

4. Scheme funding

Summary

This chapter covers funding on an s179 basis as at 31 March 2020⁷. 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, which has been improved this year to better reflect the difference in benefits and this updated methodology has been applied to the figures for all previous years⁸. Some of the statistics summarising these calculations are shown below:

Item	<i>The Purple Book</i>	
	31 March 2020	31 March 2019
Net s179 funding position (£bn)	90.7 deficit	12.7 deficit
s179 liabilities (£bn)	1,791.3	1,628.0
Assets (£bn)	1,700.6	1,615.3
Funding ratio:		
s179 basis	94.9%	99.2%
Estimated full buy-out basis	71.8%	71.5%

The following table sets out how some of those 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 2020
10-year fixed interest gilt yield	-0.67pp
15-year fixed interest gilt yield	-0.70pp
20-year fixed interest gilt yield	-0.71pp
5–15-year index-linked gilt yield	-0.28pp
FTSE All-Share Index (TR)	-18.45%
FTSE All-World Ex-UK Index (TR)	-5.54%

pp = percentage point(s)

TR = total return

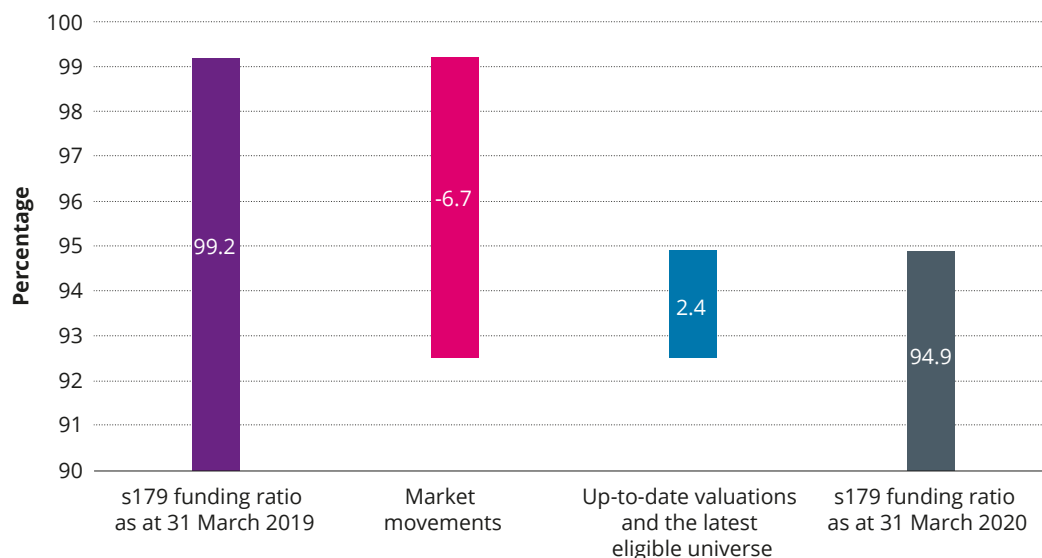
⁷ Latest effective s179 assumptions guidance is available on the PPF website.

⁸ The updated methodology has resulted in an increase of around eight per cent to the historical estimated full buy-out liabilities we have previously published.

4. Scheme funding continued

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

Source: PPF



- The 4.3 percentage point decrease in the s179 funding ratio over the year to 31 March 2020 can be broken down as follows:
 - The impact of market movements has resulted in a 6.7 percentage point decrease in the s179 funding ratio. This was due to lower gilt yields driving up liability values by more than the corresponding increase in asset values as well as decreases in the values of growth assets, particularly equities.
 - Offsetting this was a 2.4 percentage point increase in the s179 funding ratio from adopting the new *Purple Book 2020* dataset, which includes more up-to-date scheme valuations.
- The s179 funding ratio is slightly lower at 31 March 2020 to 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 70 per cent and 185 per cent on UK and global equities respectively) and increases in bond values, 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 11 percentage points to 21 per cent.

Overall funding

Figure 4.1 | Key funding statistics as at 31 March 2020

The net s179 funding position of the schemes in *The Purple Book 2020* dataset at 31 March 2020 was a deficit of £90.7 billion, corresponding to a funding ratio of 94.9 per cent.

Source: PPF

	s179	Estimated full buy-out
Total number of schemes	5,318	5,318
Total assets (£bn)	1,700.6	1,700.6
Total liabilities (£bn)	1,791.3	2,369.1
Net funding position (£bn)	-90.7	-668.5
Aggregate funding ratio	94.9%	71.8%
Number of schemes in deficit	3,371	4,896
Number of schemes in surplus	1,947	422
Net funding position for schemes in deficit (£bn)	-229.1	-680.9
Net funding position for schemes in surplus (£bn)	138.4	12.4

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

Funding deteriorated over the year as total liabilities increased by 10 per cent, while total assets increased by only 5.3 per cent. The deficit of schemes in deficit worsened from £159.8 billion to £229.1 billion.

Source: PPF

Year	Number of schemes	Total assets (£bn)	s179 liabilities				
			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%	-46.8	96.5
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

4. Scheme funding continued

While the aggregate s179 funding ratio at 31 March 2020 is slightly lower at 31 March 2020 than at 31 March 2006, liability values have increased by around £1 trillion and assets have increased by a similar amount.

Source: PPF

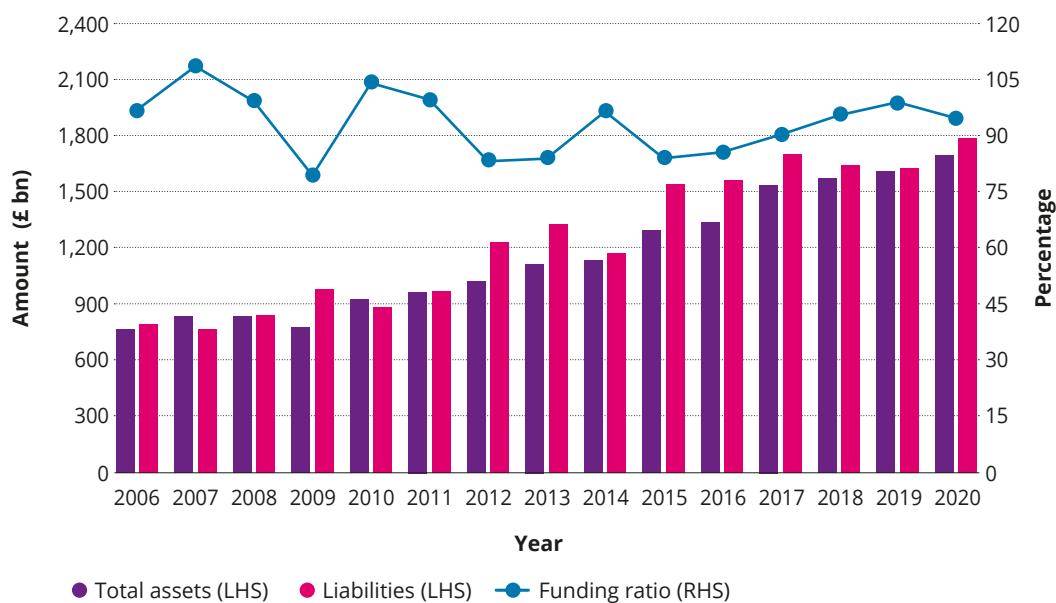


Figure 4.3 | Current and historical funding figures on an estimated full buy-out basis

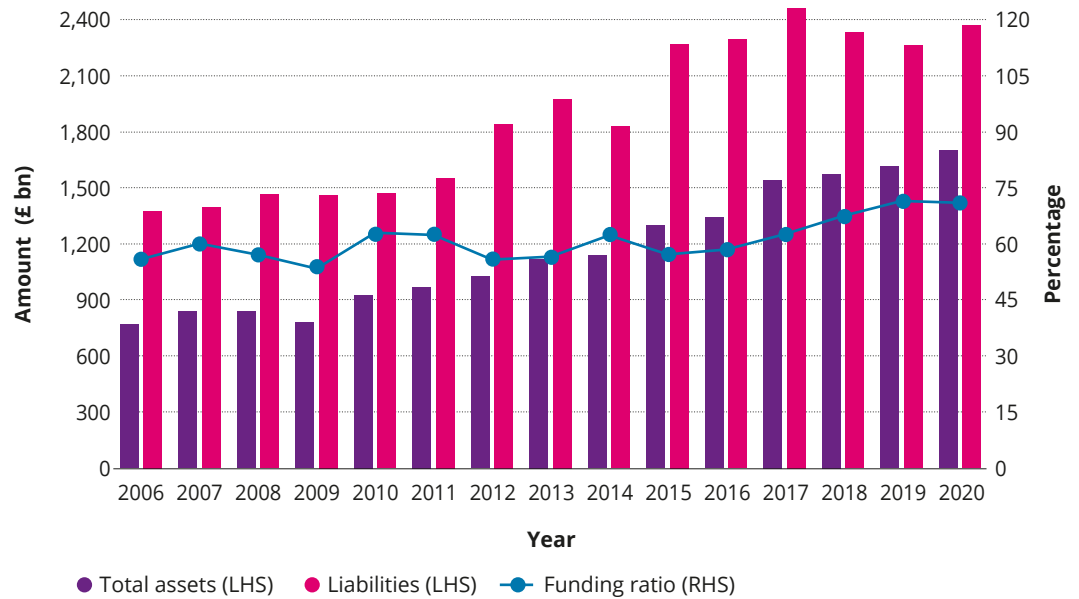
In contrast to the decrease in the aggregate s179 funding ratio, the aggregate full buy-out funding ratio hardly changed from 71.5 per cent to 71.8 per cent over the year to 31 March 2020. This is because of a fall in inflation expectations over the year, which is more significant for buy-out than for s179 liabilities.

Year	Total assets (£bn)	Estimated full buy-out			Aggregate funding ratio
		Liabilities (£bn)	Net funding position (£bn)		
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%	

Since 2006, there has been a significant increase in the aggregate full buy-out funding ratio, from 55.9 per cent to 71.8 per cent at 31 March 2020.

Source: PPF

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



The s179 funding ratio has fluctuated over time, from 97.1 per cent at 31 March 2006 to 94.9 per cent at 31 March 2020. Over the same period, the estimated full buy-out funding ratio has increased significantly, from 55.9 per cent to 71.8 per cent.

Analysis of funding by scheme membership size

Figure 4.4 | s179 funding ratios by size of scheme membership as at 31 March 2020

The best funded schemes were the smallest, with an aggregate s179 funding ratio of 99.6 per cent for schemes with fewer than 100 members.

Source: PPF

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

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	1,936	17.2	17.3	-0.1	99.6%	97.6%
100 to 999	2,315	150.7	161.3	-10.6	93.4%	89.6%
1,000 to 4,999	718	276.1	297.7	-21.6	92.7%	90.7%
5,000 to 9,999	161	208.1	220.6	-12.5	94.3%	93.4%
10,000 and over	188	1,048.5	1,094.4	-45.9	95.8%	99.0%
Total	5,318	1,700.6	1,791.3	-90.7	94.9%	93.1%

* 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 11 schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. Almost all of these schemes were small, with total assets of £0.2 billion.

4. Scheme funding continued

Figure 4.5 | Distribution of s179 funding ratios by size of scheme membership as at 31 March 2020

The smallest and largest schemes tend to be better funded on an s179 basis compared with mid-size schemes.

Source: PPF

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

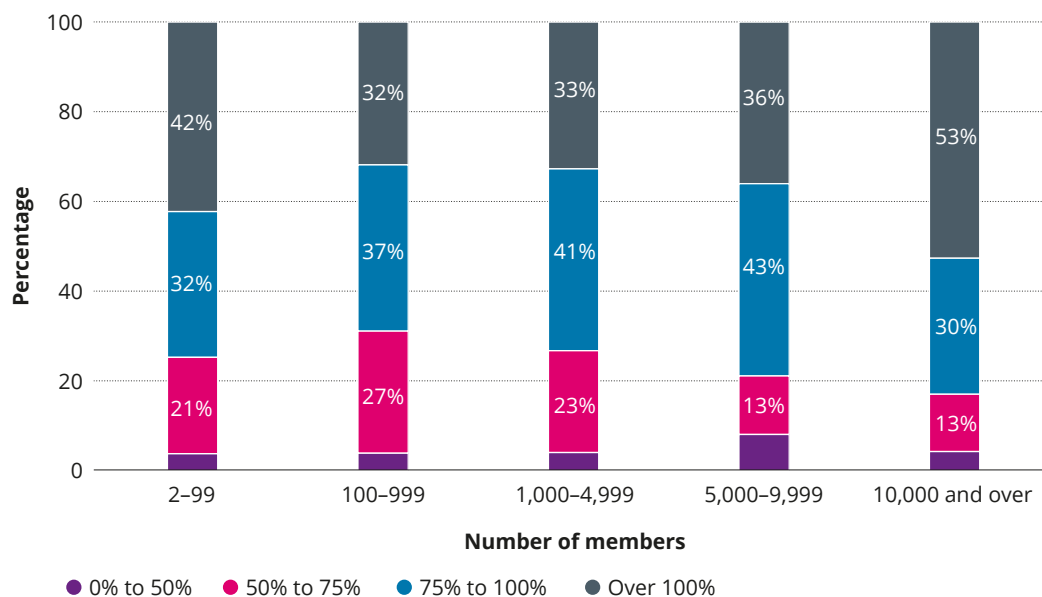


Figure 4.6 | Estimated full buy-out levels by size of scheme membership as at 31 March 2020

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

Source: PPF

Note: the columns may not sum to the totals because of rounding.

Members (number)	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
2 to 99	1,936	17.2	23.7	-6.5	72.7%	73.0%
100 to 999	2,315	150.7	217.7	-67.0	69.2%	67.1%
1,000 to 4,999	718	276.1	391.3	-115.3	70.5%	69.4%
5,000 to 9,999	161	208.1	289.5	-81.4	71.9%	69.2%
10,000 and over	188	1,048.5	1,446.9	-398.4	72.5%	73.9%
Total	5,318	1,700.6	2,369.1	-668.5	71.8%	69.9%

* Eleven schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. Almost all of these schemes were small, with total assets of £0.2 billion.

Figure 4.7 | Distribution of estimated full buy-out funding ratios by size of scheme membership as at 31 March 2020

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

Source: PPF

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



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 2020

The most mature schemes have an aggregate s179 funding ratio that is around 60 percentage points higher than the least mature schemes.

Source: PPF

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

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	1,263	208.2	276.4	-68.2	75.3%	78.7%
Between 25% and 50%	2,640	1,037.7	1,098.8	-61.1	94.4%	90.1%
Between 50% and 75%	1,153	415.2	386.7	28.5	107.4%	107.9%
Between 75% and 100%	262	39.5	29.4	10.0	134.1%	128.1%
Total	5,318	1,700.6	1,791.3	-90.7	94.9%	93.1%

* Eleven schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. Almost all of these schemes were small, with total assets of £0.2 billion.

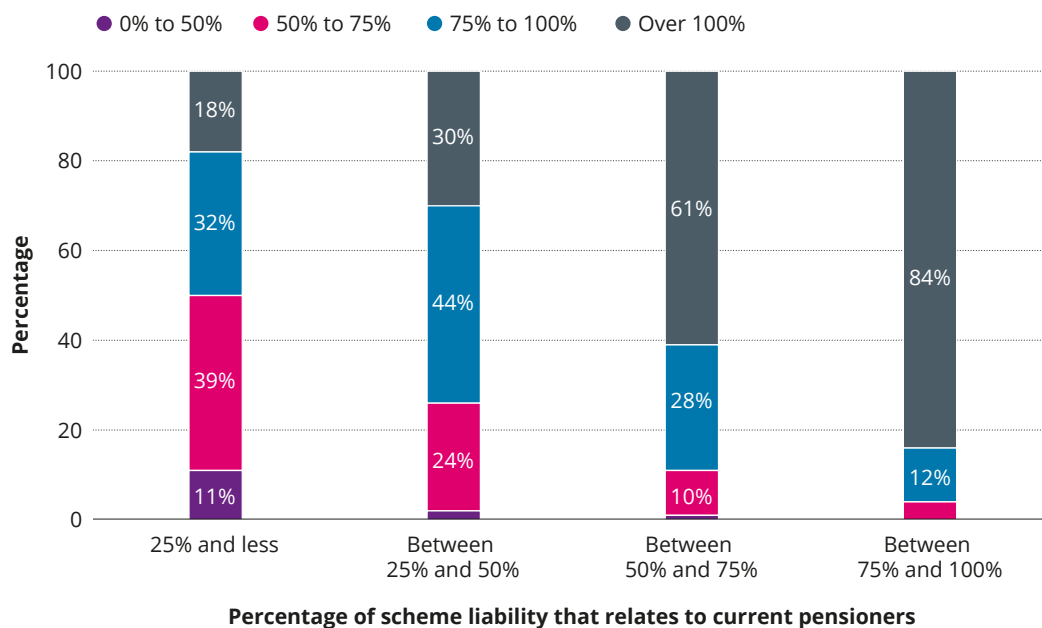
4. Scheme funding continued

Figure 4.9 | Distribution of funding ratios on an s179 basis by scheme maturity as at 31 March 2020

Funding ratios improve with scheme maturity, with 84 per cent of the most mature schemes being overfunded on an s179 basis.

Source: PPF

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



Analysis of funding by scheme status

Figure 4.10 | Analysis of s179 funding ratios by scheme status as at 31 March 2020

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

Source: PPF

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

Status	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
Open	593	335.0	414.7	-79.7	80.8%	85.1%
Closed to new members	2,177	932.0	929.1	2.9	100.3%	94.6%
Closed to future accrual	2,455	425.2	440.9	-15.7	96.4%	92.9%
Winding up	93	8.4	6.6	1.7	125.8%	112.7%
Total	5,318	1,700.6	1,791.3	-90.7	94.9%	93.1%

* Eleven schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. Almost all of these schemes were small, with total assets of £0.2 billion.

Figure 4.11 | Distribution of schemes by s179 funding ratios within scheme status groups as at 31 March 2020

Three quarters of open schemes have an s179 funding ratio below 100 per cent.

Source: PPF

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

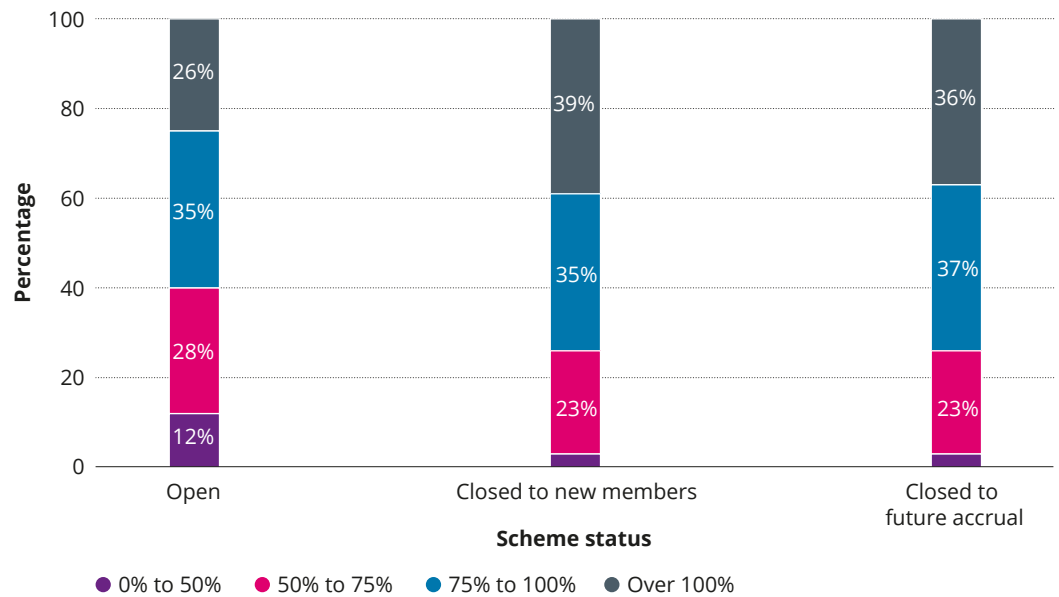


Figure 4.12 | Analysis of estimated full buy-out funding ratios by scheme status as at 31 March 2020

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

Source: PPF

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

Status	Number of schemes	Total assets (£bn)	Liabilities (£bn)	Net funding position (£bn)	Aggregate funding ratio	Simple average funding ratio*
Open	593	335.0	525.7	-190.6	63.7%	67.1%
Closed to new members	2,177	932.0	1,245.8	-313.8	74.8%	70.8%
Closed to future accrual	2,455	425.2	588.7	-163.5	72.2%	69.2%
Winding up	93	8.4	9.0	-0.6	93.2%	87.3%
Total	5,318	1,700.6	2,369.1	-668.5	71.8%	69.9%

* Eleven schemes with funding ratios over 200 per cent (on an estimated full buy-out measure) were excluded from the simple averages to avoid distortions. Almost all of these schemes were small, with total assets of £0.2 billion.

4. Scheme funding continued

Figure 4.13 | Distribution of schemes by estimated full buy-out funding ratios within scheme status groups as at 31 March 2020

Almost a quarter of open schemes have an estimated full buy-out funding ratio of less than 50 per cent.

Source: PPF

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

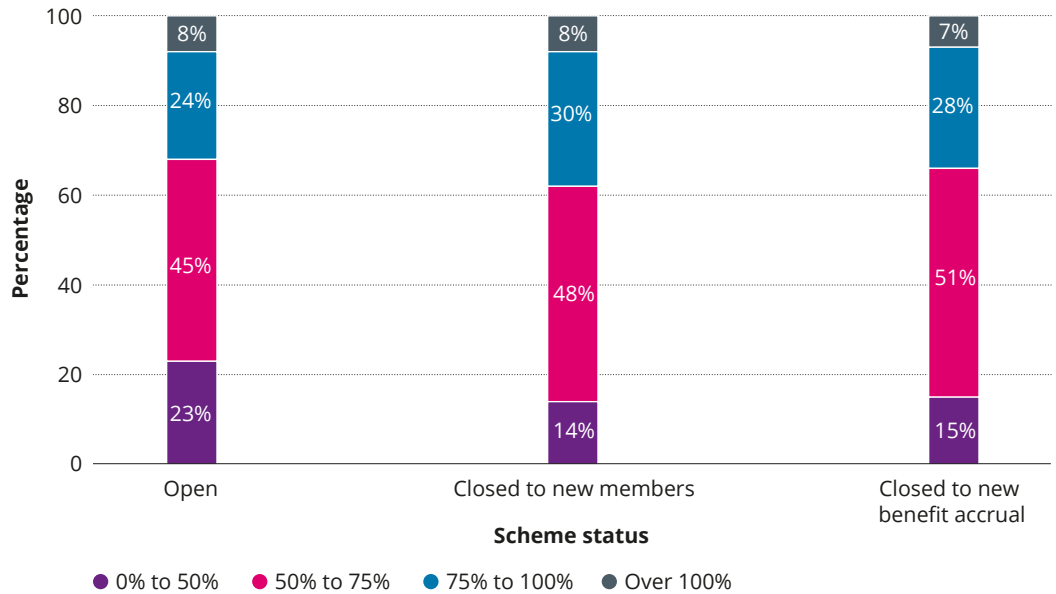


Figure 4.14 | s179 liabilities by member status in current and historical Purple Book datasets

The proportion of liabilities that relates to actives has reduced by 11 percentage points over the last 10 years.

Source: PPF

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

