

Tranche	Year of valuation	Number of recovery plans	Average length of recovery plan (years)	Assets as a percentage of Technical Provisions	Technical Provisions as a percentage of s179 liabilities	Technical Provisions as a percentage of buy-out liabilities
2	2006/07	1,888	7.6	82.3%	113.5%	70.3%
5	2009/10	1,937	8.4	79.0%	112.3%	72.9%
8	2012/13	1,726	8.3	82.2%	98.6%	70.9%
11	2015/16	1,462	7.5	87.0%	95.8%	69.2%
12	2016/17	1,481	7.1	88.8%	96.9%	68.8%
13	2017/18	1,112	6.1	93.5%	100.0%	73.5%
14[10]	2018/19	1,144	5.9	91.4%	103.0%	75.7%

Notes:
(1) Valuation dates run from 22 September to 21 September.
(2) 74.8 per cent of schemes with Tranche 14 valuations reported valuations in respect of Tranches 11, 8, 5 and 2.

Source: 'Scheme funding analysis 2021 Annex', TPR, July 2021.

10 Tranche 14 covers schemes with valuation dates between 22 September 2018 and 21 September 2019.

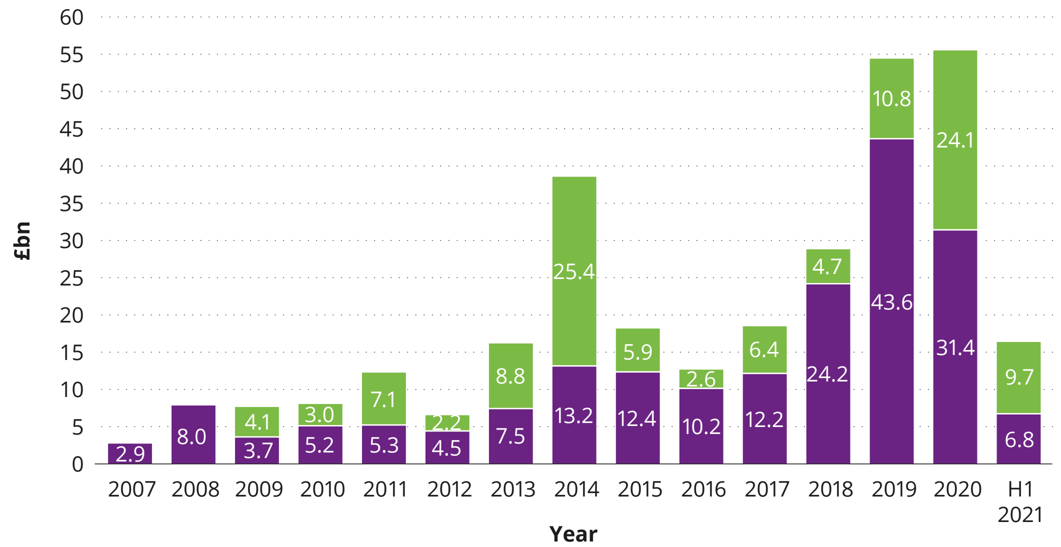
Buy-out, buy-in and longevity hedging

Buy-out and buy-in transactions provide schemes with the opportunity to remove risk relating to all or part of their liability. Under a buy-out deal, a scheme transfers its entire liability and scheme assets to an insurer in exchange for a premium. Insurers tend to require assets significantly in excess of Technical Provisions to compensate for the risk transferred. Buy-in deals result in an insurance policy as a scheme asset.

While both longevity swaps and buy-in/buy-out can mitigate the risk of greater than expected life expectancy, under the former there is no transfer of the underlying scheme assets to a counterparty. Longevity swaps entail the pension scheme exchanging fixed payments for cash flows that vary in accordance with the longevity experience of a reference population (either the named scheme members or a wider sample).

Figure 8.4 | Value of risk transfer deals since 2007

£55.5 billion of risk transfer deals were completed in 2020, which was £1.1 billion higher than in 2019 and is the highest amount for a calendar year on record.



Source: Hymans Robertson, 'Buy-outs, buy-ins and longevity hedging'

Figure 8.5 | Number of risk transfer deals since 2010

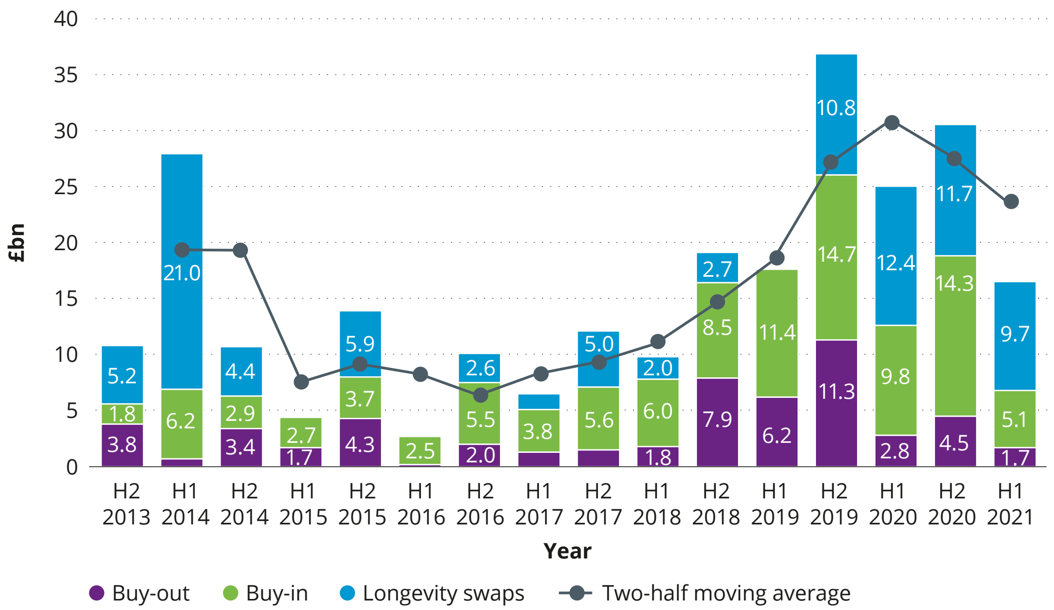
There were more longevity swaps in 2020 than in 2019. However, there were fewer buy-ins and buy-outs in 2020 than in 2019.

Year	Number of buy-ins/buy-outs	Number of longevity swaps
2010	174	2
2011	171	4
2012	167	2
2013	219	10
2014	177	5
2015	176	4
2016	104	5
2017	132	5
2018	171	4
2019	157	3
2020	141	8
H1 2021	57	2

Source: Hymans Robertson, 'Buy-outs, buy-ins and longevity hedging'

Figure 8.6 | Value of risk transfer deals since H2 2013

The two-half moving average of risk transfer deals has followed a general upward trend since H2 2016, although this has fallen over the last year.



Source: Hymans Robertson, 'Buy-outs, buy-ins and longevity hedging'

09
PPF levy 2020/21

This chapter looks at how much PPF levy was invoiced and how this was distributed between schemes and by employers.

Summary

- Since 2006/07, the PPF has collected a total of £8.6 billion through levies, determined mainly by the risk schemes pose to the PPF. This and other key statistics from this chapter are summarised in the following table:

	2020/21[11]	2019/20
Total levy since 2006/07	**£8.6bn**	£8.0bn
Total levy in year	**£630m**	£564m
Proportion of total scheme assets	**0.04%**	0.04%
Number of schemes which contributed to this	**5,331**	5,425
Amount and proportion of total levy contributed by the top 100 levy payers (by size of levy)	**£347m**	£290m
	55%	51%
Proportion of schemes which paid no risk-based levy	**28%**	28%
Number of schemes with a capped risk-based levy	**160**	161
Proportion of total number of schemes	**3.0%**	3.0%
PPF levy band whose schemes made the largest contribution in the year	**5**	3
Levy contribution made by these schemes	**£96m**	£114m
Proportion of total levy contribution	**15%**	20%
Proportion of total liabilities accounted for by schemes in this category	**11%**	24%
Proportion of levy being paid by the top three Experian scorecards (as measured by levy paid)	**82%**	82%

Assets and liabilities, and therefore funding ratios, in this chapter are on a smoothed, stressed basis unless otherwise stated and exclude DRCs. For more information on these and other terms and definitions used in this chapter, see the 2020/21 Levy Determination, and its associated appendices, available on our website.

11 Year from 1 April 2020 to 31 March 2021.

Total levy by year

In this section we compare total levy by levy year, from levy year 2012/13 to 2020/21. We look at the distribution across schemes broken down by levy band, considering the risk-based levy and scheme-based levy separately.

Figure 9.1 | Total levy

The levy has varied between £540 million and £650 million and has fallen as a percentage of assets since 2012/13.

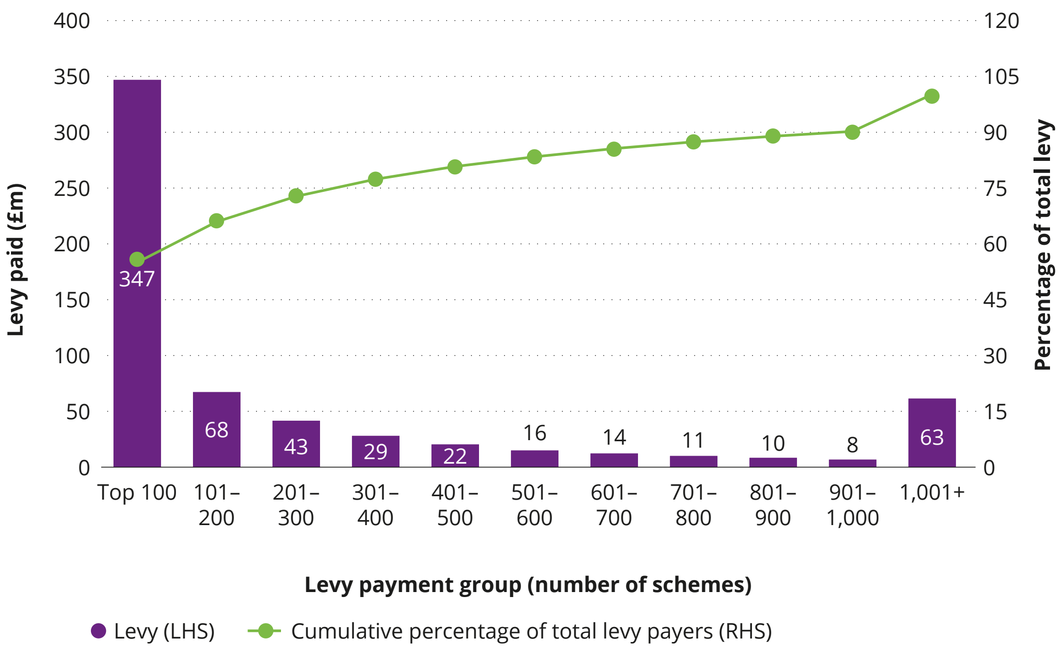
Levy year	Total levy (£m)[a]	Levy as a percentage of assets[b]	Number of capped schemes[c]
2012/13	648	0.08%	427
2013/14	577	0.06%	302
2014/15	579	0.06%	274
2015/16	560	0.05%	211
2016/17	563	0.05%	187
2017/18	541	0.04%	147
2018/19	564	0.04%	184
2019/20	564	0.04%	161
2020/21	630	0.04%	160

Notes:
a) The figures quoted in this chapter are based on the total levy for the dataset of 5,331 schemes in 2020/21, or from prior years' editions of *The Purple Book*.
b) Total levy as a percentage of levy-paying schemes' total assets.
c) Refers to schemes to which the risk-based levy cap applied.

Source: PPF

Figure 9.2 | Distribution of levy by largest levy payers in 2020/21

In 2020/21, the top 100 levy payers accounted for £347 million, or 55 per cent of the total levy.



Note: the 1,001+ category accounts for a relatively large percentage of the total levy as it contains just over 4,300 schemes.

Note: the components do not sum to the total levy because of rounding.

Source: PPF

Figure 9.3 | Schemes with no risk-based levy by levy year

The proportion of schemes paying no risk-based levy remains the same as last year and is the highest since the introduction of the New Levy Framework in 2012/13.

Levy year	Number of schemes	Percentage of total schemes	s179 liabilities[12] (£bn)	s179 liabilities as percentage of total
2012/13	1,191	19%	199	19%
2013/14	1,056	17%	171	15%
2014/15	1,113	18%	206	17%
2015/16	985	17%	195	14%
2016/17	961	17%	239	16%
2017/18	1,011	18%	405	25%
2018/19	1,457	26%	560	35%
2019/20	1,509	28%	562	33%
2020/21	1,503	28%	624	34%

Source: PPF

Figure 9.4 | Number of schemes with capped risk-based levies by levy band

The proportion of schemes with a capped risk-based levy was three per cent for 2020/21.

Levy band	Levy rate	Total number of schemes	Number of capped schemes	Percentage of schemes in levy band which are capped
1	0.28%	785	0	0.0%
2	0.31%	354	0	0.0%
3	0.35%	569	0	0.0%
4	0.40%	682	0	0.0%
5	0.53%	738	0	0.0%
6	0.81%	783	0	0.0%
7	1.26%	646	3	0.5%
8	1.76%	271	10	3.7%
9	2.39%	308	72	23.4%
10	3.83%	195	75	38.5%
Total		**5,331**	**160**	**3.0%**

Note: a scheme's risk-based levy is calculated by mapping the sponsoring employer's insolvency probability to one of the 10 levy rates above. Schemes with multiple employers have had their insolvency probability calculated as an average of the corresponding employers, mapped back to the nearest levy band. This is then multiplied by the amount of underfunding in the scheme and the levy scaling factor in order to give the risk-based levy. Further details of how the PPF levy is calculated can be found on the PPF website[13].

Source: PPF

12 Liabilities are stressed and smoothed.
13 For more information see: https://www.ppf.co.uk/how-levy-calculated

Figure 9.5 | Number of schemes with capped risk-based levies by funding ratio (on a stressed and smoothed basis)

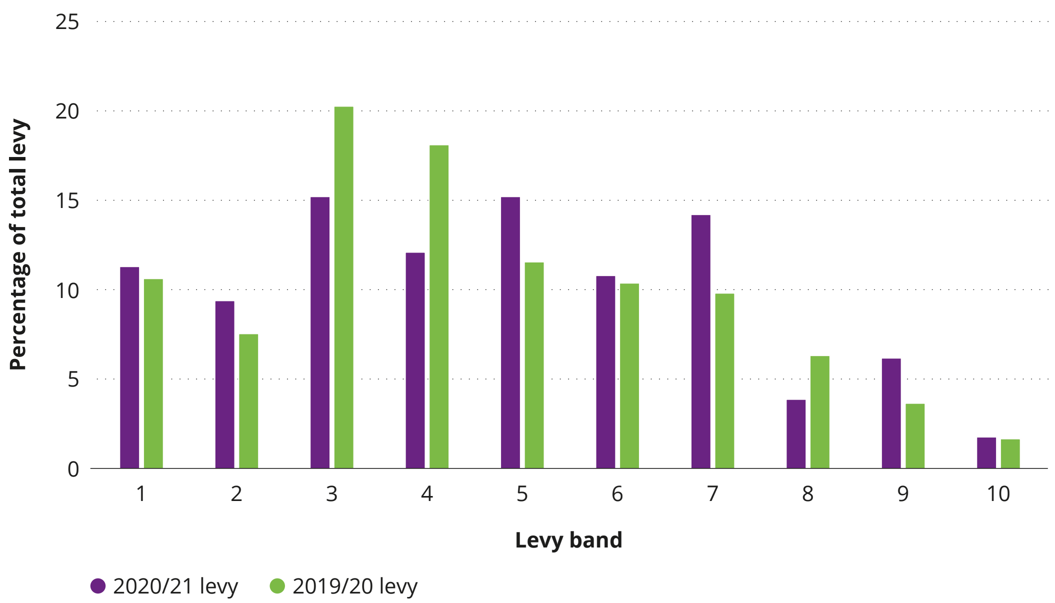
Schemes with lower funding levels are more likely to pay a capped risk-based levy. No scheme with a funding level over 75 per cent was capped in 2020/21.

Funding ratio	Number of capped schemes	Percentage of schemes in funding band which are capped	Total number of schemes
Less than 50%	71	14.8%	480
50%–75%	89	4.9%	1,827
75%–100%	0	0.0%	1,706
Over 100%	0	0.0%	1,318
Total	**160**	**3.0%**	**5,331**

Source: PPF

Figure 9.6 | Levy distribution by levy band

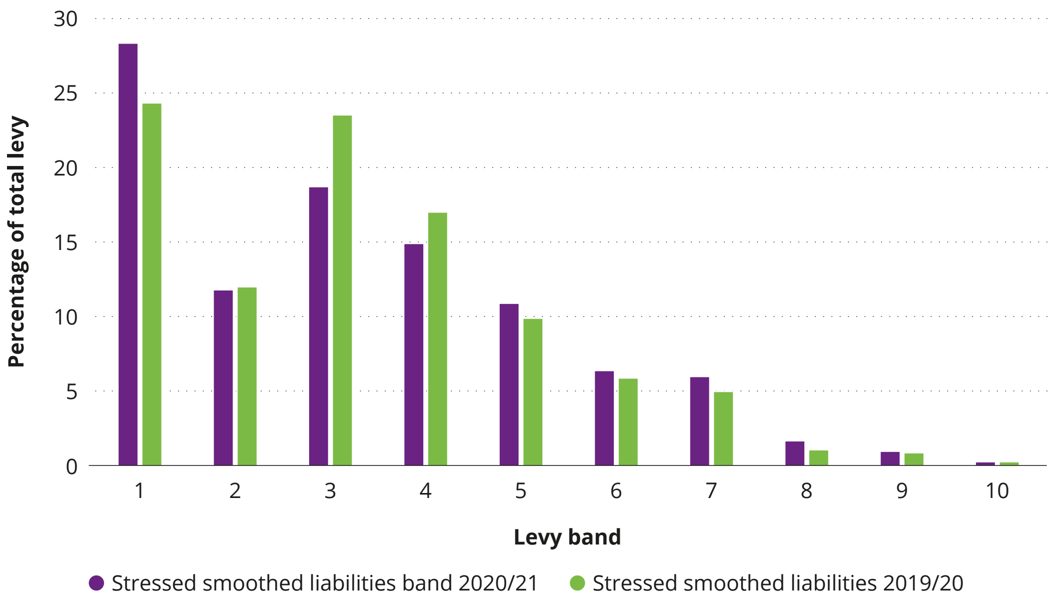
Schemes in levy bands 3 and 5 made the largest contribution to the total levy in 2020/21, paying 15 per cent each.



Source: PPF

Figure 9.7 | s179 aggregate stressed smoothed liabilities by levy band

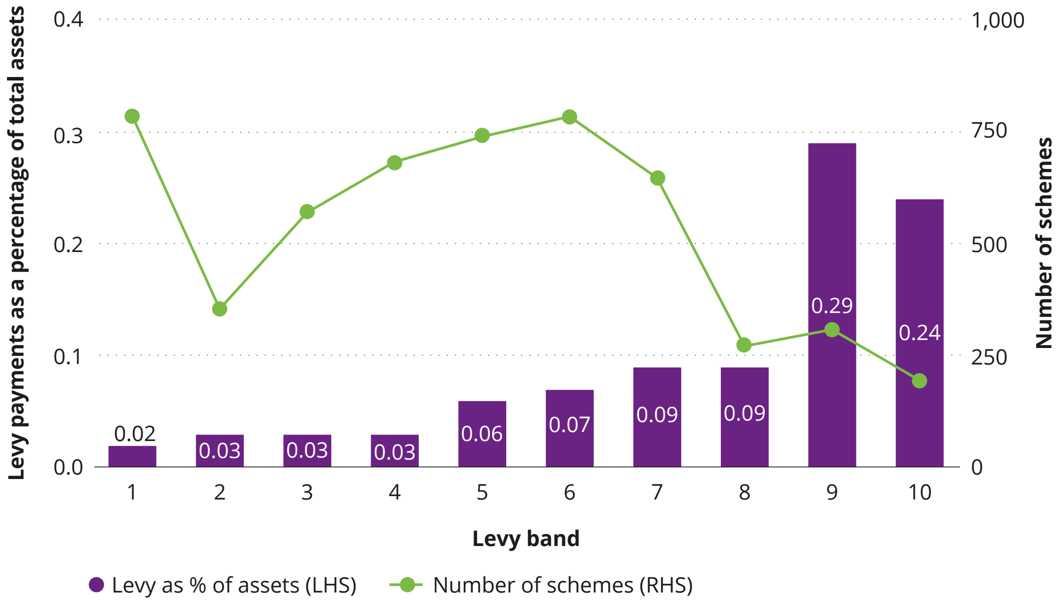
Schemes in levy band 1 account for 28 per cent of the total liabilities in 2020/21.



Source: PPF

Figure 9.8 | Levy as a proportion of assets by levy band

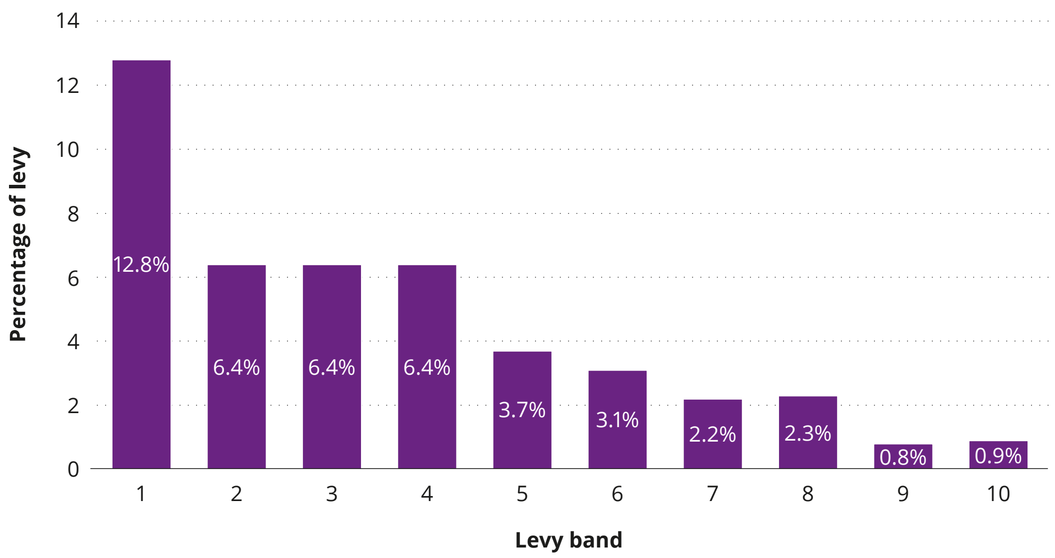
Schemes in the top two levy bands paid a noticeably higher levy, expressed as a percentage of assets, than schemes in lower bands.



Source: PPF

Figure 9.9 | Percentage of total levy that is scheme-based[14] by levy band

In general, the proportion of total levy that is scheme-based falls steadily as the levy band increases.



Source: PPF

Figure 9.10 | Percentage of total levy that is scheme-based by funding ratio (on a stressed and smoothed basis)

For schemes that were over 100 per cent funded the scheme-based levy constituted on average over 99 per cent of their total levy.

Funding ratio	Less than 50%	50%–75%	75%–100%	Over 100%
Percentage of levy that is scheme-based	1.2%	3.1%	8.7%	99.2%

Source: PPF

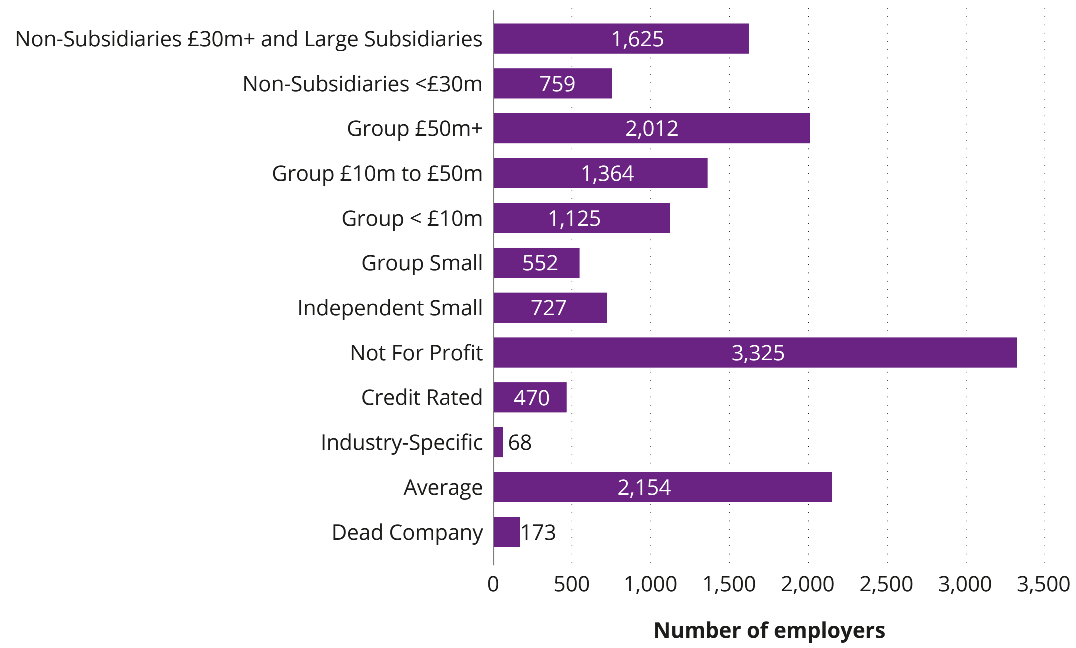
Experian scorecards

For the 2020/21 levy year, we used the PPF and Experian's bespoke model for assessing insolvency risk of schemes in the universe.

The charts in this section show how many sponsoring employers in the PPF universe are assigned to each scorecard, and how much of the total 2020/21 PPF levy was collected in respect of schemes sponsored by the employers in these categories[15].

Figure 9.11 | Number of sponsoring employers in each Experian scorecard

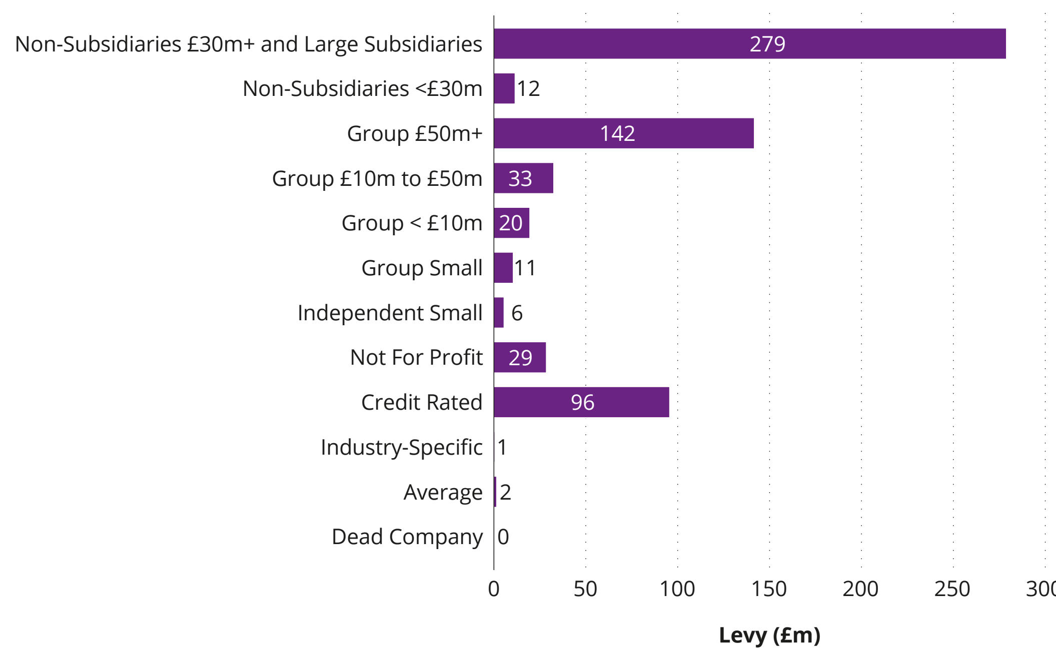
Not For Profit organisations make up the greatest number of sponsoring employers in the PPF universe.



Source: PPF

Figure 9.12 | Levy invoiced in respect of schemes with sponsoring employers in each Experian scorecard

Schemes on three of the 12 Experian scorecards paid 82 per cent of the total levy.



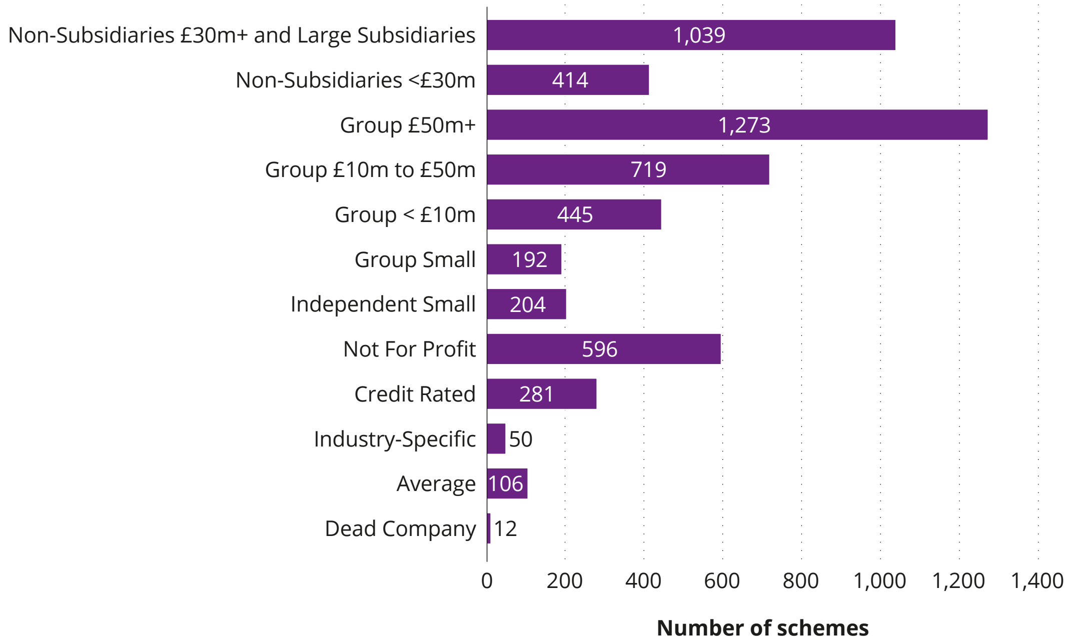
Note: the components do not sum to the total levy because of rounding.

Source: PPF

14 For the definition of scheme-based levy, please see the 2020/21 Levy Determination.
15 For multi-employer schemes (with employers on different scorecards), the levy was split proportionately by membership numbers.

Figure 9.13 | Number of schemes with sponsoring employers in each Experian scorecard

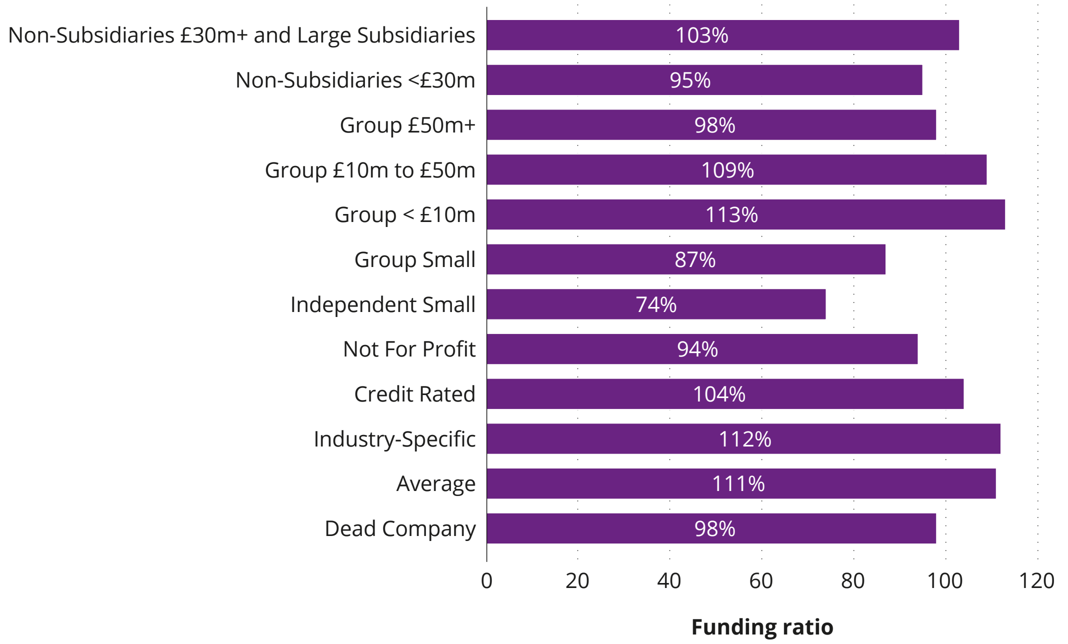
43 per cent of schemes had sponsoring employers categorised as 'Non-Subsidiaries £30 million+ and Large Subsidiaries' or 'Group £50 million+'.



Source: PPF

Figure 9.14 | Aggregate funding ratio (unstressed and unsmoothed) of schemes with sponsoring employers in each Experian scorecard

Schemes with sponsoring employers categorised as 'Independent Small' have the lowest aggregate funding ratios.



Source: PPF

10

Claims and schemes in assessment

This chapter looks at characteristics of schemes that were in a PPF assessment period as at 31 March 2021. Once they have made a claim, all schemes go through an assessment period to determine their ability to pay PPF levels of compensation before they are able to enter the PPF.

Summary

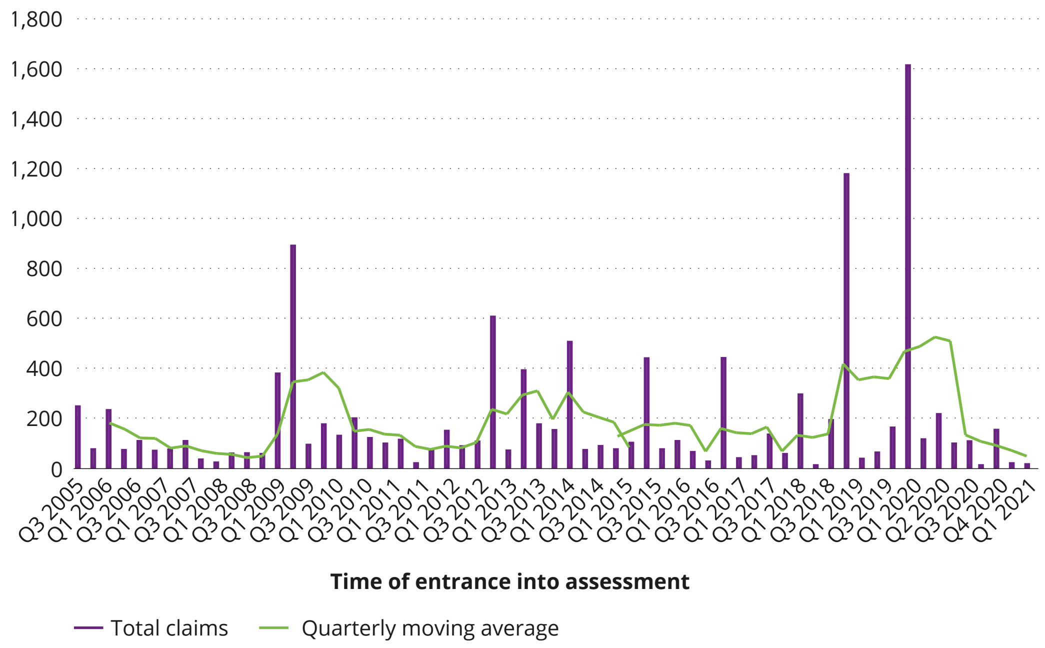
- The changes over the year since 31 March 2020 reflect new schemes entering and remaining in assessment, schemes transferring into the PPF and schemes being rescued, rejected or withdrawn.
- The following table sets out some of the statistics about schemes in PPF assessment[16] as at 31 March 2021, including comparisons with both the previous year and schemes in the universe.

		31 March 2021	31 March 2020
Schemes in assessment[17]	Number of schemes	**87**	80
	Number of records in respect of all members[18]	**98,000**	159,000
	Total assets	**£8.6bn**	£10.3bn
	Total PPF liabilities	**£9.4bn**	£13.6bn
	Funding ratio	**91%**	76%
Schemes in universe	Funding ratio	**103%**	95%

Schemes entering assessment

Figure 10.1 | Total s179 claims for schemes entering an assessment period

The total s179 deficit of the 30 schemes that entered assessment in the year to 31 March 2021 was £182 million – the lowest annual total since the PPF's inception.

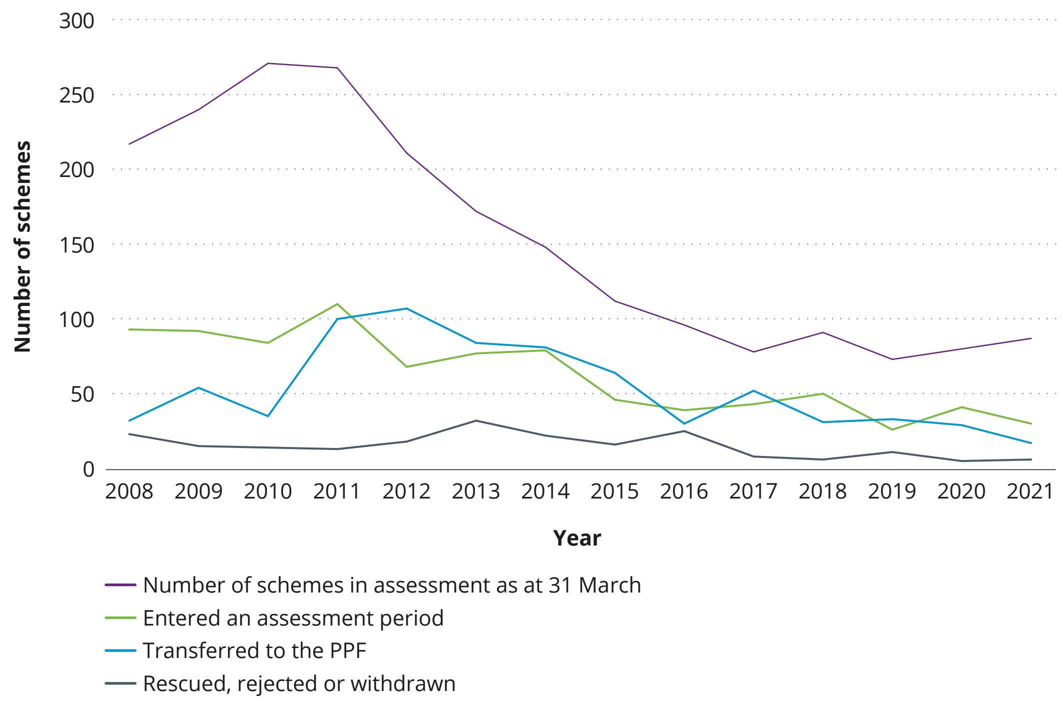


Source: PPF

16 For the purpose of this chapter we treat separate sections and segregated parts of the same scheme as one single scheme. We also include overfunded schemes. This is different from the approach in the PPF's Annual Report and Accounts which treats all segregated parts of schemes as separate schemes, and generally excludes overfunded schemes.
17 These figures differ from those in the Annual Report and Accounts because of the exclusion of expected reapplications in *The Purple Book* and the use of a different set of actuarial assumptions.
18 Some members have more than one record in the data.

Figure 10.2 | Number of schemes in assessment each year as at 31 March

87 schemes were in PPF assessment at 31 March 2021, up from 80 last year.



Note: the figures in the chart exclude those schemes that came into assessment and were subsequently rescued, rejected or withdrawn in the same year.

Source: PPF

Figure 10.3 | Funding statistics for schemes in assessment each year as at 31 March

The funding ratio of schemes in assessment at 31 March 2021 increased to its highest ever level of 91 per cent, from last year's 76 per cent. This increase was mainly due to a large underfunded scheme transferring to the PPF during the year to 31 March 2021.

Year	Assets (£bn)	Liabilities (£bn)	Surplus (£bn)	Funding ratio	Universe funding ratio
2007	4.0	4.7	-0.7	85%	109%
2008	4.2	5.4	-1.2	78%	99%
2009	6.7	9.4	-2.8	71%	80%
2010	8.9	10.0	-1.1	89%	104%
2011	9.5	10.9	-1.4	87%	100%
2012	6.2	8.4	-2.2	74%	83%
2013	5.8	7.6	-1.8	77%	84%
2014	5.8	7.6	-1.7	77%	97%
2015	5.3	7.5	-2.3	70%	84%
2016	5.0	7.4	-2.4	68%	86%
2017	5.6	6.6	-1.0	85%	91%
2018	6.9	9.3	-2.4	74%	96%
2019	7.7	11.2	-3.5	69%	99%
2020	10.3	13.6	-3.3	76%	95%
2021	8.6	9.4	-0.8	91%	103%

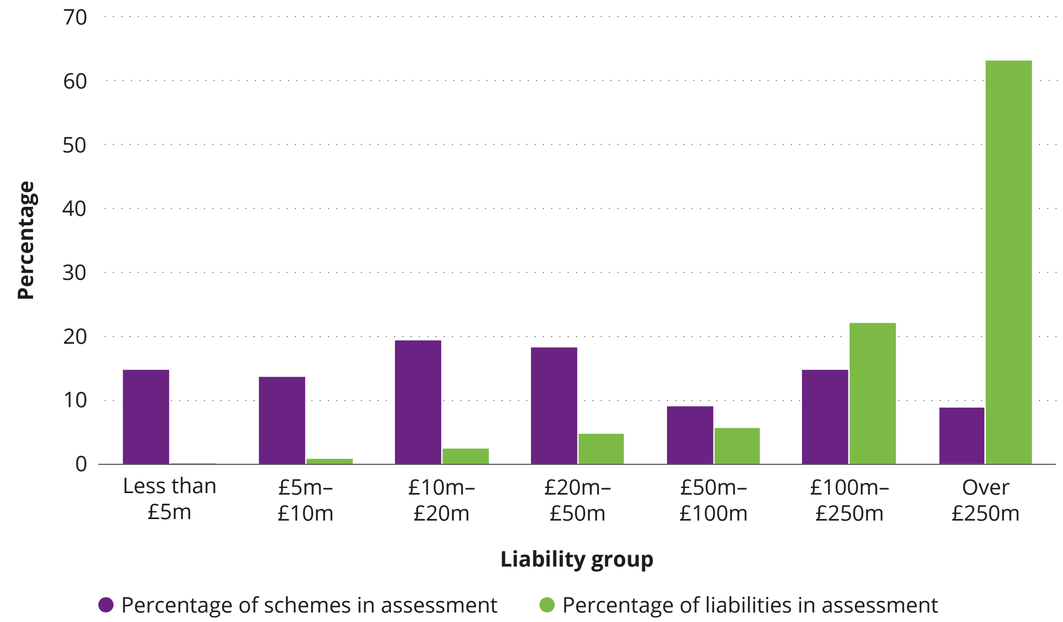
Note: the components may not sum to the total because of rounding. Also the ratios of the components may not equal the aggregate ratios because of rounding.

Source: PPF

Scheme demographics

Figure 10.4 | Percentage of schemes and percentage of s179 liabilities grouped by size of liabilities for schemes in assessment as at 31 March 2021

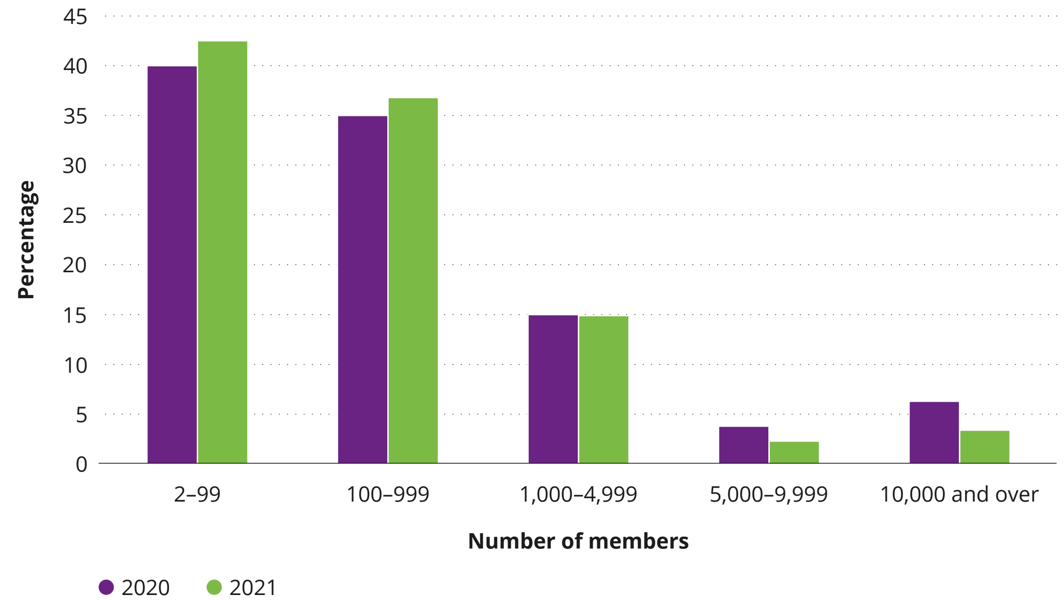
Schemes in PPF assessment that have liabilities of over £250 million represent around nine per cent of schemes and 63 per cent of liabilities.



Source: PPF

Figure 10.5 | Proportion of schemes in assessment by membership size

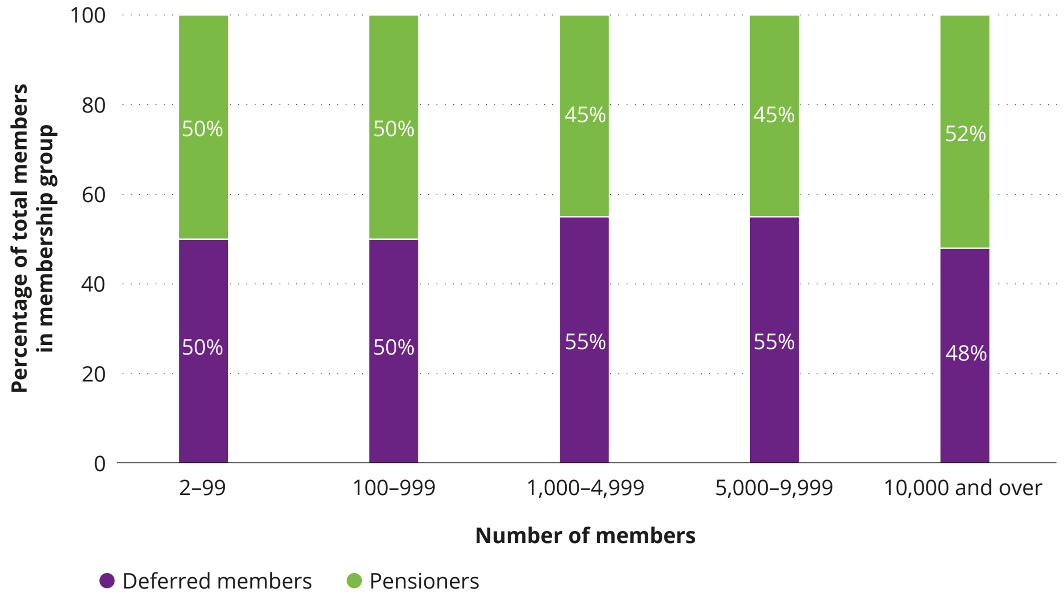
Around 80 per cent of schemes in assessment have fewer than 1,000 members.



Source: PPF

Figure 10.6 | Maturity of schemes in assessment by membership size

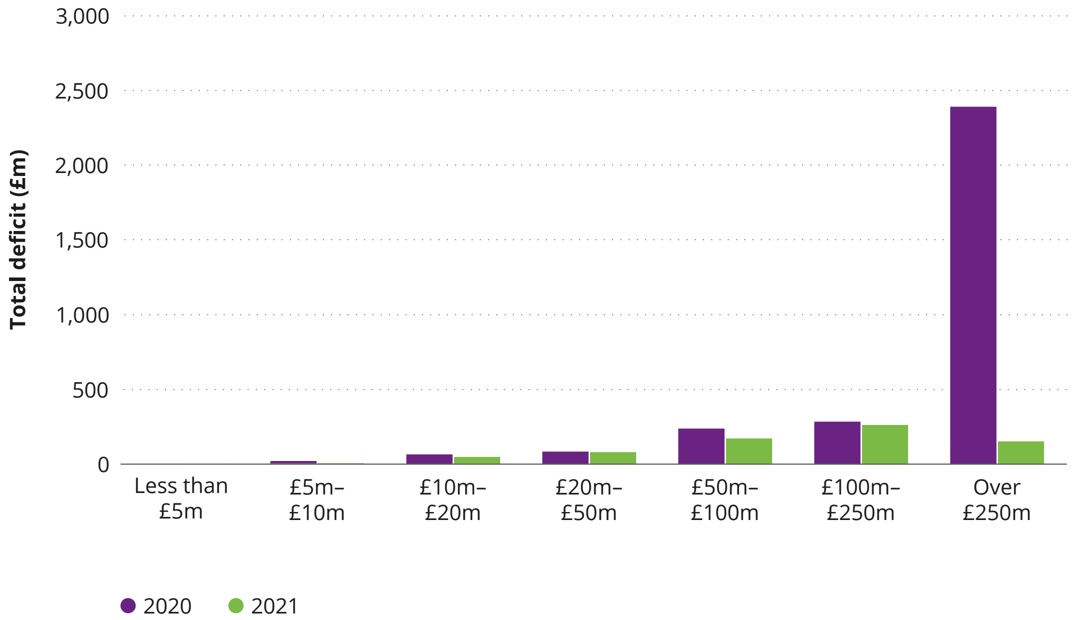
Broadly half of members in schemes in assessment are pensioners and half are deferred members.



Source: PPF

Figure 10.7 | Total s179 deficit of schemes in assessment by liability size

56 per cent of the deficit from schemes in assessment relates to schemes with liabilities of more than £100 million, down from 86 per cent last year. This change is mainly due to three large schemes exiting assessment over the year to 31 March 2021.



Source: PPF

11
PPF compensation 2020/21

This chapter looks at the compensation that we paid to PPF members in 2020/21, including the distribution of compensation amounts, and the gender split of PPF members.

Summary

When a scheme transfers into the PPF, we generally pay compensation of 90 per cent of the scheme pension (subject to a compensation cap[19]) to members who have not reached their Normal Pension Age (NPA) at the date the scheme entered assessment. We will generally pay a starting level of compensation equivalent to 100 per cent of the scheme pension to those members who are over their NPA at the start of the assessment period.

Here are some of the key statistics featured in this chapter:

	31 March 2021	31 March 2020
PPF compensation paid in the year	**£1,006m**	£860m
Number of records in respect of members receiving compensation	**184,844**	169,861
Average annual amount paid to members and dependants	**£4,829**	£4,588
Number of records in respect of deferred members*	**113,902**	116,461
Average annual compensation accrued by deferred members (ignoring any impact of the compensation cap)	**£3,325**	£3,333

* Members with compensation not yet in payment.

Total compensation and other member statistics

Figure 11.1 | Total compensation and number of members' records

Total compensation paid in the year to 31 March 2021 was £1,006.4 million, 17 per cent above the amount paid in the year to 31 March 2020.

		Number of members' records[20]		
Year ended 31 March	Total compensation paid (£m)	Members' receiving compensation	Deferred members	Total
2007	1.4	1,457	5,621	7,078
2008	17.3	3,596	8,577	12,173
2009	37.6	12,723	18,009	30,732
2010	81.6	20,775	26,058	46,833
2011	119.5	33,069	42,063	75,132
2012	203.3	57,506	70,608	128,114
2013	331.8	80,665	91,353	172,018
2014	445.1	95,599	100,070	195,669
2015	564.0	114,028	110,681	224,709
2016	616.0	121,059	109,143	230,202
2017	661.3	129,661	110,478	240,139
2018	724.5	135,377	107,759	243,136
2019	775.1	148,005	109,567	257,572
2020	859.7	169,861	116,461	286,322
2021	1,006.4	184,844	113,902	298,746

Source: PPF

19 In June 2020 the Administrative Court ruled in the case of *Hughes v Board of the Pension Protection Fund 2020 EWHC 1598* that this cap is unlawful. The Court of Appeal upheld this ruling in August 2021. We are currently in the process of uplifting compensation for members who were previously capped, but the compensation in payment shown in the table above has not yet been adjusted to dis-apply the compensation cap.
20 Some members have more than one record in the data.

Figure 11.2 | Gender of members in the PPF

The majority of our members are male.

Members receiving compensation

● Male ● Female

Deferred members

● Male ● Female

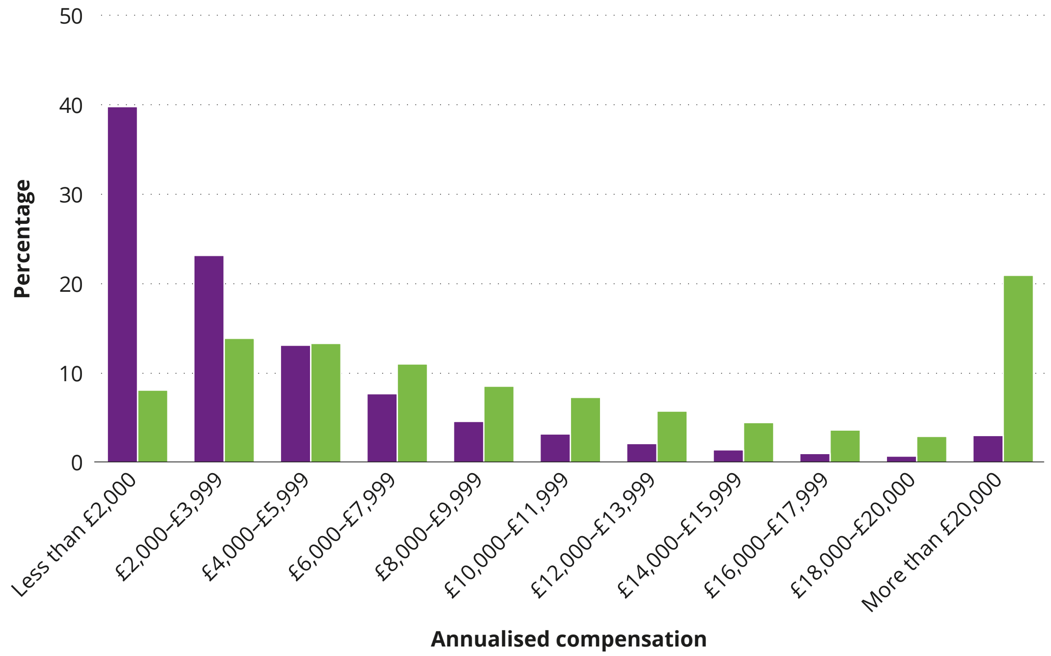
Overall

● Male ● Female

Source: PPF

Figure 11.3 | Distribution of members receiving compensation by annualised compensation level

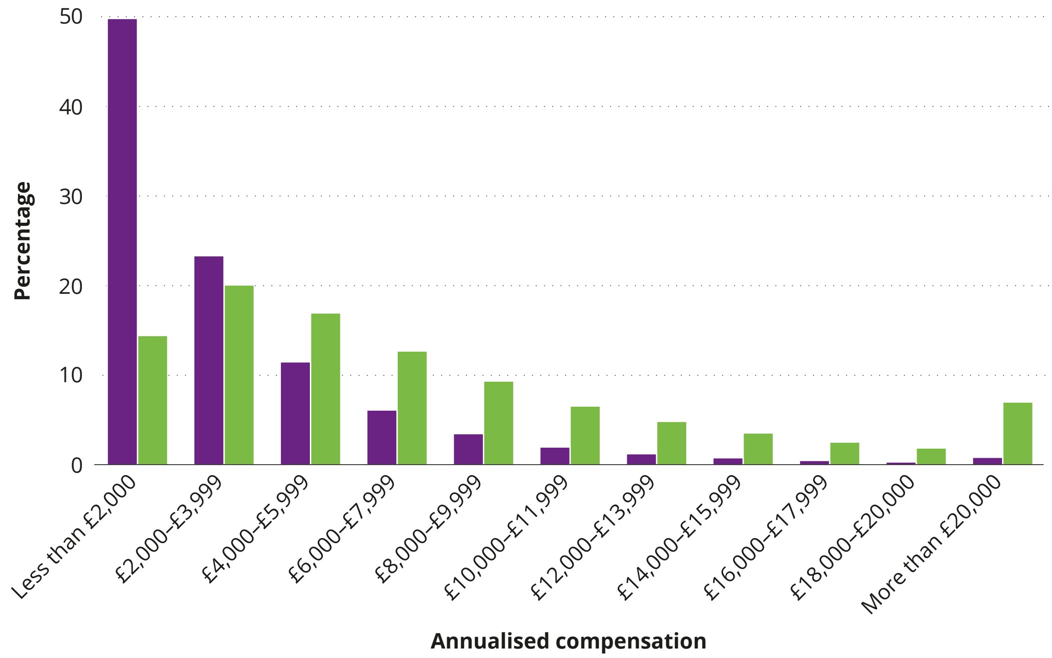
Around 90 per cent of members receiving compensation are paid less than £10,000 a year. However, this compensation makes up around 55 per cent of the total paid out.



Source: PPF

Figure 11.4 | Distribution of deferred members by annualised compensation level

Around 95 per cent of deferred members have annualised compensation of less than £10,000. This compensation makes up around 75 per cent of the total annual deferred compensation.



Source: PPF

Figure 11.5 | Status of members receiving compensation

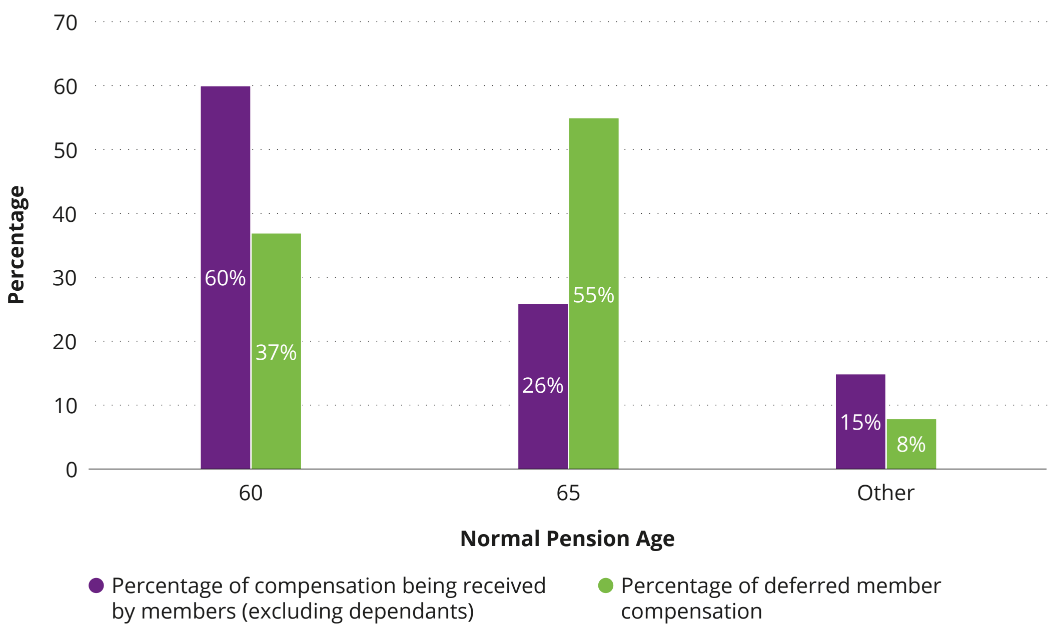
	Number of records in respect of members receiving compensation	Percentage of total population	Annualised compensation (£m)	Percentage of total annualised compensation
Members	154,415	84%	794	89%
Dependants	30,429	16%	99	11%
Total	**184,844**	**100%**	**893**	**100%**

Note: annualised compensation is less than compensation paid in the year to 31 March 2021 as the latter includes cash sums taken upon retirement, and takes account of member movements (e.g. deaths or retirements) over the year.

Source: PPF

Figure 11.6 | Distribution of members receiving compensation (excluding dependants) and deferred member compensation by NPA

For members receiving compensation, the majority of compensation was payable from an NPA of 60, whereas for deferred members the majority is payable from age 65.

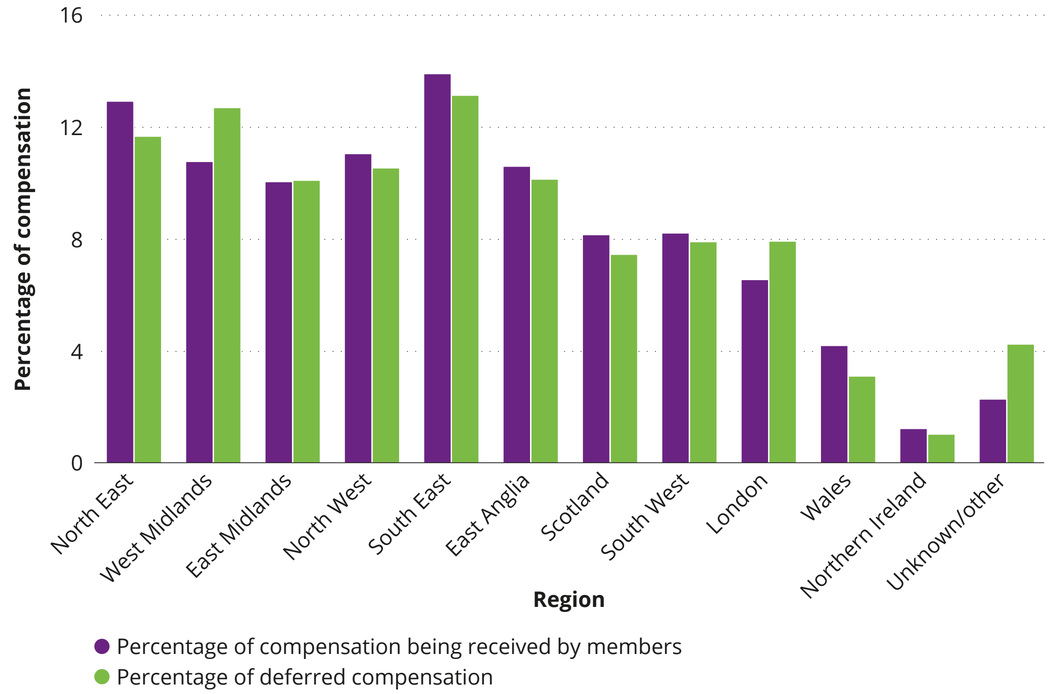


Note: the component figures may not sum to 100 per cent because of rounding.

Source: PPF

Figure 11.7 | Annualised compensation by UK region

The largest share of compensation goes to members in the North East and South East.



Source: PPF

Figure 11.8 | Annualised compensation for members receiving compensation and deferred members before 6 April 1997 and after 5 April 1997

Around 70 per cent of compensation being received by members was accrued before 6 April 1997.

	Members receiving compensation		Deferred members	
	Annualised compensation (£m)	Percentage	Annualised compensation (£m)	Percentage
Before 6 April 1997	620	69%	154	41%
After 5 April 1997	273	31%	225	59%
Total	**893**[21]	**100%**	**379**	**100%**

Source: PPF

21 This represents the annualised compensation payable to members receiving compensation at 31 March 2021 and excludes lump sums, whereas the total compensation paid over the year to 31 March 2021 including lump sums is £1,006.4 million.

12
PPF risk developments

This chapter looks at the risks facing the PPF and our ability to deliver on our mission. These include risks to our own funding position and the risk of future claims.

Summary

- This chapter contains information on how the PPF manages its risks and on how the risks to which we are exposed, outlined in the previous chapters, might impact our future funding levels.
- We operate a comprehensive enterprise risk management framework which enables us to understand and measure the potential impact of risks on the PPF.
- We operate a stochastic model which enables us to assess the likelihood of us meeting our funding objectives, and which also enables us to consider the impact of possible future stresses and scenarios on those plans.
- There has been a general improvement to scheme funding levels. This and government support over the pandemic has resulted in fewer claims than expected. However, there remains uncertainty about what happens next, notably about the state of the economy and how it is affected by the progress of the COVID-19 pandemic. Known factors which are likely to increase claims include the gradual withdrawal of government economic support, and goods and labour market shortages in some sectors. In some areas we have more certainty such as that provided by the Court of Appeal ruling on the *Hughes* case.

The table below highlights some of the key findings from this section:

Key metric	Result
PoS	95 per cent, up from 83 per cent last year as the funding levels of the PPF and the schemes we protect have improved significantly since March 2020.
Funding horizon and target funding margin	2030 and 10 per cent, unchanged since last year
Key stress	Extreme claims over immediate short term (£12bn deficit): PoS -42pp

Our approach to risk management

Like other financial institutions, we assess our risks using a comprehensive enterprise risk management framework so we can ensure our focus is on the most important risks to our balance sheet. We seek to understand our financial risks using modelling, including sensitivity testing, to help us understand the potential impact of those risks for the future.

In making decisions about our risk management processes the aim is to be proportionate. This means that we always consider the cost of any risk management activities being undertaken and the benefit it will provide to members and levy payers.

We consider our risk under three broad headings – External Environment, Strategic and Funding, and Operational. In *The Purple Book* we focus our attention on the components of those risk types with material financial implications for us, and so do not cover Operational Risk or the many non-financial external environment risks to which we are exposed.

External Environment: risk from the universe

This is the risk that we exist to protect – it is the credit risk that a scheme sponsor fails, possibly resulting in a claim. We are unable to manage the risks in the scheme universe, but must accept them. Therefore, we monitor these risks to understand any implications this may have for us both financially and operationally.

We are protected by TPR, which monitors and sets guidance for DB pension schemes to ensure strong funding levels. This aims to reduce the size of any claim we receive. We liaise with TPR regularly to gain a shared understanding of developments that may change the risk of claims on the PPF, which enables us to understand the possible implications of these expected claims. When monitoring claims, consideration is given both to the potential size of a claim and the likelihood of it occurring. An allowance for these risks is also included within our financial modelling as detailed in the summary of modelling section below. The data in Chapter 4 shows how the size of the aggregate deficit of schemes in deficit (the theoretical maximum risk that we are exposed to) has reduced over the past year. The main contributor to this reduction was market movements in the form of large increases in gilt yields and equity values.

To assess the frequency of claims we monitor key information about employers who sponsor the schemes in the universe. This includes any public credit ratings. Chapter 6 provides information about the historical levels of insolvencies that we have seen.

Economic impacts in the wake of the COVID-19 pandemic and Brexit remain uncertain. The UK Government's COVID-19 support measures are due to be withdrawn and we expect an increase in insolvencies to result. Labour market tightening in some sectors could have knock-on impacts on others. There are also schemes whose deficits are large enough to wipe out our reserves if they claimed, which has always been a key risk for us. We monitor the position of the relevant schemes and their sponsors particularly closely.

Strategic and Funding: risk from our existing assets and liabilities

These risks are similar to those that all financial institutions face, including pension funds and insurance companies. They include the risks of managing our own investment portfolio and the demographic risks we face.

We will accept risk where it adds value to do so or where the costs of hedging are disproportionate. We manage our investment risk by hedging our liabilities closely and by using a bespoke investment strategy which seeks to avoid concentration in the UK economy to which are we exposed via universe risk. This strategy takes a conservative level of investment risk to target a return that exceeds the growth of liabilities over the long term. We accept short-term volatility of our funding level and will ensure that our response is consistent with our long-term funding strategy.

We are willing to accept longevity and other demographic risks; however, we are prepared to transfer this risk to a third party if the risk is significant and hedging costs are reasonable. We use granular estimates of longevity based on socio-economic and geographical factors to ensure that our liability hedging strategy is effectively implemented.

Both investment and demographic risks are potentially impacted in the long term by climate change. We have a comprehensive Responsible Investment strategy which helps mitigate this risk, and are developing approaches to understand the potential impact of climate change on our demographic risk exposure.

Summary of modelling

Members of DB pension schemes rely on the continued financial resilience of the PPF to provide them with a safety net if the sponsors of their schemes become insolvent. The data in *The Purple Book* demonstrates that there is still significant risk in the universe of schemes that we protect.

We use the Long Term Risk Model (LTRM), a Monte Carlo simulation model, to inform our understanding of the funding risks we face, which in turn helps us to manage and protect our finances.

Like any complex modelling exercise, the projections are subject to significant uncertainty and our success ultimately depends on some factors outside of our control. In particular, the model run for the base case makes the simplifying assumption that our investment strategy and broad approach to levy will not change before the funding horizon. Schemes are assumed to transition gradually to a low-risk investment strategy, and to keep paying DRCs to remove underfunding.

During 2020/21 we enhanced the model to provide improved and additional functionality. This will allow us to carry out more comprehensive analysis as part of our review of our funding strategy, being undertaken over 2021/22.

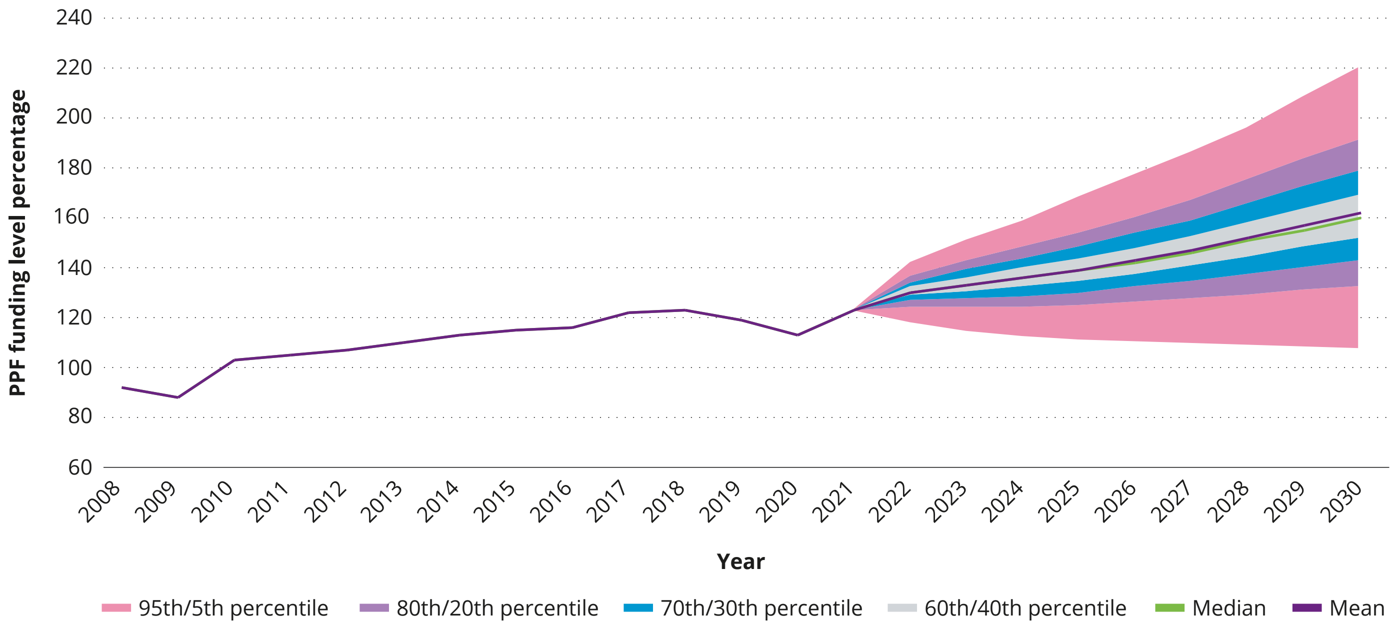
Monitoring our funding objective

Our current long-term funding objective is to be financially self-sufficient by the target funding horizon. The funding horizon is set as the point at which we expect claims to be low relative to the size of the PPF, currently estimated to be year 2030. Self-sufficiency means that we will have accumulated sufficient reserves by the funding horizon to protect against reasonably adverse experience, and we will have little reliance on levy or return-seeking assets. We currently estimate that we need to be 110 per cent funded to ensure self-sufficiency.

The two key metrics that we use to monitor progress against our funding objective are the PoS and downside risk. The PoS is the proportion of scenarios in which we are projected to meet our funding objective, i.e. to have a funding level of 110 per cent or more at 2030. The downside risk is the lowest PPF reserve projected at any time point within the period to the funding horizon measured at the 90th percentile across scenarios.

As at 31 March 2021, the PoS was 95 per cent, and the downside risk was a reserve of £4 billion.

Figure 12.1 | Projections of PPF funding level

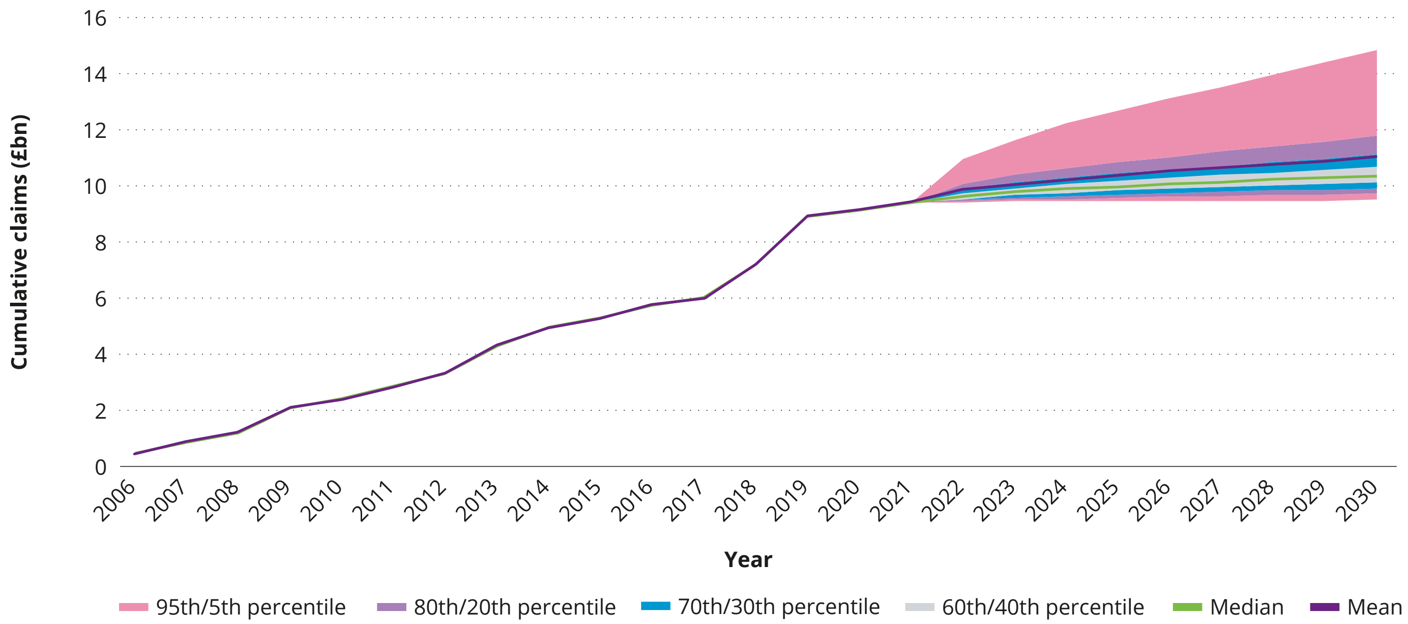


Source: PPF

The fan chart in figure 12.1 shows the history of the PPF funding level as well as the base case projection beyond 2021. It shows that our central projection is for the PPF funding level to rise as investment returns and income from levy exceed claims. As mentioned above, these projections are based on assumptions that our investment strategy and broad approach to levy do not change.

During 2021/22 we will be reviewing our funding strategy and this is likely to result in different central paths for our projections.

Figure 12.2 | Projections of cumulative claims on the PPF



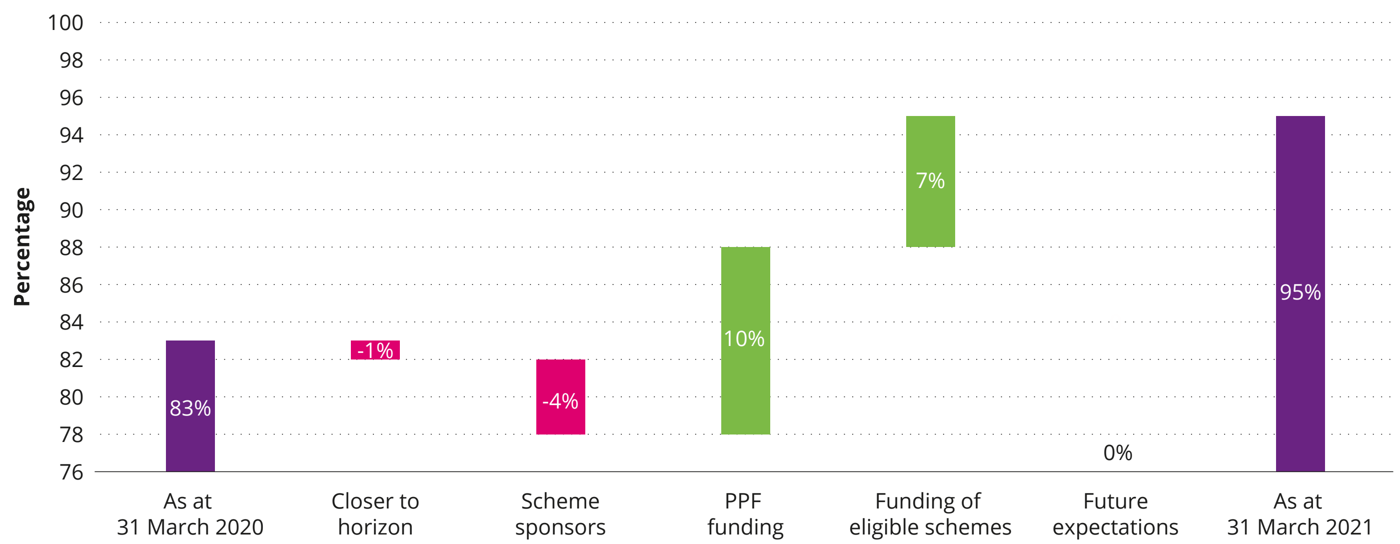
Source: PPF

The fan chart in figure 12.2 shows the history of claims on the PPF as well as modelled future claim levels. As discussed in the section above on the risk management approach at the PPF, the level of claims being made on the PPF in future years is the biggest funding risk we face and is one we cannot control. It is also one of the areas of greatest uncertainty. The most uncertainty is around exactly which schemes might claim, and when those claims might occur. There are favourable scenarios in which we receive fairly small claim volumes, but there is a substantial risk that we could face some very large claims.

Changes over the year

The chart below shows the main changes in the PoS over the year to 31 March 2021.

Figure 12.3 | PoS attribution over the year to 31 March 2021



Note: all figures have been rounded to the nearest whole number.
Source: PPF

The PoS started the year at 83 per cent. This reflected depressed markets at the bottom of the COVID-19-driven market fall, impacting both our own funding and the funding position of the schemes we protect. It also reflected our view that the COVID-19 pandemic would be likely to increase the levels of claims on the PPF due to the worsening position of scheme sponsors.

Over the year, our own funding position and the funding of the schemes we protect have improved significantly. These have been the main drivers for the improvement in the PoS. However, with more detailed information now available about the impact of the COVID-19 pandemic on the economic health of sponsors and their ability to inject money into schemes, we have downgraded our assumptions for sponsors' creditworthiness, which has had a negative impact on the PoS.

Overall, the PoS has improved over the year, up to 95 per cent as at 31 March 2021.

Possible future changes

Like all financial services institutions, including the schemes we protect, the PPF is exposed to other possible circumstances over which we have no or limited influence. The following is a list of some of the most material which we are monitoring at the moment.

COVID-19 pandemic: Although we have not yet experienced an increase in claims attributable to COVID-19, due to government support for businesses, our central assumption is still for an elevated level of claims.

Structural changes to the economy: The COVID-19 pandemic and the effects of Brexit are likely to result in structural changes in the economy, partially cushioned by government policy. Lockdowns and changes to working preferences may affect the demand for certain types of goods and services. Supply is also affected, particularly the availability of component parts and labour in certain sectors. The Bank of England (BoE) has also forecast a rise in CPI inflation, in the short term driven mostly by higher energy prices, and the medium-term outlook for inflation is still uncertain. These issues may adversely impact the viability of sponsoring employers, which affects our biggest risk. The value of our financial asset values may be affected too. We monitor these risks closely.

Commercial consolidators: Interest in consolidator vehicles continues to advance. However, the shape and size of the market are relatively unclear so at this stage we have made no specific adjustments in our financial modelling. TPR has set out guidance for consolidators which indicates that the risk these new models pose to our ability to meet our funding objectives will be limited. At the time of writing no consolidators have been approved by TPR.

TPR's consultation on a new DB funding framework: The second consultation on the drafting of the new code of practice is due to take place in the second half of 2021 at the time of writing. The aim of the new framework is to increase the security of the benefits that have been promised to members of DB schemes, which also has the impact of reducing the likelihood and scale of claims on the PPF.

Climate change: Climate change could, over the medium to long term, have a significant impact on the level of claims we receive. This is due to both impacts on the value of scheme asset portfolios and on sponsoring employer business models. Increased requirements on pension schemes for disclosure are likely to drive changes in approach to investment. Considering the impacts of climate change on our investments is one of our three key priorities within our Responsible Investment strategy. We finalised a climate change policy and strategy in 2019, and have been active in assessing and managing climate-related risks and opportunities across our investment portfolio. We follow the guidance of the Task Force on Climate-related Financial Disclosures (TCFD) in assessing and managing investment decisions around climate-related risks and opportunities. We have engaged with the Paris Aligned Investment Initiative (PAII) and other initiatives to improve our management of these risks. Further information can be found in our Climate Change and Responsible Investment reports[22].

Sensitivities

The LTRM output has been tested for sensitivity to a range of modelling assumptions. A selection of the more significant sensitivity tests is shown in figure 12.4. The sensitivity tests aim to provide an insight into how the PoS might be affected if future experience is not as expected relative to the base case, best-estimate assumptions.

As the PoS has increased between 31 March 2020 and 31 March 2021, the PoS result has become less sensitive to the assumptions used. So the sensitivities presented in figure 12.4 are smaller than the comparable sensitivities from previous years.

22 https://www.ppf.co.uk/sites/default/files/2021-09/PPF_ClimateChangeReport2021.pdf
https://www.ppf.co.uk/sites/default/files/file-2020-08/PPF_32198_RI_Report_2019-20.pdf

Figure 12.4 | Sensitivities

Base case at March 2021	PoS; 83%
Assumption	**Change in PoS**
Sustained higher nominal yields *Nominal gilt yields at time zero are shifted upward by about 2pp, to 2.85% at the 10-year duration and to 2% at the one-year duration. Yields remain at these levels for the full projection period*	+3pp
Lower life expectancy *Modelled mortality is adjusted so that a male aged 63 lives on average one year less*	-3pp
Lower life expectancy *Modelled mortality is adjusted so that there is no allowance for improvements in mortality rates for the next five years*	+1pp
Fall in value of PPF assets *The value of return-seeking assets as at the valuation date (excluding those which are used to value hedge liabilities) is assumed to decrease by 10%*	-3pp
Lower returns on growth assets *Growth asset returns are one percentage point p.a. lower*	-3pp
Extreme claims on the PPF over the immediate short term *Simulated immediate claims totalling £12bn, where PPF starting assets increased by £20bn and PPF starting liabilities increased by £32bn*	-42pp
Higher PPF expenses *Non-investment expenses are assumed to be 10% higher than assumed in the main valuation. (No change to investment nor wind-up expenses.)*	-0pp
Lower PPF levies *The PPF levy collected is lower by 10%*	-0pp

Note: all figures have been rounded to the nearest whole number.

Source: PPF

Appendix – note on historical datasets

Sources of data

The information used in Chapters 3 to 7 and Chapter 12 of this publication comes from three primary sources, as described below.

1. Scheme returns provided to TPR
   Most of the analysis in this year's publication is based on new scheme returns issued in December 2020 and January 2021 and returned by 31 March 2021.

2. Voluntary form reporting
   Electronic forms are available on TPR's website so pension schemes can provide data regarding contingent assets, valuation results on an s179 basis, DRCs and the s179 valuation results following block transfers. More information on DRCs and contingent assets is given in Chapter 8 (Risk reduction).

3. Sponsor failure scores
   From the levy year 2015/16, Experian has given us scores for calculating the PPF levy using the PPF-specific model. This is a statistical model, developed using observed insolvencies among employers and guarantors of DB pension schemes. From the levy year 2018/19, the PPF-specific model was updated. This included the creation of five new scorecards (which replaced the previous scorecards) to categorise companies and assess insolvency probabilities, and the use of credit ratings to inform insolvency probabilities where they exist. More detail on the model can be found on our website[23].

The starting point in establishing the insolvency risk element of the risk-based levy is normally the annual average of a scheme's Experian monthly scores. The average monthly score is then matched to one of 10 levy bands and the corresponding levy rate is used.

The data used in Chapters 9 (PPF levy 2020/21), 10 (Claims and schemes in assessment) and 11 (PPF compensation 2020/21) is derived from the PPF's business operations. The data from Chapter 8 is mostly taken from a variety of public sources, as noted underneath each figure.

The PPF-eligible DB universe and *The Purple Book 2021* dataset

The PPF covers certain DB occupational schemes and DB elements of hybrid schemes. Some DB schemes will be exempt from the PPF, including[24]:
- unfunded public sector schemes;
- some funded public sector schemes, for example, those providing pensions to local government employees;
- schemes to which a Minister of the Crown has given a guarantee;
- schemes with fewer than two members; and
- schemes which began to wind up, or were completely wound up, before 6 April 2005.

Scheme funding

As in previous years' editions of *The Purple Book*, the bulk of our analysis uses funding estimates on an s179 basis. This is, broadly speaking, what would have to be paid to an insurance company to take on PPF levels of compensation, and estimates of this are what we use in the calculation of scheme-based levies. The analysis in Chapter 4 (Scheme funding) uses data that, as far as possible, reflects the position at 31 March 2021 with the s179 assumptions that came into effect on 1 November 2018. This data includes the use of DRCs that have been submitted by schemes for levy purposes[25], which have been added to the asset values submitted in s179 valuations. These DRCs represent the contributions made by the sponsoring employer between the s179 valuation date and 31 March 2021 after allowing for deductions for items such as additional benefit accrual and benefit augmentations.

As in previous years, PPF actuaries have also produced full buy-out estimates (i.e. based on original scheme levels of compensation) of the funding position for *The Purple Book 2021* dataset.

Historical datasets

A dataset is collated for each edition of *The Purple Book*, including all appropriate schemes where scheme return information has been processed and cleaned. In subsequent months, more scheme returns are processed and cleaned and in 2006 and 2007 these were incorporated into the existing dataset to produce an 'extended' dataset. For 2006 and 2007, the increased coverage produced significantly different results to the original datasets. However, since then, datasets have been much larger and the increased coverage made only a small difference. Accordingly, comparisons are made with previous publications as follows:
- *The Purple Book 2006* and *2007* – extended dataset.
- *The Purple Book 2008* to *2020* – original dataset.

Scheme status

Scheme status in this version of *The Purple Book* is split between:
- open schemes, where new members can join the DB section of the scheme and accrue benefits;
- schemes closed to new members, in which existing members continue to accrue benefits;
- schemes closed to future benefit accrual, where existing members can no longer accrue new years of service; and
- schemes that are winding up.

Because many larger employers have adopted the strategy of migrating their pension provision towards DC by opening a DC section in an existing DB scheme, many hybrid schemes may accept new members but no longer allow new (or existing) members to accrue defined benefits.

This has been handled differently across different editions of *The Purple Book*. In *The Purple Book 2006*, 40 per cent of members were in the open category and 25 per cent were categorised as 'part open'. The 'part open' category included a significant number of hybrids for which the DB element was closed. In *The Purple Book 2007*, the 'part open' category was removed and the percentage of schemes classified as open increased compared to *The Purple Book 2006*. Many hybrid schemes which had previously identified themselves as 'part open' now identified themselves as 'open'. In *The Purple Books 2008* and *2009*, we analysed the largest 100 schemes (by membership) in the hybrid category separately, so we could adjust the information provided in the scheme returns and remove potential misinterpretation caused by hybrid schemes with closed DB sections declaring themselves as open.

Improved levels of information on hybrid schemes are now available from the scheme returns and since *The Purple Book 2010* we have been able to adjust hybrid statuses to 'closed' where DB provision is not available to new members. Since 2013, those hybrids which no longer admit new DB accruing members are categorised as 'closed to new members'. In addition, where those schemes have no active DB membership it is assumed that the scheme is closed to future accrual. The changes to the information available and consequent developing approach across the various editions of *The Purple Book* should be taken into account when comparing figures from different editions.

23 For more information see: https://www.ppf.co.uk/current-levy-rules
24 For a more comprehensive list see 'eligible schemes' on our website.
25 For more information see the 2020/21 DRC appendix and guidance on our website. https://www.ppf.co.uk/levy-payers/levy-2020-21

Glossary

Active member
In relation to an occupational pension scheme, a person who is in pensionable service under the scheme.

Annuity
Contract through which payments of a portion of a scheme's liabilities are met by a third party insurance company.

Assessment period
The time when a scheme is being assessed to see if the PPF can assume responsibility for it.

Brexit
The process of the United Kingdom leaving the European Union and the impact on financial markets as well as employers' operations and financial strength.

Buy-out basis
The level of coverage the current assets will provide if all benefits were to be bought out in the name of the individual member with an insurance company. See also: full buy-out.

Claims
When an employer of a DB pension scheme becomes insolvent and the pension does not have sufficient assets to buy out the liabilities. The DB scheme members then become members of the PPF.

Closed (to new benefit accrual)
The scheme does not admit new members. Existing members no longer accrue pensionable service/benefits.

Closed (to new members)
The scheme does not admit new members. Existing members can continue to accrue pensionable service/benefits.

Commercial consolidators and superfunds
These are pension vehicles established to consolidate the DB assets and liabilities of unconnected employers, with no link to the original employer. In some commercial cases the intention is to provide returns to investors.

COVID-19 pandemic
The spread of COVID-19 viral infections across the globe. When discussing this we are referring to the wide-ranging impacts, particularly including the impact of restrictions imposed due to the pandemic on financial markets as well as employers' operations and financial strength.

Dead company
A company that is dissolved.

Deferred member
In relation to an occupational pension scheme, a person (other than an active or pensioner member) who has accrued rights under the scheme but is not currently accruing or being paid benefits under the scheme.

Deficit
A shortfall between what is assessed as needed to pay a scheme's benefits as they fall due (this is the scheme's 'liabilities') and the actual level of assets held by the scheme.

Deficit-Reduction Contribution (DRC)
A one-off (or irregular) contribution made by a scheme sponsor to a pension scheme to reduce the level of deficit.

Defined Benefit (DB)
Benefits are worked out using a formula that is usually related to the members' pensionable earnings and/or length of service. These schemes are also referred to as final salary or salary related pension schemes.

Defined Contribution (DC)
Benefits are based on the amount of contributions paid, the investment returns earned and the amount of pension this money will buy when a member retires. These schemes are also referred to as money purchase pension schemes.

Demographic risks
This is a financial risk to the PPF that members on average have different population-based factors than expected, for example the proportion married or age difference between members and their spouse.

Downside risk
This is calculated as the deficit that is reached or exceeded in 10 per cent of modelled scenarios at some point before reaching the funding horizon.

Enterprise risk management framework
The process of identifying and documenting particular events or circumstances relevant to the organisation's objectives (threats and opportunities), assessing them in terms of likelihood and magnitude of impact, determining a response strategy, and monitoring process.

Experian
A provider of insolvency scores used by the PPF for PPF levy calculations.

Full buy-out
The cost of insuring a pension scheme in the private market. The discount rate applied to liabilities would generally be more prudent than the discount rate applied to s179 valuations. The benefit assumed in private insurance is usually non-capped and thus could be greater than PPF coverage.

Funding horizon
The date at which the PPF is aiming to be financially self-sufficient as this is the point at which we expect claims to be low. Self-sufficiency means that the PPF will have accumulated sufficient reserves by the funding horizon to protect itself against reasonably adverse financial experience.

Gilt yield
The yield, if held to maturity, of a government (non-indexed) bond.

Growth assets
Assets that are expected to give a return in excess of the gilt yields, but have more risk of underperformance, for example equities or property.

Hedging
An investment that is made with the intention of reducing the risk of deterioration in a scheme's funding level.

Hybrid scheme or partial DB scheme
A scheme that can provide defined benefits and DC benefits. An example of a hybrid scheme would be a scheme providing benefits on a DC basis but that is or was contracted out of the state scheme on either a Guaranteed Minimum Pension or Reference Scheme test basis.

Insolvency risk
The risk that a borrower will have to close business due to its inability to service either the principal or interest of its debt.

Insurance company
Insurance companies provide a range of services to pension schemes, including:
- asset investment;
- asset management;
- buy-in and buy-out;
- investment advice and expertise;
- custodian facilities; and
- scheme administration services.

Insurance policy
Investment class: a pooled fund provided by or a deposit administration contract purchased from an insurance company.

Investment portfolio
The group of financial assets that the PPF owns.

Investment strategy
The set of rules, behaviours and procedures, designed to guide the PPF's selection of an investment portfolio after considering our goals, risk tolerance, and future needs for capital.

Longevity risk
This is a financial risk to the PPF that members on average live for longer than the PPF expects, and therefore more funds are required to pay pensions for longer.

LTRM
Long Term Risk Model

Net funding position
Sum of assets less sum of liabilities, or sum of scheme funding positions. In a pool of schemes where schemes in deficit outweigh schemes in surplus, there is an aggregate deficit.

ONS
Office for National Statistics

Open scheme
The scheme continues to accept new members, and benefits continue to accrue.

Pensioner member
A person who is currently receiving a pension from the scheme or from an annuity bought in the trustee's name.

Pension Protection Fund (PPF)
A statutory corporation run by the Board of the Pension Protection Fund, established under the Pensions Act 2004.

The Pensions Regulator (TPR)
The UK regulator of work-based pension schemes; an executive non-departmental public body established under the Pensions Act 2004.

PoS
Probability of Success

Pp
Percentage points

PPF levy
This is the annual amount that a pension scheme is charged by the PPF. It is composed of a scheme-based levy and a risk-based levy. It is similar to an insurance premium.

Repurchase agreement (repo)
The sale of a security combined with an agreement to repurchase the same security at a higher price at a future date.

Risk-based levy
See PPF levy. Calculated on the basis of a pension scheme's deficit and insolvency risk of the sponsoring employer.

Scheme-based levy
See PPF levy. Calculated on the basis of s179 liabilities and the number of members in the pension scheme.

Scheme funding position
The difference between the assets and liabilities of a pension scheme (scheme deficit if negative, scheme surplus if positive).

Scheme member
In relation to an occupational pension scheme, a scheme member is any person who:
- is an active member;
- is a deferred member;
- is a pensioner member;
- has rights due to transfer credits under the scheme; or
- has pension credit rights under the scheme.

This includes scheme members whose only entitlements are equivalent pension benefits (EPBs), as those rights were earned through pensionable employment. Members (for occupational and personal schemes) do not include dependants of members. Those whose only entitlements are lump sum benefits payable upon death are also not included.

Section 179 (s179) valuation
To calculate the risk-based pension protection levy the Board of the PPF must take account of scheme underfunding. To achieve consistency in determining underfunding, schemes can complete a PPF valuation (s179). This valuation will be based on the level of the scheme's assets and liabilities. The liabilities will be based on the scheme benefits taking into account key features of the levels of compensation paid by the Board of the PPF as set out in Schedule 7 of the Pensions Act.

Stress scenario
Changes simultaneously applied to a number of assumptions in the LTRM on asset returns, bond yields and insolvency experience.

Stochastic model
Distributions of potential outcomes are derived from a large number of simulations (stochastic projections) which reflect the random variation in the inputs.

Swap
Investment: a contract calling for the exchange of payments over time. Often one payment is fixed in advance and the other is floating, based on the realisation of a price or interest rate.

Target funding margin
The percentage of assets over the liability value that we are aiming to achieve at the funding horizon.

Technical Provisions (TPs)
The TPs are a calculation made by the actuary of the assets needed for the scheme to meet the statutory funding objective. These include pensions in payment (including those payable to survivors of former members) and benefits accrued by other members and beneficiaries, which will become payable in the future.

Trustee
A person or company, acting separately from a scheme's employer, who holds assets in trust for the beneficiaries of the scheme. Trustees are responsible for making sure that the pension scheme is run properly and that members' benefits are secure.

Winding up/wound up
After the wind-up is complete (the scheme is wound up), there will be no assets or liabilities left in the scheme, and the scheme will cease to exist as a legal entity. Winding up describes the process of reaching wind-up from the normal ongoing status. To make sure that members will still receive benefits, there are several options:
- transferring pension values to another pension arrangement;
- buying immediate or deferred annuities; or
- transferring the assets and liabilities of the scheme to another pension scheme.

The scheme must be wound up in accordance with the scheme rules and any relevant legislation.

Charts and tables

Pension
Protection
Fund

The Pension Protection Fund
Renaissance
12 Dingwall Road
Croydon
CR0 2NA
www.ppf.co.uk