



The purple book

2007

DB pensions universe risk profile

Pension
Protection
Fund

The Pensions
Regulator 



Contents

1	Executive summary	page 14
1.1	Introduction	14
1.2	Overview	15
2	The data	page 22
2.1	Summary	22
2.2	Introduction	23
2.3	The PPF-eligible DB universe	24
2.4	Primary sources	27
	<i>Scheme returns provided to the Pensions Regulator</i>	27
	<i>Voluntary form reporting</i>	27
	<i>Insolvency failure scores supplied by Dun & Bradstreet (D&B)</i>	27
2.5	Funding estimates	28
3	Scheme demographics	page 30
3.1	Summary	30
3.2	Introduction	30
3.3	Scheme status	30
	<i>Definition of status categories</i>	30
	<i>Distributions of schemes by status</i>	31
3.4	Scheme membership	34
	<i>Analysis of scheme status by scheme size</i>	35
	<i>Scheme membership</i>	36
	<i>Analysis of membership by scheme size</i>	37
3.5	Schemes in the sample by sponsor type and industry	38
4	Scheme funding	page 40
4.1	Summary	40
4.2	Introduction	40
4.3	Analysis of funding levels	42
	<i>Overall funding level</i>	42
	<i>Analysis by size of scheme membership</i>	43
	<i>Analysis by scheme maturity</i>	49
	<i>Analysis by scheme status</i>	53
	<i>Analysis by employer industry</i>	56

5	Funding sensitivities	page 60
5.1	Summary	60
5.2	Introduction	60
5.3	Movements in asset values and discount rates	61
	<i>Aggregate s179 funding</i>	61
	<i>Schemes in s179 deficit</i>	64
	<i>Rules of thumb for the aggregate s179 funding position</i>	66
5.4	Deficit reduction payments	70
5.5	Benefit and inflation effects	71
5.6	Impact of changes in expected longevity	72
6	Insolvency risk	page 78
6.1	Summary	78
6.2	Introduction	78
6.3	Measuring insolvency risk	79
6.4	Insolvency risk and the PPF	80
	<i>Changes in insolvency probability</i>	80
	<i>Insolvency probability and size</i>	82
	<i>Insolvency probability by industry</i>	83
6.5	UK corporate sector trends	83
7	Asset allocation	page 86
7.1	Summary	86
7.2	Introduction	86
7.3	Scheme size	87
7.4	Funding level	88
7.5	Scheme maturity	89
7.6	Insolvency probability	90
7.7	Distribution of assets across schemes	91
7.8	Recent trends	93
7.9	Liability driven investment	96



Contents

8	Long-term risk and short-term risk concentration	page 98
8.1	Summary	98
8.2	Introduction	98
8.3	Long-term risk	99
8.4	Short-term risk concentration	101
8.5	Grouping of insolvency probabilities and funding	102
8.6	Insolvency risks of schemes in the sample	103
8.7	Schemes in deficit	106
	<i>Short-term risk concentration for schemes in deficit</i>	108
	<i>Short-term risk concentration by industry</i>	112
9	Levy payments to the PPF 2006-2007	page 116
9.1	Summary	116
9.2	Introduction	116
9.3	Levy quantum	117
9.4	Levy by scheme size	118
9.5	Levy by insolvency group	119
9.6	Levy by funding level	121
9.7	Schemes paying no risk-based levy	122
9.8	Levy paid by largest levy payers	124
9.9	Capped schemes	125
9.10	Levy paid by industry category	126
10	Schemes in the PPF assessment process	page 128
10.1	Summary	128
10.2	Introduction	129
10.3	Scheme demographics	132
	<i>Members</i>	134
10.4	Funding level	135
10.5	Asset allocation	136
10.6	Industry classification	138

Annex

page 140

Comparing the Purple 2006 dataset with the
DB universe as at March 2006

A.1	Summary	140
A.2	Introduction	140
A.3	Scheme demographics	141
A.4	Scheme funding	143
A.5	Asset allocation	145
A.6	Short-term risk concentration	147
A.7	Data tables	149
	<i>Chapter three data tables</i>	149
	<i>Chapter four data tables</i>	153
	<i>Distribution of schemes and memberships by status</i>	158



Charts and tables

2 The data

Table	Subject	Page
2.1	Distribution of schemes by scheme size (number of members)	25
2.2	Distribution of s179 liabilities (£bn) by scheme size (number of members)	25

3 Scheme demographics

Chart	Subject	Page
3.1	Comparing schemes by scheme status	32
3.2	Closed scheme trends (Purple 2007)	33
3.3	Percentage distribution of memberships by scheme status (Purple 2007)	34
3.4	Comparing memberships by scheme status	34
3.5	Percentage distribution of scheme status by scheme size (Purple 2007)	35
3.6	Percentage distribution of scheme status by scheme size (extended Purple 2006 dataset)	35
3.7	Percentage distribution of member types in dataset (Purple 2007)	36
3.8	Percentage distribution of member types by scheme size (Purple 2007)	37
3.9	Percentage distribution of member types by scheme size (extended Purple 2006 dataset)	37
3.10	Comparison of schemes by industry classification	38
3.11	s179 liabilities by industrial sector	39
3.12	Proportion of GDP by industry	39

4 Scheme funding

Chart	Subject	Page
4.1	Distribution of s179 assets and liabilities at 31 March 2006 by size of scheme membership	43
4.2	Distribution of s179 assets and liabilities at 30 March 2007 by size of scheme membership	44
4.3	Distribution of s179 funding levels as at 31 March 2006 by size of scheme membership	46
4.4	Distribution of s179 funding levels as at 30 March 2007 by size of scheme membership	47
4.5	Distribution of buy-out funding levels at 31 March 2007	48
4.6	Distribution of s179 assets and liabilities at 31 March 2006	49
4.7	Distribution of s179 assets and liabilities at 30 March 2007	49
4.8	Distribution of funding levels on s179 basis by scheme maturity at 31 March 2006	52
4.9	Distribution of funding levels on s179 basis by scheme maturity at 30 March 2007	52
4.10	Distribution of s179 assets and liabilities at 31 March 2006 by scheme status	53
4.11	Distribution of s179 assets and liabilities at 30 March 2007 by scheme status	53
4.12	Distribution of s179 funding levels at 31 March 2006 by scheme status	55
4.13	Distribution of s179 funding levels at 30 March 2007 by scheme status	55
4.14	s179 assets and liabilities by industry as at 31 March 2006	56
4.15	Distribution of s179 liabilities and assets by industry as at 30 March 2007	57
4.16	Distribution of s179 funding levels as at 31 March 2006 by industry	58
4.17	Distribution of s179 funding levels by industry as at 30 March 2007	59



Charts and tables

4 Scheme funding... continued

Table	Subject	Page
4.1a	Overall funding levels as at 30 March 2007 (based on the Purple 2007 dataset)	42
4.1b	Overall funding levels as at 31 March 2006 (based on the Purple 2007 dataset)	43
4.2	s179 funding levels as at 31 March 2006 by scheme size	45
4.3	s179 funding levels as at 30 March 2007 by scheme size	45
4.4	Estimated full buy-out funding levels at 30 March 2007	48
4.5	Analysis of s179 funding levels as at 31 March 2006 by scheme maturity	50
4.6	Analysis of s179 funding levels as at 30 March 2007 by scheme maturity	50
4.7	Analysis of s179 funding levels at 31 March 2006 by scheme status	54
4.8	Analysis of s179 funding levels at 30 March 2007 by scheme status	54

5 Funding sensitivities

Chart	Subject	Page
5.1	Estimated aggregate s179 assets less aggregate s179 liabilities of pension schemes in the dataset	61
5.2	Movements in stock markets and gilt yields	62
5.3	Movement in s179 assets and liabilities of schemes in the Purple 2007 dataset	63
5.4	Estimated aggregate s179 assets less aggregate s179 liabilities of pension schemes in the Purple 2007 dataset (excluding schemes in surplus)	64
5.5	Movement in s179 assets and liabilities of schemes in the Purple 2007 dataset (excluding schemes in surplus)	65
5.6	Estimated number of schemes in deficit on a s179 basis each month	65
5.7	Special contributions	71
5.8	Life expectancy assumptions used by FTSE 100 companies	73
5.9	Life expectancy assumptions used by FTSE 100 companies: 2006/2007 comparison	74
5.10	United Kingdom cohort life expectancy for males and females at 65	75
5.11	Effect on surplus of changes in mortality assumptions	77
Table	Subject	Page
5.1	Analysis of expected movement in s179 funding levels from a base aggregate surplus of £53bn at 30 March 2007	66
5.2	Analysis of expected movement in s179 assets from a base of 100 at 30 March 2007	67
5.3	Analysis of expected movement in s179 liabilities from a base of 100 at 30 March 2007	67
5.4	Analysis of expected movement in s179 funding levels from a base total deficit of £34bn as at 30 March 2007, excluding schemes in surplus	68
5.5	Analysis of expected movement in s179 assets from a base of 100 at 30 March 2007, excluding schemes in surplus	69
5.6	Percentage distribution of allowance for the cohort effect	75
5.7	Impact on liability values of alternative projections	76

Charts and tables

6 Insolvency risk

Chart	Subject	Page
6.1	Average insolvency probability by scheme size	80
6.2	Average insolvency probability by s179 liability level (all schemes)	81
6.3	Average insolvency probability by s179 liability level (schemes in deficit and schemes in surplus)	81
6.4	Average insolvency probability by industry	82
6.5	UK GDP growth and corporate profitability	83
6.6	UK corporate insolvencies	84
6.7	UK corporate insolvencies and GDP	84

7 Asset allocation

Chart	Subject	Page
7.1	Unweighted average s179 asset allocation of schemes subdivided by scheme size (measured by value of assets)	87
7.2	Weighted average asset allocation by s179 funding level	88
7.3	Weighted average asset allocation of schemes by current pensioner liabilities as a percentage of total liabilities	89
7.4	Weighted average asset allocation of schemes arranged by insolvency score	90
7.5	Distribution of equity holdings	91
7.6	Distribution of gilts and fixed income holdings	92
7.7	Asset allocation by percentage share and asset class	94
7.8	Pension schemes' investment in equities	95
Table	Subject	Page
7.1	Asset allocation for all schemes in Purple 2006 and Purple 2007	87

8 Long-term risk and short-term risk concentration

Chart	Subject	Page
8.1	Central scenario run November 2006 for five-year period	99
8.2	Representation of the factors influencing the LTRM and the levy	101
8.3	Average implied insolvency probability by insolvency group	104
8.4	Percentage of schemes by insolvency group	104
8.5	Percentage of total scheme s179 liabilities by insolvency group	105
8.6	Funding position on a s179 basis by insolvency group	106
8.7	Percentage of schemes in surplus and deficit on a s179 basis by insolvency group	106
8.8	s179 funding position by asset group	107
8.9	Share of s179 surplus and s179 deficit by asset group	108
8.10	Combined risk as a percentage of total	110
8.11	Combined risk by industry	112
8.12	Average s179 deficits by industry (for schemes in deficit)	113
8.13	Average insolvency probability by industry (for schemes in deficit)	113
8.14	Average combined risk per scheme by industry	114
8.15	Average combined risk per member by industry	115

Table	Subject	Page
8.1	Claims on the PPF (s179 basis) - first year	100
8.2	Insolvency groups	103
8.3	Underfunding groups	103
8.4	Combined risk by insolvency and underfunding group	109
8.5	Combined risk by insolvency and underfunding group as percentage of total	109
8.6	Average combined risk per scheme (underfunded schemes)	111

Charts and tables

9 Levy payments to the PPF 2006-2007

Chart	Subject	Page
9.1	Levy by scheme size	118
9.2	Levy by insolvency group	119
9.3	Levy payments as a proportion of total assets by insolvency group	119
9.4	Levy per member by insolvency group	120
9.5	Percentage of scheme-based and risk-based levy by insolvency group	120
9.6	Levy per member by funding group	121
9.7	Percentage of scheme-based and risk-based levy by funding group	122
9.8	Number of schemes paying no risk-based levy	122
9.9	Percentage of schemes in each insolvency group paying no risk-based levy	123
9.10	Distribution of levy payments	124
9.11	Percentage of total levy paid by largest 100 levy-paying schemes	124
9.12	Schemes capped by insolvency group	125
9.13	Schemes capped by funding group	125
9.14	Total levy by industry sector	126
9.15	Levy per member by industry sector	127
Table	Subject	Page
9.1	Funding groups	121
9.2	Schemes paying no risk-based levy	123
9.3	Capped schemes	126

10 Schemes in the PPF assessment process

Chart	Subject	Page
10.1	Number of qualifying insolvency events by date of insolvency	130
10.2	Total s179 deficit entering an assessment period (quarterly)	131
10.3	Percentage of schemes in each liability group	132
10.4	Percentage of schemes and percentage of s179 liabilities by liability group	133
10.5	Number of schemes in assessment by scheme size	134
10.6	Maturity by membership size	134
10.7	Average funding level on a s179 basis	135
10.8	Total s179 deficit of schemes in deficit by liability size	135
10.9	Asset allocation	136
10.10	Asset allocation by asset size	137
10.11	Distribution of schemes by industry classification	138
Table	Subject	Page
10.1	Scheme sponsors by industry	139

Annex

Chart	Subject	Page
A.1	Percentage distribution of schemes by status	141
A.2	Distribution of member types in sample	141
A.3	Percentage distribution of members by scheme status	142
A.4	Schemes in deficit and in surplus on a s179 basis	143
A.5	Percentage of schemes in deficit and in surplus on a s179 basis by asset size	144
A.6	Average asset allocation for all schemes	145
A.7	Weighted average asset allocation for all schemes	145
A.8	Average asset allocation of schemes by scheme size (according to level of assets)	146
Table	Subject	Page
A.1	Combined risk of schemes in deficit by insolvency and funding group	147
A.2	Combined risk of schemes in deficit as percentage of total	148

Executive summary

1.1 Introduction

This is the second edition of the Pensions Universe Risk Profile (the Purple Book), a joint annual publication by the Pension Protection Fund (the PPF) and the Pensions Regulator (the regulator) which focuses on the risks faced by defined benefit (DB) pension schemes, predominantly in the private sector.

The key aim of this publication is to increase knowledge and help understanding of DB schemes in the UK. Information on such schemes had, before the Purple Book 2006, been limited, with relatively little known about small and medium sized schemes in particular.

Much of the analysis of the Purple Book 2007 ('Purple 2007') is based on new information from scheme returns provided to the Pensions Regulator which were issued in autumn 2006, covering almost 5,900 PPF-eligible DB schemes - some 76% of the total number and some 90% of estimated total liabilities. This is a little larger than the dataset used last year which was based on almost 5,800 schemes covering 74% of all schemes and 85% of liabilities.

Comparisons are made with the Purple Book 2006 ('Purple 2006') and with an extended Purple 2006 database covering almost 7,800 schemes (probably close to the universe of PPF-eligible schemes). The information on a further 2,000 schemes became available between autumn 2006 and summer 2007 as more scheme returns were processed and cleaned as part of the PPF levy invoicing and collection processes. Purple 2007 also includes comparisons of the position of DB schemes in the 2007 dataset both at 30 March 2007 and at 31 March 2006. This publication puts all this information into context by using other data sources to look at trends in key variables.

The Purple Books have been based on the most comprehensive datasets extracted from the DB pensions universe to date, representing a step change in available information. The publication's focus is on the risks of scheme members not receiving promised benefits and of calls on the PPF. These in turn depend on two key elements - the risk of the sponsoring employer becoming insolvent and the extent of scheme underfunding.

This annual publication will evolve over time. For example, the Purple Book 2007 includes new chapters on levy payments to the PPF, and on schemes that have entered the PPF assessment period, and entered the PPF itself. It also includes 2006/2007 comparisons. As time goes on the Purple data will provide important information on trends in DB pension schemes. Comments and suggestions for improvement of the Purple Book are again welcome.

1.2 Overview

The contents of this study are summarised below.

2 The data

- In Purple 2006, the PPF-eligible defined benefit (DB) universe was estimated to be 10,800, while the analysis covered a sample of 5,772 PPF-eligible schemes.
- The 5,772 schemes have now been augmented to produce an extended Purple 2006 dataset, covering a total of 7,751 schemes, a figure that is thought to be close to the PPF-eligible universe.
- Comparisons of some of the key analyses using the Purple 2006 dataset and the extended Purple 2006 dataset show that most of the findings using aggregate and weighted averages are little affected, but there are large effects on simple averages given the inclusion of more small schemes, and on the proportions of schemes by status.
- In Purple 2007 we have utilised a dataset of 5,892 PPF-eligible schemes, covering around 76% of the universe of schemes and 90% of estimated liabilities (comparable figures for the Purple 2006 dataset are 74% and 85%).
- The scheme return data for these schemes includes valuation information on scheme assets and liabilities, asset allocation, employers, scheme type and status, membership details, and trustees and their advisers.
- Further information comes from electronic forms (available on the PPF's website at www.pensionprotectionfund.org.uk) covering items such as pension funding on a section 179 (s179) basis and deficit reduction contributions. The information on a s179 basis is broadly speaking what would have to be paid to an insurance company to take on the risk of paying PPF compensation in the event of insolvency.
- The scheme return valuation data and electronic returns have been used by PPF actuaries to produce estimates of s179 funding at common dates (31 March 2006 and 30 March 2007) for comparability purposes.
- Although both PPF and the regulator use many measures of insolvency risk for analysis and modelling, the main focus in Purple is on the insolvency failure scores supplied by Dun & Bradstreet (D&B). The failure scores are designed to predict the likelihood that a company will cease operations without paying all creditors over the next 12 months and are used in the PPF's risk-based levy calculations.

3 Scheme demographics

- A majority of schemes in the Purple 2007 sample (61%) are either closed to new members or to future accruals (Purple extended 2006 sample 57%). The proportion of schemes still open to new members rises sharply as scheme size increases.
- Open schemes make up 38% of the total number of schemes and 63% of the total number of memberships.
- 225 schemes in the Purple 2007 dataset went into 'closed to new members' status in 2006, similar to the number in 2004 and 2005. 214 went into 'closed to future accruals' status in 2006, a marked rise on the 2005 level.
- Scheme memberships for the Purple 2007 sample totalled 10.7 million. The largest category of scheme memberships is deferred (41%). 33% are current pensioner memberships and 25% are members actively employed by the sponsor of their pension scheme. As scheme size increases there is a tendency for the proportion of pensioner memberships of a scheme to increase.
- 35% of scheme sponsors, and 28% of total s179 liabilities, are in the manufacturing industry, compared with its 14% share in the economy.

4 Scheme funding

- The s179 information for the Purple 2007 dataset of 5,892 schemes is rolled back to 31 March 2006 and forward to 30 March 2007.
- Movements in financial markets have resulted in a marked improvement in funding between the two dates.
- The Purple 2007 sample was estimated to have been in s179 surplus of £52.9bn as at 30 March 2007 compared with a surplus of £0.2bn as at 31 March 2006, the weighted average funding ratio improving from 100% to 108%.
- As at 30 March 2007, on a s179 basis, 64% of schemes in the Purple 2007 sample were in deficit with a total deficit of £34.4bn, and 36% were in surplus with a total surplus of £87.3bn. The comparable figures for 31 March 2006 were 74% of schemes in deficit with a total deficit of £54.9bn, and 26% of schemes in surplus with a total surplus of £55.1bn.
- While there was a s179 surplus of £52.9bn as at 30 March 2007 there were deficits of £86.3bn and £400.6bn on a FRS17 and full buy-out basis. The comparable figures for 31 March 2006 were deficits of £127.4bn on a FRS17 basis and £419.0bn on full buy-out.
- As with the Purple 2006 dataset, schemes with larger memberships tend to have higher funding levels as do more mature schemes (measured as the proportion of liabilities that relate to pensions in payment).
- Scheme liabilities and assets are concentrated in three broad industry groups: manufacturing, services and the financial sector. Manufacturing has the largest number of schemes (1,855) and the highest level of s179 assets (£163.7bn) and liabilities (£163.5bn).
- Out of the three largest sectors, the financial sector is the best funded (weighted average funding ratio 110%), followed by services (103%) and manufacturing (100%).
- In future years we will have fuller funding information on the prudent basis required by the Pensions Act 2004 (which replaced the Minimum Funding Requirement), known as Technical Provisions.

5 Funding sensitivities

- Modelling the aggregate s179 deficit back to the end of 2002 suggests that changes in market conditions would have caused the overall funding to vary by around £220bn, with the largest deficit of just over £110bn in early 2003 and the largest surplus of almost £110bn in mid-2007.
- The number of schemes in deficit would have peaked in early 2003 at around 5,300 and troughed in June 2007 at around 3,000.
- On 30 March 2007 the FTSE All Share Index stood at 3283 (end March 2006 3048), while the 10-year gilt yield was 5.0% (end March 2006 4.4%).
- The total s179 deficits of schemes in deficit would have varied by around £100bn, with the largest deficit of £120bn in early 2003 and the smallest of £20bn in June 2007.
- A 0.1% (10 basis points) increase or reduction in gilt yields increases or reduces estimated aggregate scheme funding levels (on a s179 basis) by around £12bn. A 2.5% increase or reduction in equity prices also increases or reduces aggregate scheme funding by around £12bn. So, broadly, a 1% (100 basis points) change in gilt yields is equivalent to a 25% change in equity prices.
- A 7.5% fall in equity markets and 0.3% point fall in bond yields would result in a deficit of £21bn compared with the 30 March 2007 surplus of £52.9bn.
- Each year added to the longevity assumption used in the s179 valuation would add around 3% (£20-25bn) to aggregate pension scheme liabilities.

6 Insolvency risk

- Using the D&B information, the weighted average (weighted by scheme liabilities) insolvency probability for employers related to the Purple 2007 dataset of schemes was 0.31% in March 2007, down from 0.38% in March 2006 (insolvency risk is measured between a minimum of 0.074% and a maximum of 37.80%).
- Larger schemes (in terms of both membership and liabilities) tend to have sponsors with lower insolvency probabilities compared to smaller schemes, while better funded schemes also tend to have lower insolvency risk.
- Corporate insolvencies in the UK also continued to trend lower in 2007, with the insolvency rate reaching a record low in Q2 2007.

7 Asset allocation

- Equities (60%) and gilts and fixed interest (29%) continue to dominate schemes' holdings of assets in the Purple Book 2007 (61% and 28% respectively in the Purple Book 2006).
- Although equities dominate portfolios overall, there is a clear tendency for the proportion of assets held in fixed income assets to rise as scheme maturity increases. Additionally, there is also a greater preference for fixed income assets among larger and well funded schemes.
- Office for National Statistics (ONS) data shows that schemes continued to disinvest from equities in 2006. Meanwhile, schemes continued to invest in fixed income and other asset classes.

8 Long-term risk and short-term risk concentration

- In deciding on the total levy to be collected, the PPF's main focus is on long-term risk, and its key tool is the Long-Term Risk Model. The Pensions Regulator is also concerned about the broader health of schemes and closure of deficits in the long term as well as the short term.
- The output of the Long-Term Risk Model is a probability distribution of the level of claims on the PPF over various time periods ranging from 5 to 20 years, based on thousands of possible credit risk and economic scenarios. The distribution of the claims is heavily skewed with a significant impact on the average claim from claims at the higher end of the distribution. Another noteworthy feature, particularly compared with short-term risk, is that a significant proportion of the risk - especially for more adverse scenarios - is related to large, currently stable businesses.
- The distribution of the levy amongst schemes is currently based on short-term risk - the recent funding position and the one-year ahead insolvency probability of its corporate sponsor. The PPF consulted on using long-term risk to determine the distribution of the levy earlier this year. Such a move would lead to a fairer levy: where the distribution of the levy between schemes was a better fit with the distribution of long-term risk.
- Multiplying each scheme's s179 deficit by the probability of the sponsoring company becoming insolvent over the next 12 months showed that a high proportion of the short-term risk to the PPF as at 30 March 2007 arose from schemes with weak sponsors. For instance, some 25% of the combined risk arose from 2% of schemes whose sponsors had an average insolvency probability of 11%.
- By industry, the largest short-term risk concentrations were in manufacturing, finance and services.
- The total combined risk on a one-year horizon for the Purple 2007 dataset was £158m on a s179 basis as at 30 March 2007, down from £258m at 31 March 2006. The improvement reflected both lower insolvency probabilities and lower deficits. These figures exclude schemes in the PPF's assessment process at those dates.

9 Levy payments to the PPF 2006-2007

- For the 2006-2007 levy year the PPF is expecting to collect £271m in respect of the Pension Protection Levy. For the first time the total levy was based on long-term risk, replacing the 2005-2006 levy which was based on membership numbers only.
- For 2006-2007 the risk-based levy was capped at 0.5% of s179 liabilities. 310 schemes were subject to the cap.
- 476 schemes paid no risk-based levy in 2006-07 (representing 6% of the total number of schemes and 7% of total liabilities) because they were better than 125% funded on a s179 basis.
- The proportion of the levy that is risk-based is smaller for better funded schemes and those with lower insolvency risk.
- Schemes with sponsors in the best three insolvency groups paid a levy equivalent to 0.02% of their assets, while schemes in the worst insolvency group paid equivalent to over 0.5% of their assets.
- Levy per member in the best three insolvency groups averaged £12 compared to over £200 in the worst.
- By industry, manufacturing contributed most towards the total levy payments (33%), while agricultural production paid the highest levy per member.
- The top 100 paying schemes paid 39% of the total levy, with the top 10 contributing 15%.

10 Schemes in the PPF assessment process

- There were 179 DB schemes in the PPF's assessment period at end March 2007, with total memberships of 115,000. More than half the schemes in assessment came from manufacturing industry (51%), whilst 16% came from services.
- The aggregate s179 funding level (total assets divided by total liabilities) for schemes in assessment was 84.6% as at 30 March 2007, well below the 108% average funding level of the schemes in the Purple Book 2007.
- The majority of schemes in assessment are small schemes by s179 liabilities and in aggregate only account for a small percentage of total liabilities. Conversely a few large schemes are in an assessment period but these contribute to a large proportion of the total liabilities. Schemes with total s179 liabilities in excess of £100m only account for 4% of schemes in an assessment period, but account for 44% of liabilities.

The data

2.1 Summary

- The main body of the analysis in the Purple Book 2007 ('Purple 2007') is based on new scheme returns for a dataset of 5,892 defined benefit schemes predominantly in the private sector, covering 76% of schemes in the estimated PPF-eligible universe, some 90% of the total estimated s179 liabilities, and 10.7million memberships.
- This is a little larger than the dataset used in the Purple Book 2006 ('Purple 2006') which was based on 5,772 schemes covering 85% of s179 liabilities.
- Moving from the Purple 2006 database to a retrospective universe of around 7,800 PPF-eligible DB schemes (ie an extended Purple 2006 dataset) in general had little impact on aggregate or weighted average results, but key differences are highlighted on scheme status.

2.2 Introduction

The PPF covers certain DB occupational schemes and DB elements of hybrid schemes. Some DB schemes will be exempt from the PPF, including:

- unfunded public service schemes;
- public sector schemes providing pensions to local government employees;
- schemes to which a Minister of the Crown has given a guarantee; and
- schemes which began to wind up, or were completely wound up, prior to 6 April 2005.

For a more comprehensive list see ‘eligible schemes’ on the PPF’s website at: www.pensionprotectionfund.org.uk/index/who-is-eligible.htm

In Purple 2006 the PPF-eligible defined benefit (DB) universe was estimated to be 10,800 schemes (based mainly on numbers from the Pensions Regulator’s scheme return register), while the Purple Book 2006 covered a dataset of 5,772 PPF-eligible schemes. This dataset has now been augmented to produce an extended Purple 2006 dataset covering a total of 7,751 schemes.

In Purple 2007 we have now utilised a dataset of 5,892 PPF-eligible schemes. As for Purple 2006, the 2007 dataset will be augmented to around 7,800 DB schemes, the estimated total PPF-eligible DB universe.¹ Table 2.1 illustrates how each of the two datasets and universes are split by scheme size (number of memberships).

This year’s best estimate of the universe of PPF-eligible schemes (7,800) is largely based on the number of levy invoices issued and paid with respect to the 2006-2007 levy. The dataset used in Purple 2007 is drawn from the universe of DB schemes eligible for protection by the PPF and liable to pay the PPF levies. The members of such schemes may be entitled to compensation should an insolvency event occur in relation to a scheme’s employer.

¹ Although there are estimated to be around 7,800 PPF-eligible schemes, the Pensions Regulator’s register shows a total of around 9,500 DB schemes. The regulator’s register will include some PPF-ineligible schemes (eg local authority schemes). While the PPF uses the various eligibility criteria described earlier, the primary exemptions from completing a scheme return and submitting it to the regulator are: (a) schemes with fewer than two members; and (b) those that wound up prior to 31 March 2005. Hence, the regulator’s register contains about 1,700 DB schemes that are ineligible for PPF protection.

2.3 The PPF-eligible DB universe

The PPF-eligible DB universe has been revised down to around 7,800 because review processes (eg in preparation for levy invoicing) revealed a number of schemes that did not fulfil the PPF eligibility criteria. The two most common reasons for which schemes were determined to be ineligible were defined contribution (DC) schemes being misdescribed as DB and schemes in the register having begun or completed wind-up prior to the PPF's commencement in April 2005.

The original Purple 2006 dataset was thought to represent 54% of the universe of schemes whereas it is now thought to represent 74%. Compared with the view of the DB universe in Purple 2006, the main difference is in the small scheme category (fewer than 100 members) which contains 1,812 schemes rather than 5,900. As a result, the implications of the overestimate in Purple 2006 of the number of schemes in the universe for overall liabilities and memberships are limited. In fact, the estimate of the total s179 liabilities for the 7,800 universe of £790bn as at 31 March 2006 is a little larger than that for the 10,800 universe. This is because the scaling up, used to derive the total liabilities, understated the liabilities of schemes in the two largest groups. Tables 2.1 and 2.2 below show these figures in more detail.

The Annex compares some of the key analyses using the original Purple 2006 dataset and the extended Purple 2006 dataset. The general conclusion is that most of the findings using aggregates and weighted averages are little affected, reflecting the fact that the original dataset covered a very high share of total liabilities. However, there were large effects on simple averages given the inclusion of more small schemes and the differences in some areas between large and small schemes (for example, in asset allocation small schemes tend to make greater use of insurance policies). There are also differences by scheme status.

Table 2.1

Distribution of schemes by scheme size (number of members)

Number of members	Fewer than 100	100 – 999	1,000 – 4,999	5,000 – 9,999	10,000 +	Total schemes
Estimated 2006 DB PPF-eligible universe	5,900	3,500	950	200	250	10,800
Purple 2006 dataset	1,812	2,799	756	175	230	5,772
Estimated 2007 DB PPF-eligible universe	2,840	3,570	930	210	250	7,800
Purple 2007 dataset	1,858	2,877	802	160	195	5,892
Purple 2006 dataset as % of 2007 DB PPF-eligible universe	63.8%	78.4%	81.3%	83.3%	92.0%	74.0%
Purple 2007 dataset as % of Purple 2006 dataset	102.5%	102.8%	106.1%	91.4%	84.8%	102.1%
Purple 2007 dataset as % of 2007 PPF-eligible universe	65.4%	80.6%	86.2%	76.2%	78.0%	75.5%

Table 2.2

Distribution of s179 liabilities (£bn) by scheme size (number of members)

Number of members	Fewer than 100	100 – 999	1,000 – 4,999	5,000 – 9,999	10,000+	Total liabilities
Estimated 2006 DB PPF-eligible universe	25.0	82.2	128.1	76.5	464.0	775.9
Purple 2006 dataset	7.7	65.8	101.9	67.0	426.9	669.3
Estimated 2007 DB PPF-eligible universe	11	79	118	84	498	790
Purple 2007 dataset	7.6	69.7	113.2	72.2	448.1	710.8
Purple 2006 dataset as % of 2007 DB PPF-eligible universe	70.0%	83.3%	86.4%	79.8%	85.7%	84.7%
Purple 2007 dataset as % of Purple 2006 dataset	98.7%	105.9%	111.1%	107.8%	105.0%	106.2%
Purple 2007 dataset as % of 2007 DB PPF-eligible universe	69.1%	88.2%	95.9%	86.0%	90.0%	90.0%

All liabilities are calculated on a s179 basis as at 31 March 2006. Caution should be exercised in comparing liabilities due to differences in roll forward methodologies. In particular, the roll-forward methodology is different from that used in Chapter 4. For general comparisons, the Chapter 4 figures should be used.

The data... continued

The Purple 2007 dataset includes fewer schemes in the largest membership size categories (5,000-9,999 and over 10,000) than the Purple 2006 dataset, although it includes more schemes overall. However, because of the inclusion of more of the biggest schemes, the coverage of liabilities in these two membership groups is greater than in Purple 2006. For example, in the largest membership category there are 84.8% of the schemes in that group in Purple 2006 but 105% of the liabilities. Indeed, in terms of liabilities the Purple 2007 dataset is larger than Purple 2006 for all membership categories except the smallest. The different compositions of schemes in each membership size group means care should be taken in comparing results from the Purple 2006 and Purple 2007 datasets.

2.4 Primary sources

The information used in chapters three to eight of this publication comes from three primary sources, as described below.

Scheme returns provided to the Pensions Regulator

The scheme returns include valuation information on scheme assets and liabilities, asset allocation, employers, scheme type and status, membership details, trustees and their advisers. Most of the analysis in this year's publication is based on new scheme returns issued in autumn 2006, covering 5,892 schemes, a somewhat larger number than the 5,772 used in the Purple 2006 dataset. This new dataset represents 76% of the estimated PPF-eligible universe of schemes (for the levy year 2006-2007), and given its high coverage of large schemes' liabilities the Purple 2007 dataset represents 90% of the total value of liabilities. It also includes around 65% of all schemes with fewer than 100 members. The new scheme returns will, in general, form the basis for the 2007-2008 levy invoices.

In this publication, there are also comparisons with the information from the scheme returns issued between June 2005 and June 2006, which formed the basis for the 2006-2007 levy and most of the analysis in Purple 2006.

Voluntary form reporting

Electronic forms are available on the PPF's website for pension schemes to provide data regarding contingent assets, valuation results on a s179 basis, deficit reduction contributions (DRCs) and the s179 valuation results following block transfers. Some 1,690 schemes provided s179 information in this way. The total value of DRC certificates in the year to 30 March 2007 included in the funding estimates in Purple 2007 is just above £9bn

Insolvency failure scores supplied by Dun & Bradstreet (D&B)

The D&B failure scores (running from 1 to 100), which cover all the companies in the business universe, are designed to predict the likelihood that a company will cease operations without paying all creditors over the next 12 months. For each score there is an assumed probability of insolvency, which is used in the PPF's risk-based levy calculations. (More detail on the D&B scores is given in chapter six.) Internally, the regulator and the PPF employ a wide range of approaches to risk and insolvency probabilities. However, in Purple 2007 D&B insolvency probabilities are used as they are the most widely available and most easily accessible measure of employer risk.

2.5 Funding estimates

This publication uses data that, as far as possible, reflects the position at a common date, 30 March 2007, for comparison with the position at 31 March 2006. As explained in chapter four, funding comparison between the Purple 2007 and Purple 2006 datasets would be misleading due to the different schemes those datasets include. Consequently, to compare funding positions, chapter four utilises the Purple 2007 dataset as at 30 March 2007 and the Purple 2007 dataset 'rolled back' to 31 March 2006.

The bulk of the analyses utilises funding estimates on a s179 funding basis. This is, broadly speaking, what would have to be paid to an insurance company to take on the payment of compensation at the PPF levels of benefit. (For calculation of the 2007-2008 risk-based levy, the PPF uses estimates of the scheme's funding position on a s179 basis as at 31 October 2006, while for the 2006-2007 levy the PPF used estimates of the scheme's funding position as at 31 March 2006.)

There are two ways in which the PPF calculates the s179 funding position of schemes:

1. Around 44% of schemes in the Purple 2007 dataset have provided s179 estimates based on financial market conditions at a date since November 2004 (28% using voluntary forms, 16% scheme returns). This is up from 10% in last year's Purple Book. For these, the PPF has rolled forward the s179 assets and liabilities to 30 March 2007.
2. For those schemes which have not provided s179 valuations, PPF actuaries prepared estimates using information about Minimum Funding Requirement (MFR) valuations from the scheme returns, the majority relating to valuation dates over the last four years. They applied formulae to convert the values to a s179 basis as at 30 March 2007. It will not be until 2008-2009 that the PPF will have s179 valuations for the whole universe, and will be able to dispense with MFR roll-forwards; eligible schemes have to provide their first s179 valuations by no later than 31 March 2008.

For the purpose of this publication, PPF actuaries have also produced FRS17 and full buy-out estimates of the funding position for the Purple 2007 sample as at 31 March 2006 and 30 March 2007.²

The measure of scheme funding targeted by the Pensions Regulator is now concentrated on the scheme specific funding regime (set out in Part 3 of the Pensions Act 2004) setting a 'technical provisions' liability.

For further details, see the regulator's publication '*Recovery Plans: an initial analysis*' at: www.thepensionsregulator.gov.uk/onlinePublications/factsandfigures.aspx.

The Purple Book 2007 does not present the analysis of Part 3 scheme funding 'technical provisions'. Due to the regime's three-year phasing-in period, the regulator does not hold Part 3 funding data for all schemes in the Purple 2007 dataset. At present, data held only covers about 2,000 schemes in deficit (and none in surplus) and relates to valuation dates falling within the last quarter of 2005 and first two quarters of 2006 (these dates are incompatible with the Purple 2007 dataset). It is envisaged that the Purple Book will include an analysis of Part 3 funding as more data becomes available.

The Pensions Regulator published a report on the first 1,300 recovery plans in September 2007.

² FRS17 assumptions have been derived by taking the yield on the Iboxx over 10 year corporate bond index as the discount rate. Inflation has been set equal to the implied inflation spot curve as published by the Bank of England. All pensions are assumed to increase by RPI to a maximum of 5%. The pension increase assumption is equal to inflation minus 0.1%. The estimates allow for a more optimistic mortality assumption for FRS17 compared to s179. This assumption decreases the liabilities by around 5% compared to the s179 mortality rate. Buy-out assumptions have been derived in a consistent way with the derivation of s179 assumptions. However, the estimates allow for all pensions to increase by RPI to a maximum of 5%.

Scheme demographics

3.1 Summary

- Both the original and extended Purple 2006 datasets in general show similar characteristics to the dataset we have this year.
- 63% of memberships remain in open schemes.

3.2 Introduction

This chapter contains descriptive analysis to show the composition and extent of the dataset used in this year's Purple Book. We also make some comparisons between the composition of the new dataset and the extended Purple 2006 dataset.

3.3 Scheme status

Definition of status categories

- **Open (and Some open)**
'Open' schemes continue to accept new members. Benefits continue to accrue. 'Some open' schemes have some sections open (accepting new members and benefits continuing to accrue) and some sections closed. The removal of the 'part open' category from the 2007 dataset to improve accuracy is discussed in section 3.4 of this chapter.
- **Closed to new members**
The scheme does not admit new members. Existing members can continue to accrue pensionable service and benefits.
- **Closed to future accrual**
No further pensionable service accrues. Members' benefits for earlier service continue to be held and invested in the scheme.
- **Winding up**
In the process of settling benefits so as to permanently close the scheme.

The vast majority of comparisons made here are with the extended Purple 2006 dataset (ie close to the probable PPF-eligible universe) as detailed in chapter two and the first part of the Annex. Other comparisons, such as for industry classification of sponsor companies, use the original Purple 2006 dataset.

Distributions of schemes by status and membership³

38% of the schemes in the Purple 2007 dataset are listed as open. 46% are closed to new members and 15% closed to future accruals. Less than 1% are winding up.

For memberships, 63% were listed as open, 34% as closed to new members and 3% were closed to future accruals. Less than 0.5% were in schemes in wind up.

Comparing 2007 and 2006 and the removal of the 'part open' category

In Purple 2006, schemes had the choice of listing as 'part open' or 'open'. However, this choice was removed from the scheme return as the 'part open' category was causing confusion in that schemes were listing their status inconsistently. This category is therefore absent from Purple 2007. Making comparisons between 2006 and 2007 on this measure is therefore difficult. There are two issues. The first is how those previously listed as part open reallocated themselves; the second is changes in the dataset itself between the extended 2006 dataset and the 2007 dataset.

On the first issue:

- Of the schemes common to both datasets and listed as 'part open' in 2006 (562 schemes covering approximately 2.5 million memberships), 79% relisted as 'open' in 2007. On average, there were 5,180 memberships for each scheme that relisted in this way.
- Correspondingly, of the memberships common to both datasets and listed as being in 'part open' schemes in 2006, 86% were relisted as being in 'open' schemes in 2007.

If a scheme previously listing as part open does not declare itself as open in 2007, the other options were closed to new members, closed to future accruals, or in wind-up. Some 14% by membership used one of these categories. So the category issue affects all options.

³ To preserve readability we have used the terms 'members' and 'memberships' interchangeably in this document. Both terms refer to the number of memberships in a scheme. Any one individual may have memberships in several schemes.

Scheme demographics... continued

If one simply applies the ratio of memberships from part open schemes relisting as open, this would produce a figure of 61.5% memberships in open schemes for the extended dataset. This is obviously lower than the 2007 figure of 63%. A key reason for this is that whilst the schemes added to the extended 2006 dataset were in general similar to the original 2006 dataset, they did include a high proportion by membership of schemes closed to new members and to future accruals. Therefore making precise comparisons to the nearest percentage point on memberships in open schemes between the 2006 extended dataset and the 2007 dataset is difficult. However other evidence such as the information on scheme closures (chart 3.2) suggests that membership in open schemes will have fallen slightly over the past year.

A breakdown of these movements can be found in the Annex.

Chart 3.1

Comparing schemes by scheme status

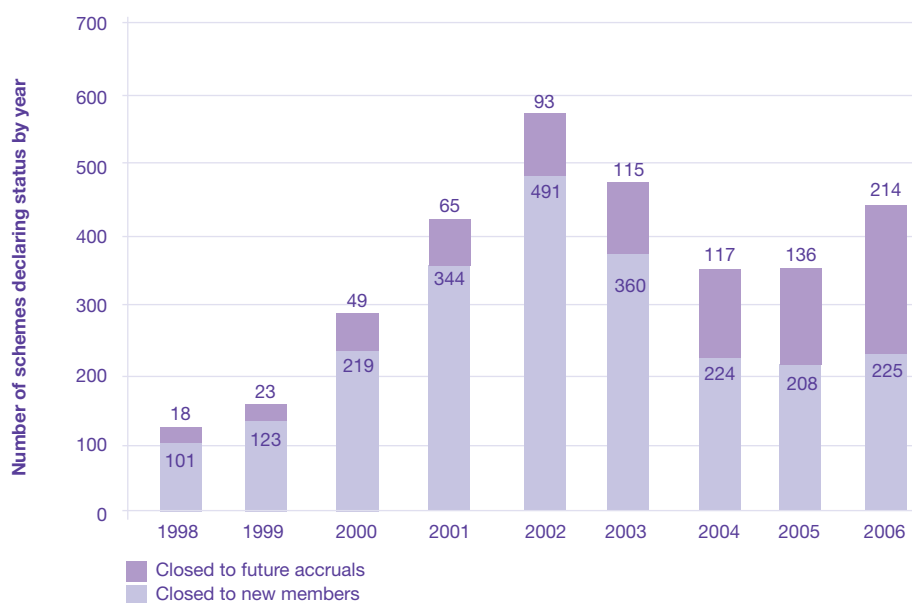


Chart 3.2 shows the year in which the 2,295 schemes in the dataset currently closed to new members and the 830 schemes currently closed to future accruals entered their respective status.⁴

The majority (52%) of those listed as closed to new members went into this status between 2001 and 2003. The majority (56%) of those schemes listed as closed to future accruals in 2007, however, went into this status more recently (between 2004 and 2006). 95% of the schemes going into closed to future accrual status between 2004 and 2006 were smaller, having fewer than 1,000 members. Evidence suggests that there is no clear pattern for schemes entering closed to future accruals status - they may have been previously closed to new members or open. This means that the peak in closures will not necessarily be followed by a related peak in schemes becoming closed to new accruals.

Chart 3.2

Closed scheme trends (Purple 2007)



⁴ The data only records the most recent status, so that if a scheme became closed to new members in 2002 and then became paid up in 2006, only the 2006 status would show in this chart.

3.4 Scheme membership

Analysing the distribution of memberships by scheme status, the trends towards schemes closed to new members and to future accruals are similar. 37% of memberships in the Purple 2007 dataset (comprising 3,603 schemes and 3.9 million members) were in closed schemes (see chart 3.3), compared with 35% of the memberships in the extended 2006 dataset (4,052 schemes and 4.8 million members) (see chart 3.4).

Of the 63% of memberships in open schemes, around 28% were active, 32% pensioner and the remainder deferred.

Chart 3.3

Percentage distribution of memberships by scheme status (Purple 2007)

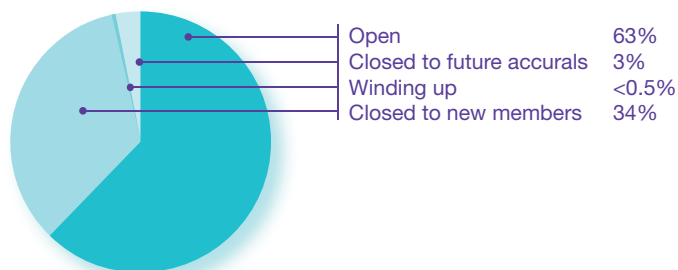
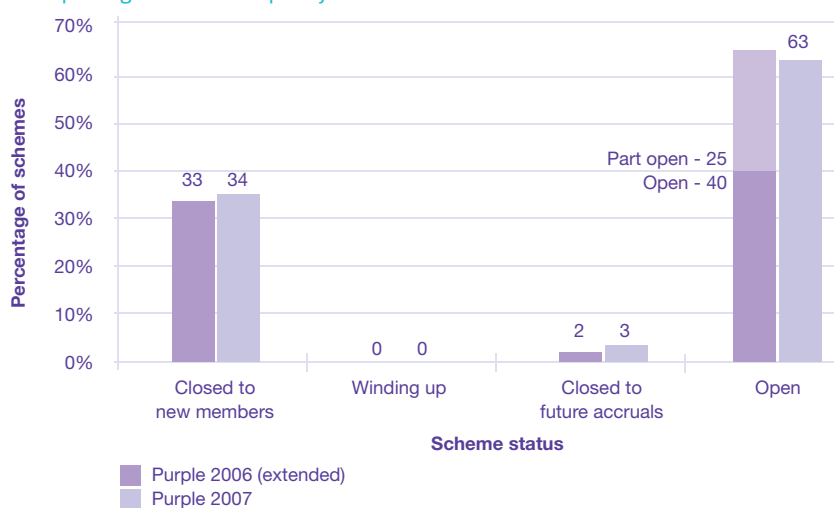


Chart 3.4

Comparing memberships by scheme status



Analysis of scheme status by scheme size

Chart 3.5 shows that the proportion of schemes still open to new memberships increases with scheme size, indicating that larger schemes are more likely to be open. The situation is very similar to that shown in last year's dataset (see chart 3.6).

Chart 3.5

Percentage distribution of scheme status by scheme size (Purple 2007)

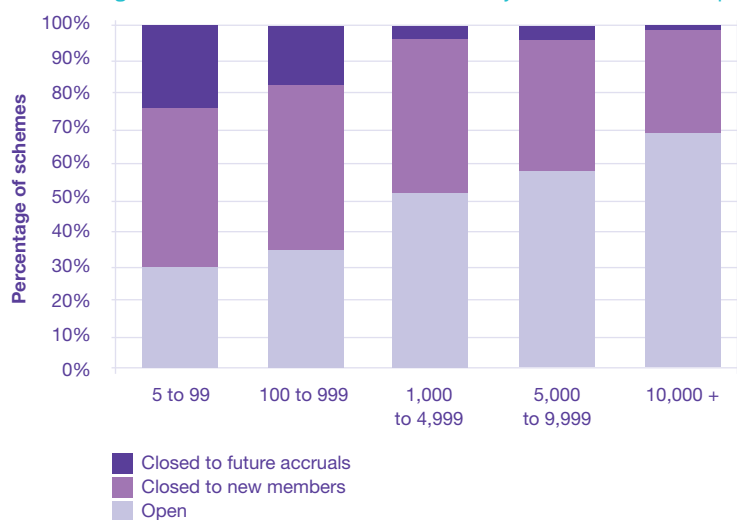
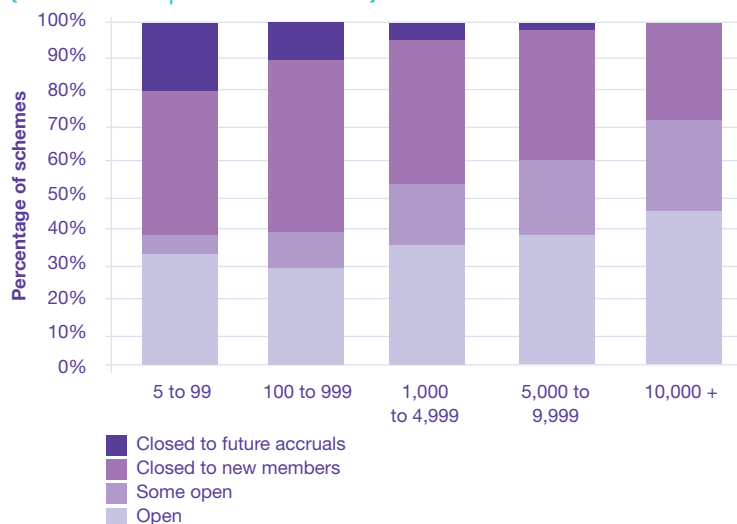


Chart 3.6

Percentage distribution of scheme status by scheme size (extended Purple 2006 dataset)⁵



⁵ Because last year's data has the category 'part open' and this year's does not, it is difficult to compare levels of 'open' schemes accurately. Where schemes declared themselves to be part open the situation may vary between the DB sections of a scheme being open, DC sections being open but DB sections being closed to new members, or some DB sections being open and some not. Because of this uncertainty the two categories are not amalgamated in this chart.

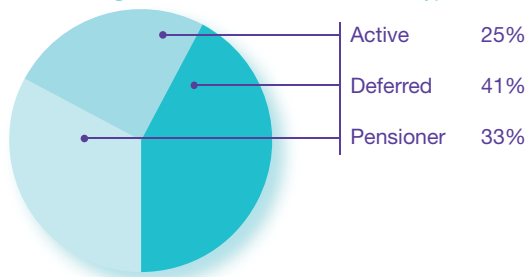
Scheme demographics... continued

Scheme membership

Scheme memberships for the Purple 2007 dataset total 10.7 million. The largest single group of members is deferred (41%). There are slightly fewer active members by percentage than there were in the extended Purple 2006 dataset - 25% (2.7 million) this year as opposed to 26% (3.6 million) - and the same percentage of pensioner memberships.⁶ As with last year's analysis, it is probable that some individuals will have deferred or pensioner memberships across more than one scheme. See chart A.2 in the Annex for a full breakdown of member types in the extended 2006 dataset.

Chart 3.7

Percentage distribution of member types in dataset (Purple 2007)



Pie chart may not sum to 100% due to rounding

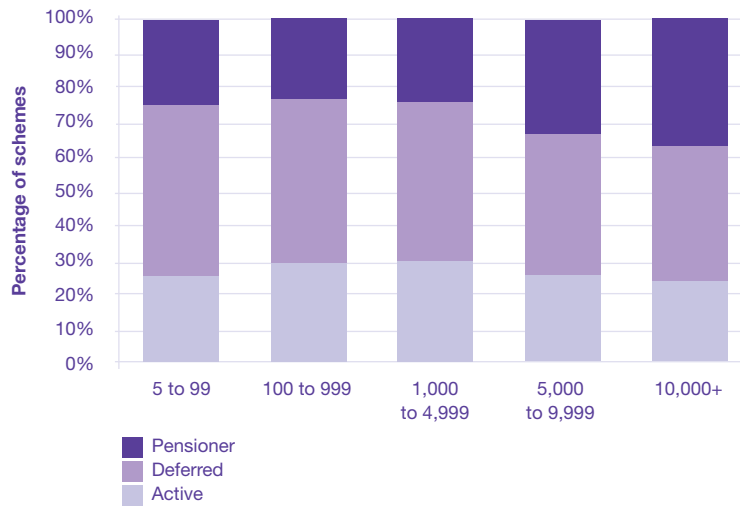
⁶ The difference in the actual number of active members between the Purple 2007 dataset and the extended Purple 2006 dataset is a result of the latter containing significantly more schemes. This should not be misinterpreted as a drop of 900,000 active members.

Analysis of membership by scheme size

Larger schemes tend to have higher proportions of pensioner members (see chart 3.8).

Chart 3.8

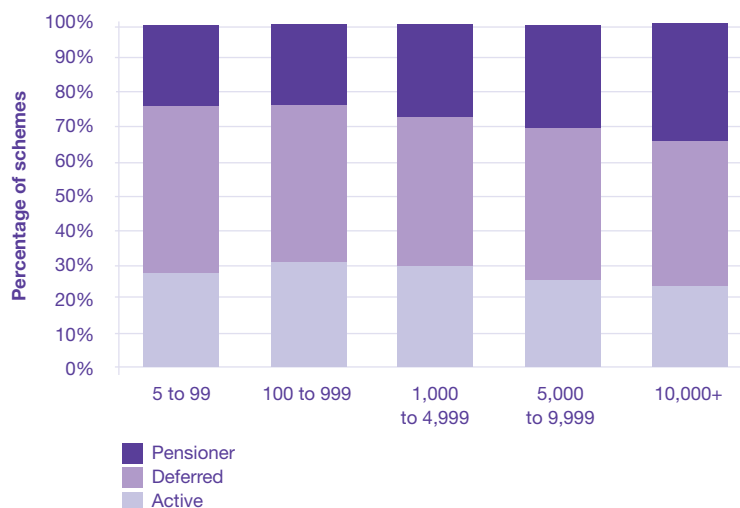
Percentage distribution of member types by scheme size (Purple 2007)



The proportions are very similar to those found in the original Purple 2006 dataset and in the extended Purple 2006 dataset (see chart 3.9).

Chart 3.9

Percentage distribution of member types by scheme size (extended Purple 2006 dataset)

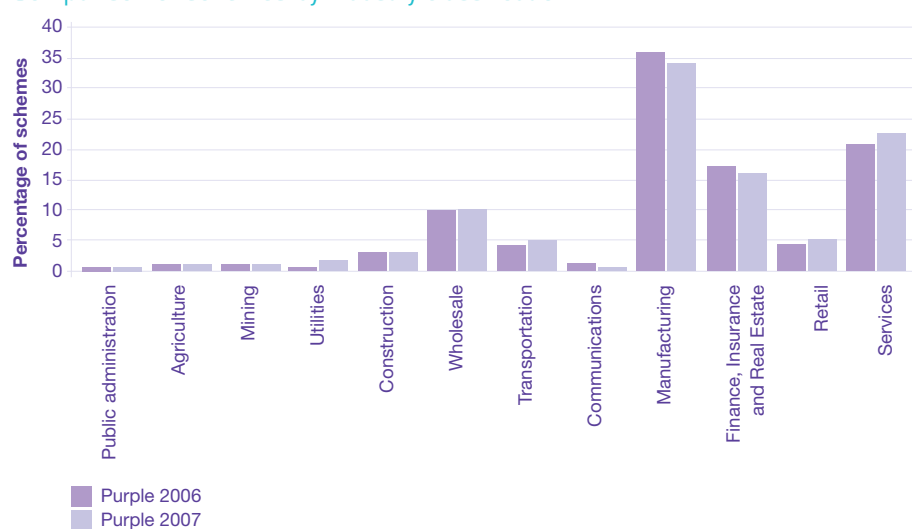


3.5 Schemes in the sample by sponsor type and industry

The distribution of schemes in the Purple 2007 dataset, broken down by industry classification,⁷ shows a similar profile to that of last year's dataset. Chart 3.10 illustrates this (actual figures are given in the data tables in the Annex).

Chart 3.10

Comparison of schemes by industry classification

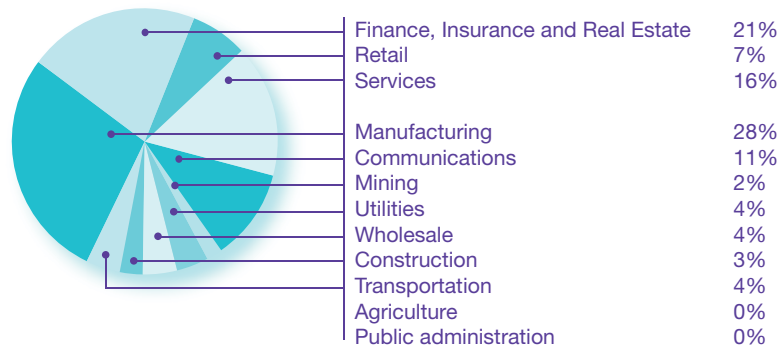


Base of 5,454 (2006) and 5,456 (2007) schemes with available data

⁷ Industry classifications are based on 1972 US SIC codes since this is the coding utilised by D&B.

Chart 3.11

s179 liabilities by industrial sector

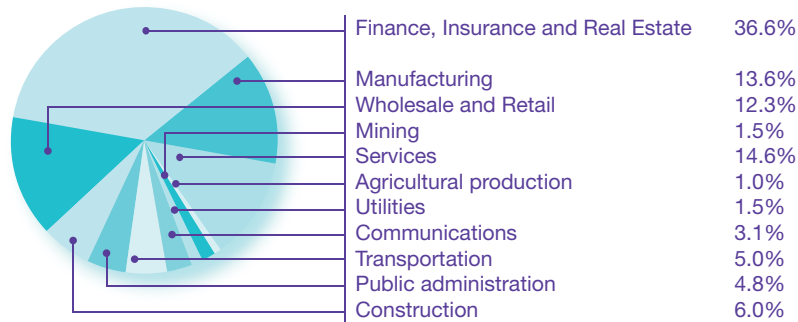


Base of 5,456 (2007) schemes with available data

As shown in chart 3.11, the history of DB pension provision leads to an overweighting of previously larger sectors such as manufacturing compared with their current weighting in terms of GDP. Chart 3.12 presents the percentage distribution of UK GDP by industry in 2007, with manufacturing accounting for 13.6% of the total.

Chart 3.12

Proportion of GDP by industry



Source: Office for National Statistics

Scheme funding

4.1 Summary

- Overall, movements in financial markets mean that the s179 funding position of the Purple 2007 dataset has improved from what it would have been in 2006.
- Larger schemes, by membership, tend to be better funded on a s179 basis than smaller schemes. This holds for both 2006 and 2007.
- Immature schemes (where less than 25% of liabilities are pensions in payment) are, on average, in deficit on a s179 basis, and s179 funding improves with maturity.
- The s179 funding position has improved across all industrial sectors from 2006 to 2007.

4.2 Introduction

This section sets out an analysis of the funding level of DB schemes drawing on the scheme return dataset. While valuations of assets are commonly undertaken on a market price basis, there are a number of ways in which liabilities can be valued so as to place them on a comparable basis to assets. In particular, as pensions are paid over a long period in the future, discount factors need to be applied to the estimated payments to bring them to a value that is comparable to the asset value. Various approaches are adopted according to circumstances.

The funding framework set out in Part 3 of the Pensions Act 2004 requires schemes to value liabilities (known as ‘technical provisions’) prudently on the basis that the scheme remains supported by an ongoing employer. Where schemes are in deficit on this basis, the Pensions Regulator requires the submission of a recovery plan (setting out, amongst other things, the time it will take to repay the deficit) and valuation summary (setting out the assumptions used to calculate the technical provisions). The new framework applies to actuarial valuations with effective dates on or after 22 September 2005. Owing to the triennial nature of the valuation process, it will be late 2009 before schedules of contributions, based on the new regime, are in place for every scheme. To give a preliminary indication of the types of recovery plan and valuation summary that have been submitted so far, the Pensions Regulator has recently published an initial analysis of recovery plans received up to the end of July 2007.

Full and summary versions of this analysis are available on the regulator's website at: www.thepensionsregulator.gov.uk/onlinePublications/factsandfigures.aspx.

A measure of pension liabilities that is currently available on a common basis is that calculated under section 179 of the Pensions Act 2004 for PPF levy purposes (the so-called 's179' liability measure). Chapter two explains how we have derived this data. This measure has the advantage of being close to the liability that the PPF would expect to assume in the event of a scheme entering the fund, hence enabling quantification of the PPF's overall risk exposure. The Pensions Regulator has stated that it will use the technical provisions of a scheme as its primary trigger but this will be evaluated with reference to the s179 valuation (alongside FRS17) when considering whether a scheme's Part 3 valuation merits examination by the regulator. The Purple 2007 dataset is rolled back to 31 March 2006 and forward to 30 March 2007. Funding positions at the two dates are then compared in terms of estimated s179 funding.

The s179 liability measure has some characteristics which means that care should be taken in drawing conclusions about scheme funding levels generally. In particular, the value of liabilities reflects the basis on which the PPF pays compensation and so excludes any indexation of benefits accrued before April 1997; also, liabilities in respect of scheme members below normal pensionable age are reduced by 10% and subject to the compensation cap, to reflect the basis on which the PPF pays compensation. On the other hand, the basis for valuing these PPF liabilities is related to the cost of buying out the liabilities with a regulated insurance company rather than the ongoing basis used for Part 3 valuations. This should be borne in mind when looking at the analyses below.

Some estimates of funding levels on the full buy-out basis are included as a comparison to the s179 data. This highlights the funding position of schemes relative to the cost of transferring all risks to an insurer, assuming that this is possible without altering the 'price' of insurance. These figures have been calculated by adjusting the s179 data which is based on the levels of PPF compensation on an approximate basis to allow for the valuation of full scheme benefits. Approximate figures under the FRS17 accounting standard have also been calculated using a similar approach.

Comparison of the figures generated using the Purple 2007 dataset with those published in the previous Purple Book would be potentially misleading as the datasets comprise different schemes. Further discussion of the differences between the datasets can be found in chapter two and the Annex. Accordingly, comparisons made in this chapter are between the Purple 2007 dataset as at 30 March 2007 and the estimated 'rolled back' s179 values of the Purple 2007 dataset as at 31 March 2006 (unless otherwise stated).

4.3 Analysis of funding levels

Overall funding level

There was an aggregate surplus on a s179 basis of £52.9bn surplus as at 30 March 2007 for all schemes in the dataset. This contrasts with aggregate deficits of approximately £86.3bn on a FRS17 basis and £400.6bn on a full buy-out basis. Total s179 deficits for schemes that were in deficit at this date were £34.4bn, as shown in table 4.1a below.

Table 4.1a

Overall funding levels as at 30 March 2007
(based on the Purple 2007 dataset)

	s179	FRS17	Full buy-out
Total schemes	5,892	5,892	5,892
Total assets £bn	725.0	725.0	725.0
Total liabilities £bn	672.1	811.3	1,125.5
Total balance £bn	52.9	-86.3	-400.6
Total balance for schemes in deficit £bn	-34.4	-111.9	-402.4
Total balance for schemes in surplus £bn	87.3	25.6	1.8

Figures have been rounded to one decimal place

Table 4.1b

Overall funding levels as at 31 March 2006
(based on the Purple 2007 dataset)

	s179	FRS17	Full buy-out
Total schemes	5,892	5,892	5,892
Total assets £bn	689.0	689.0	689.0
Total liabilities £bn	688.8	816.4	1,108.0
Total balance £bn	0.2	-127.4	-419.0
Total balance for schemes in deficit £bn	-54.9	-143.0	-419.9
Total balance for schemes in surplus £bn	55.1	15.6	0.9

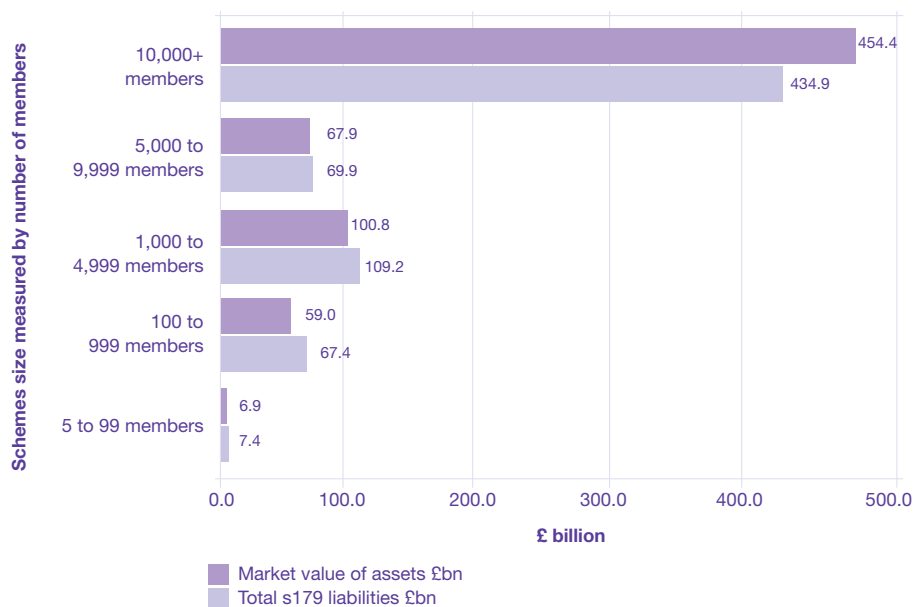
Figures have been rounded to one decimal place

Analysis by size of scheme membership

Schemes with larger memberships tend to have higher s179 funding levels. Schemes with more than 10,000 members comprise 63% (£424.6bn) of total liabilities (of £672.1bn), and 63% of memberships.

Chart 4.1

Distribution of s179 assets and liabilities at 31 March 2006
by size of scheme membership



Based on the Purple 2007 dataset rolled back to 2006

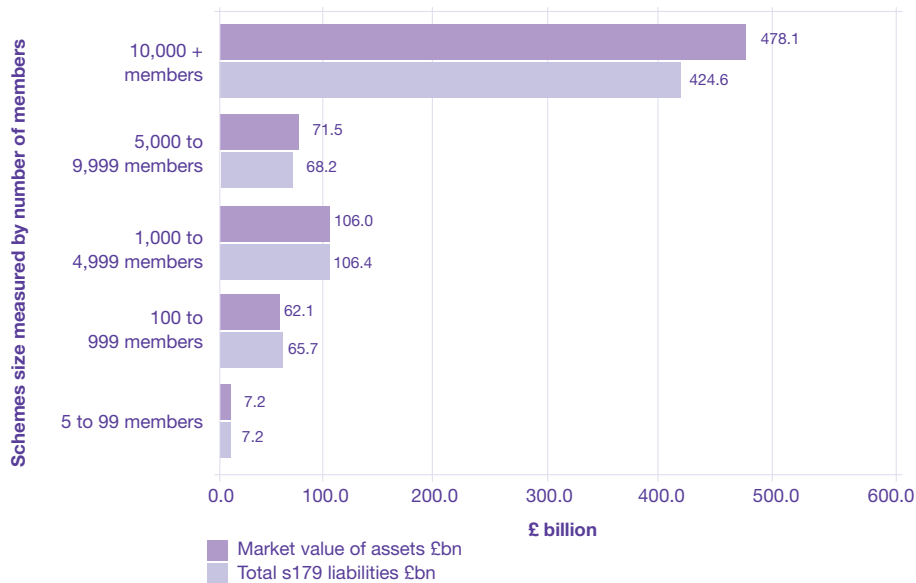
The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members

Figures have been rounded to one decimal place

Scheme funding... continued

Chart 4.2

Distribution of s179 assets and liabilities at 30 March 2007
by size of scheme membership



Based on the Purple 2007 dataset

The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members

Figures have been rounded to one decimal place

The tendency for larger schemes to have higher s179 funding levels is also shown in the weighted average funding levels (calculated as the total value of assets divided by the total value of liabilities) which fall from 113% for schemes with more than 10,000 members to 101% for schemes with fewer than 100 members. Whilst the 2007 simple average funding levels are higher than those calculated for the Purple 2007 data rolled back to 31 March 2006, this relationship remains (see tables 4.2 and 4.3 opposite).

Table 4.2

s179 funding levels as at 31 March 2006 by scheme size

Scheme size (number of memberships)	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
5 to 99 members	1,858	6.9	7.4	-0.5	94%	92%
100 to 999 members	2,877	59.0	67.4	-8.4	88%	85%
1,000 to 4,999 members	802	100.8	109.2	-8.4	92%	89%
5,000 to 9,999 members	160	67.9	69.9	-2.0	97%	94%
10,000 + members	195	454.4	434.9	19.4	104%	101%
Total	5,892	689.0	688.8	0.2	100%	88%

*Based on the Purple 2007 dataset**The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members**Figures have been rounded to one decimal place**Weighted average is calculated as total funding as percentage of total liabilities***Table 4.3**

s179 funding levels as at 30 March 2007 by scheme size

Scheme size (number of memberships)	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
5 to 99 members	1,858	7.2	7.2	0.0	101%	98%
100 to 999 members	2,877	62.1	65.7	-3.6	95%	91%
1,000 to 4,999 members	802	106.0	106.4	-0.4	100%	96%
5,000 to 9,999 members	160	71.5	68.2	3.3	105%	102%
10,000 + members	195	478.1	424.6	53.4	113%	108%
Total	5,892	725.0	672.1	52.9	108%	95%

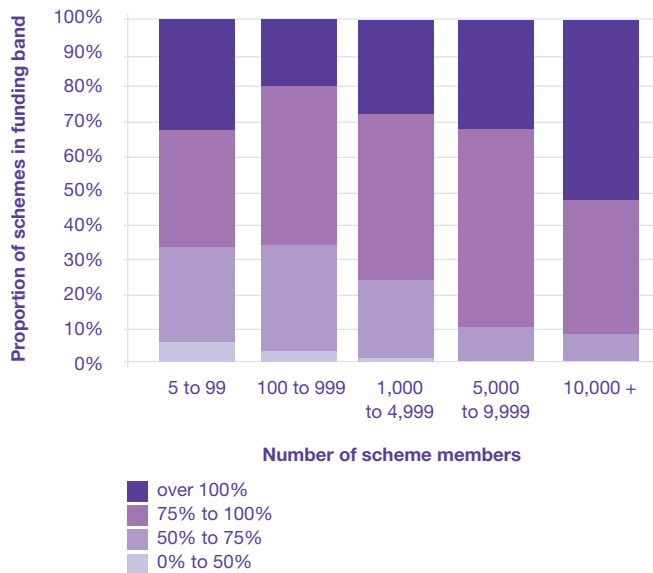
*Based on the Purple 2007 dataset**The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members**Figures have been rounded to one decimal place**Weighted average is calculated as total funding as percentage of total liabilities*

Scheme funding... continued

Charts 4.3 and 4.4 show the distribution of s179 funding level bands by scheme size. This indicates that for smaller schemes, the simple averages in table 4.3 above are influenced by a significant minority of schemes with very low funding levels (less than 75% funding). However, this tendency is less strong in the 2007 figures than in the figures rolled back to 31 March 2006, and even less prominent in comparison with the equivalent figures from last year's Purple Book.

Chart 4.3

Distribution of s179 funding levels as at 31 March 2006
by size of scheme membership



Based on the Purple 2007 dataset rolled back to 2006

The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members

Chart 4.4

Distribution of s179 funding levels as at 30 March 2007
by size of scheme membership



Based on the Purple 2007 dataset

The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members

Scheme funding... continued

Table 4.4

Estimated full buy-out funding levels at 30 March 2007

Scheme size (number of members)	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
5 to 99 members	1,858	7.2	12.2	-5.0	59%	58%
100 to 999 members	2,877	62.1	111.0	-48.9	56%	54%
1,000 to 4,999 members	802	106.0	178.5	-72.4	59%	58%
5,000 to 9,999 members	160	71.5	114.2	-42.7	63%	61%
10,000 + members	195	478.1	709.6	-231.5	67%	65%
Total	5,892	725.0	1,125.5	-400.6	64%	56%

Based on the Purple 2007 dataset

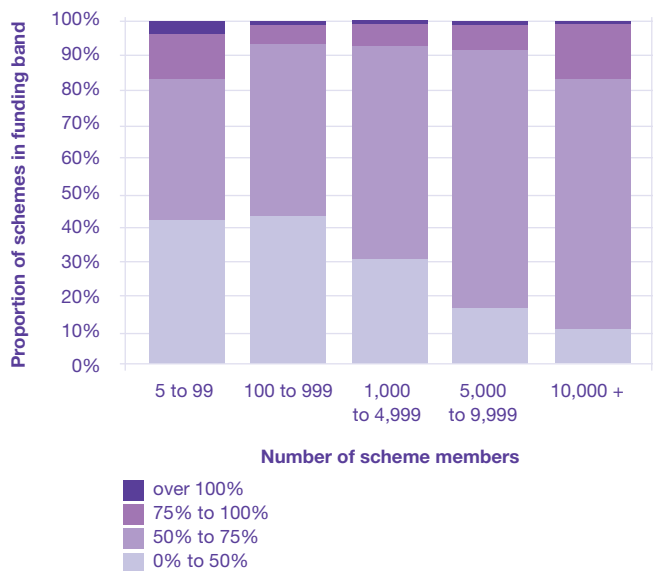
The category 5 to 99 members includes 27 schemes with 2, 3 or 4 members

Figures have been rounded to one decimal place

Weighted average is calculated as total funding as percentage of total liabilities

Chart 4.5

Distribution of buy-out funding levels at 30 March 2007



Based on the Purple 2007 dataset

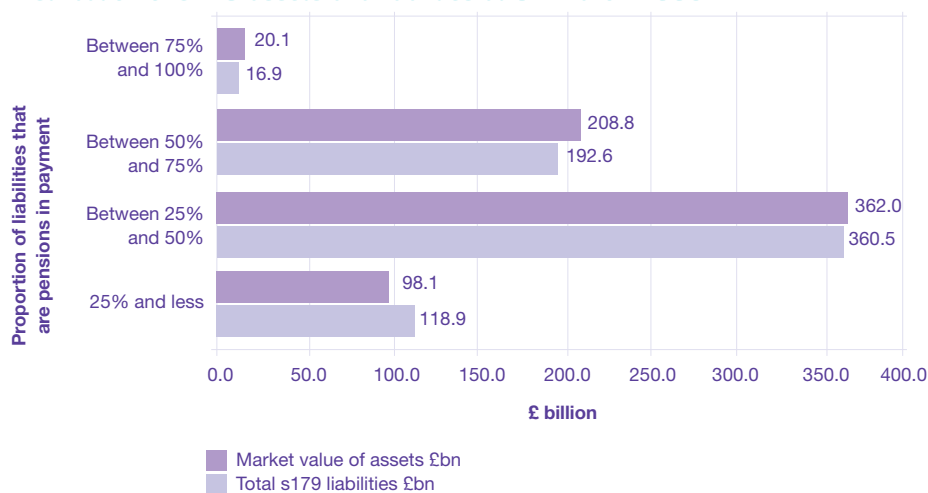
Table 4.4 shows estimated funding levels on a buy-out basis by scheme size for schemes in the Purple 2007 dataset. Chart 4.5 illustrates this data further.

Analysis by scheme maturity

More mature pension schemes (measured as the proportion of liabilities that relate to pensions in payment) tend to have higher funding levels on a s179 basis. The weighted average funding level is more than 100% for schemes where more than 25% of liabilities are pensions in payment. For the figures rolled back to 31 March 2006, the weighted average funding level was also more than 100% for schemes where more than 25% of liabilities were pensions in payment, but the surpluses were not as strong.

Chart 4.6

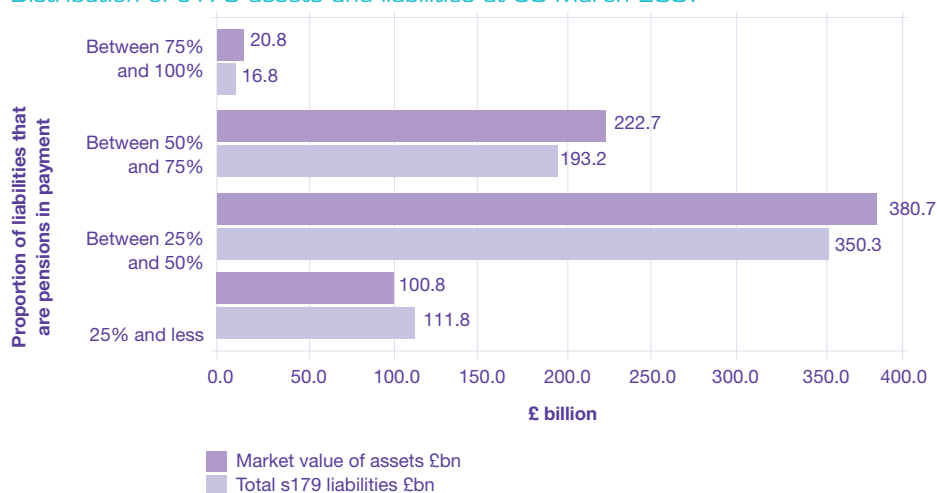
Distribution of s179 assets and liabilities at 31 March 2006



Based on the Purple 2007 dataset rolled back to 2006
Figures have been rounded to one decimal place

Chart 4.7

Distribution of s179 assets and liabilities at 30 March 2007



Based on the Purple 2007 dataset
Figures have been rounded to one decimal place

Table 4.5

Analysis of s179 funding levels as at 31 March 2006 by scheme maturity

Proportion of liabilities that are pensions in payment	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
25% or less	3,069	98.1	118.9	-23.4	82%	79%
Between 25% and 50%	2,059	362.0	360.5	-2.6	100%	94%
Between 50% and 75%	655	208.8	192.6	6.6	108%	109%
Between 75% and 100	109	20.1	16.9	3.2	119%	127%
Total	5,892	689.0	688.8	0.2	100%	88%

Based on the Purple 2007 dataset rolled back to 2006

Figures have been rounded to one decimal place

Weighted average is calculated as total funding as percentage of total liabilities

Table 4.6

Analysis of s179 funding levels as at 30 March 2007 by scheme maturity

Proportion of liabilities that are pensions in payment	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
25% or less	3,016	100.8	111.8	-11.0	90%	86%
Between 25% and 50%	2,078	380.7	350.3	30.3	109%	100%
Between 50% and 75%	686	222.7	193.2	29.5	115%	115%
Between 75% and 100	113	20.8	16.8	4.0	124%	132%
Total	5,892	725.0	672.1	52.9	108%	95%

Based on the Purple 2007 dataset

Figures have been rounded to one decimal place

Weighted average is calculated as total funding as percentage of total liabilities

As shown in table 4.6, weighted average s179 funding levels for 2007 fall from 124% for mature schemes where 75% to 100% of liabilities relate to pensions in payment to 90% for immature schemes where less than 25% of liabilities relate to pensions in payment. It is worth bearing in mind the potential impact that the s179 methodology has on this analysis. The presentation is likely to be affected by compensation for pensioners above normal pensionable age being 100% of benefits while compensation for non-pensioners is 90% of benefits subject to the compensation cap. Against this, it is likely that a greater proportion of pensioners' benefits will have been earned pre-1997.

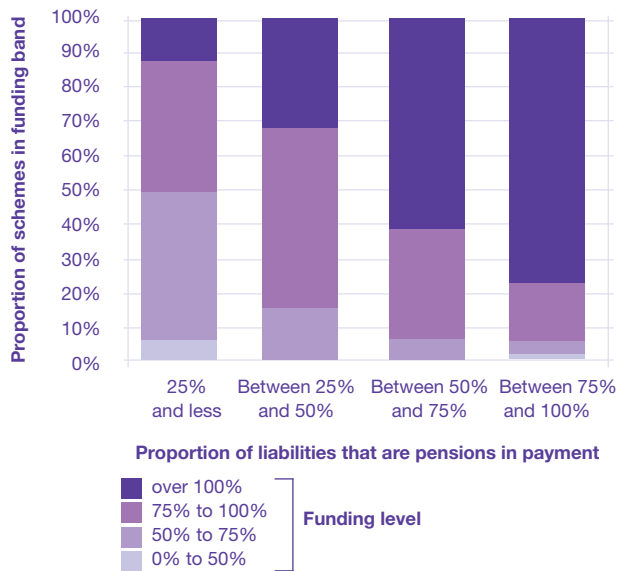
As the PPF does not provide indexation in payment on compensation for pre-1997 accrued benefits, these schemes may display better than average levels of funding. In addition, the buy-out basis used for assessing PPF liabilities is likely to show higher apparent funding levels for more mature schemes as a result of the differences between buy-out and ongoing funding levels for mature and immature schemes.

Chart 4.9 shows the distribution of s179 funding levels for schemes in each maturity band. The chart shows the significantly greater proportion of immature schemes that have low funding levels. 35% of these schemes have funding levels below 75%. This might be expected for the reasons given above.

Scheme funding... continued

Chart 4.8

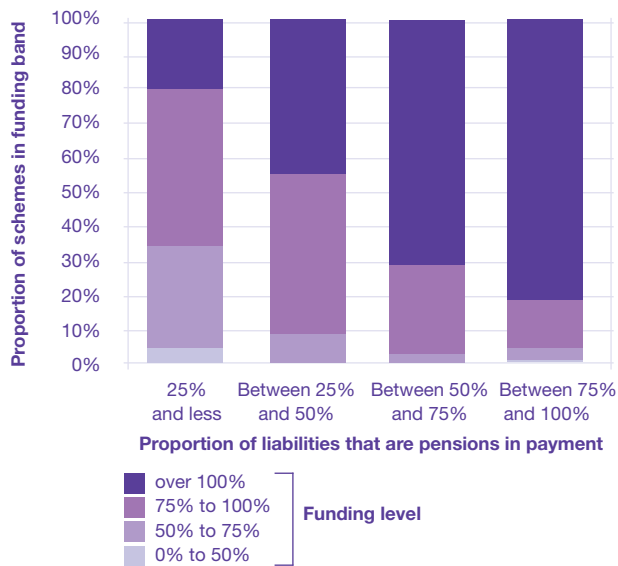
Distribution of funding levels on s179 basis
by scheme maturity at 31 March 2006



Based on the Purple 2007 dataset rolled back to 2006

Chart 4.9

Distribution of funding levels on s179 basis
by scheme maturity at 30 March 2007



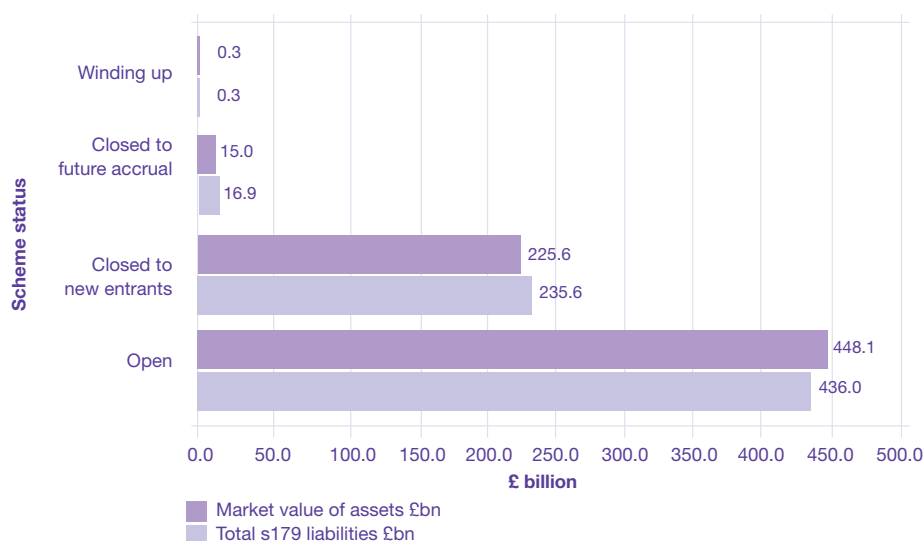
Based on the Purple 2007 dataset

Analysis by scheme status

Whilst in general the s179 funding level tends to be lower in schemes that are closed to new members than in open schemes, and lower in schemes closed to future accrual than in schemes closed to new members, those schemes actually in wind-up have funding levels comparable to those which are open. Given the very low level of schemes in wind-up in the sample, this may be the result of a few unusual schemes.

Chart 4.10

Distribution of s179 assets and liabilities at 31 March 2006 by scheme status

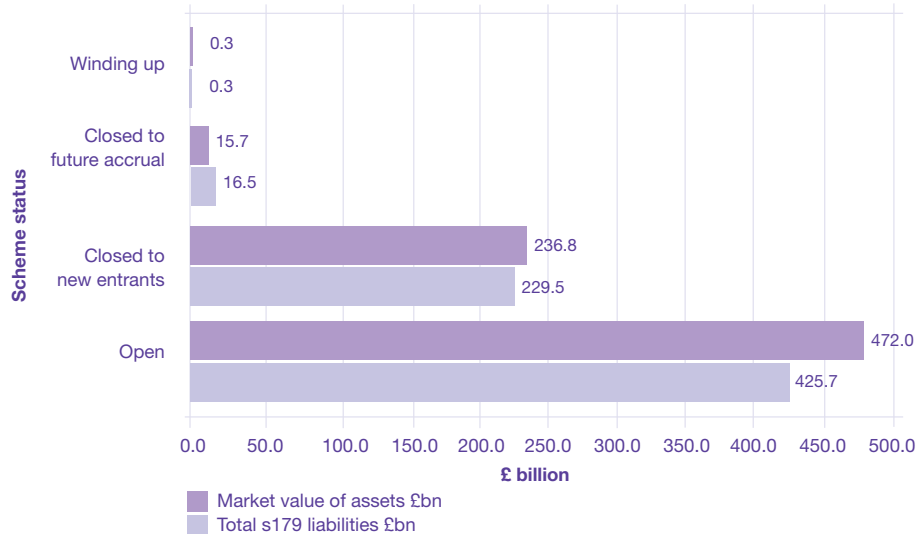


Based on the Purple 2007 dataset rolled back to 2006

Figures have been rounded to one decimal place

Chart 4.11

Distribution of s179 assets and liabilities at 30 March 2007 by scheme status



Based on the Purple 2007 dataset

Figures have been rounded to one decimal place

Scheme funding... continued

Table 4.7

Analysis of s179 funding levels at 31 March 2006 by scheme status

Scheme status	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Open	2,245	448.1	436.0	12.1	103%	90%
Closed to new entrants	2,703	225.6	235.6	-10.0	96%	88%
Closed to future accrual	900	15.0	16.9	-1.9	89%	84%
Winding up	44	0.3	0.3	0.0	106%	93%
Total	5,892	689.0	688.8	0.2	100%	88%

*Based on the Purple 2007 dataset rolled back to 2006**Figures have been rounded to one decimal place**Weighted average is calculated as total funding as percentage of total liabilities***Table 4.8**

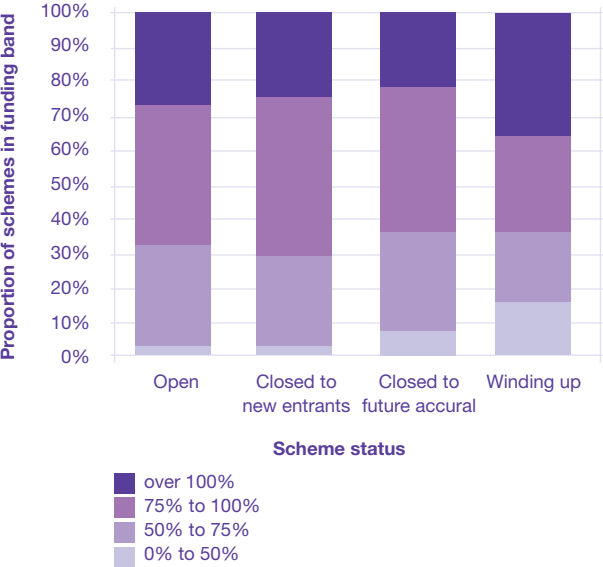
Analysis of s179 funding levels at 30 March 2007 by scheme status

Scheme status	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Open	2,245	472.0	425.7	46.4	111%	97%
Closed to new entrants	2,703	236.8	229.5	7.3	103%	95%
Closed to future accrual	900	15.7	16.5	-0.8	95%	90%
Winding up	44	0.4	0.3	0.0	109%	98%
Total	5,892	725.0	672.1	52.9	108%	95%

*Based on the Purple 2007 dataset**Figures have been rounded to one decimal place**Weighted average is calculated as total funding as percentage of total liabilities*

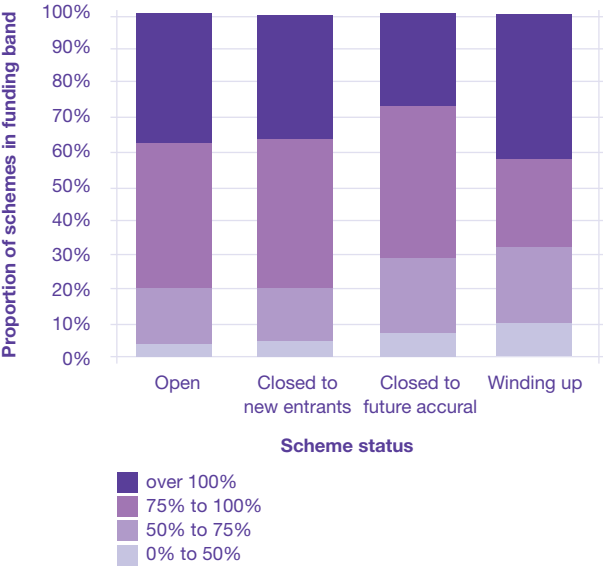
Chart 4.13 shows the distribution of s179 funding levels by scheme status at 30 March 2007. A minority of open schemes are significantly underfunded (ie less than 50% funded on a s179 basis). Just over 30% of schemes that are in the process of winding up are less than 75% funded.

Chart 4.12
Distribution of s179 funding levels at 31 March 2006 by scheme status



Based on the Purple 2007 dataset rolled back to 2006

Chart 4.13
Distribution of s179 funding levels at 30 March 2007 by scheme status



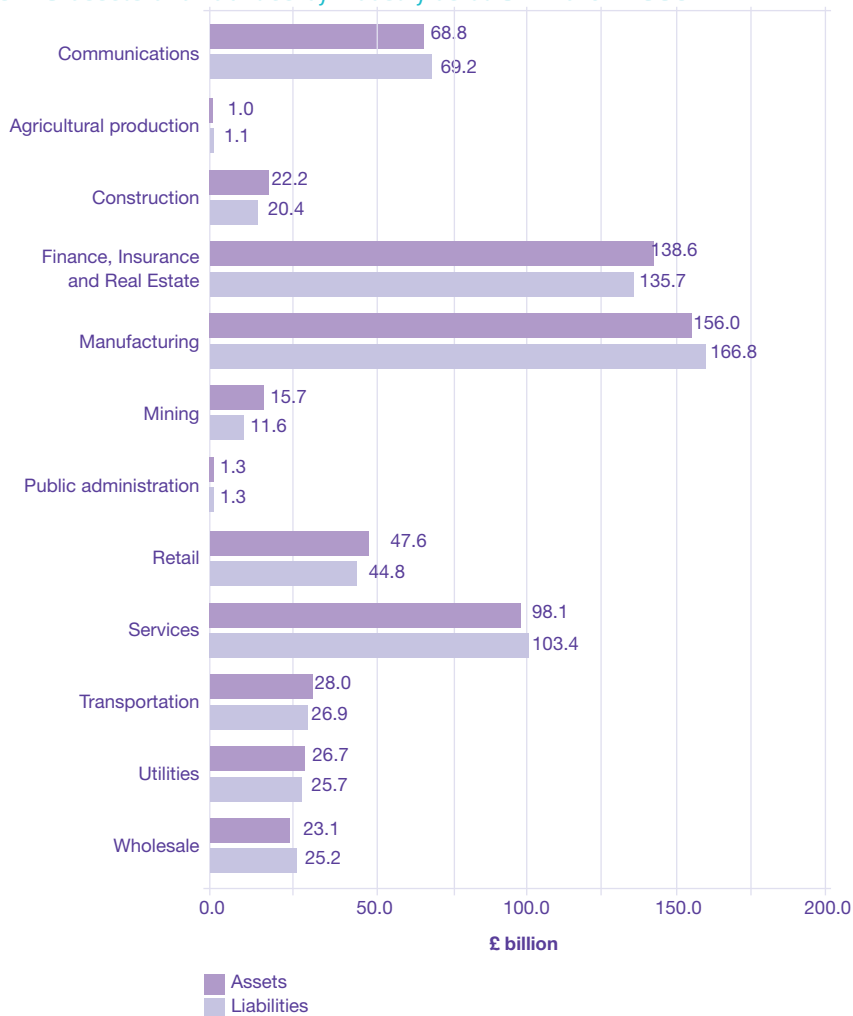
Based on the Purple 2007 dataset

Analysis by employer industry

Chart 4.15 shows that s179 scheme liabilities and assets are concentrated in three broad industry groups: manufacturing; services; and finance, insurance and real estate. The manufacturing sector has the largest number of schemes (1,855), the highest level of liabilities (£163.5bn) and the highest level of assets (£163.7bn). Compared to chart 4.14, showing the data rolled back to 31 March 2006, funding in 2007 is stronger for all industries.

Chart 4.14

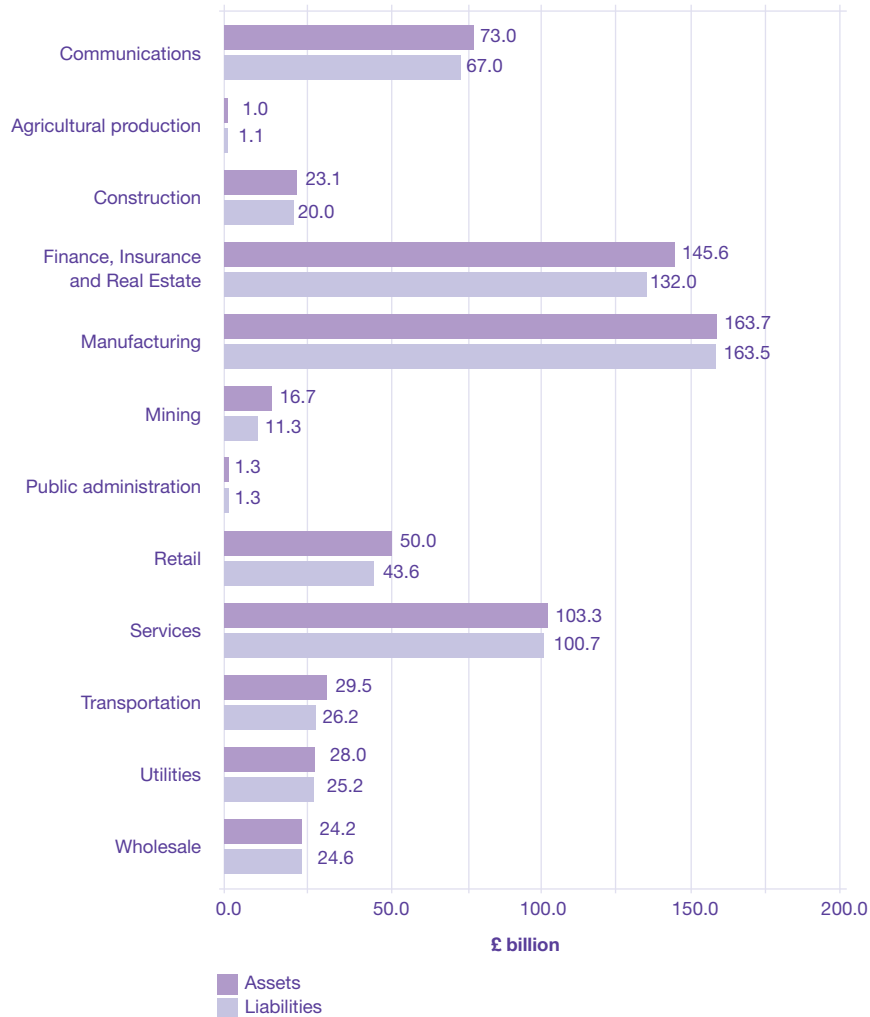
s179 assets and liabilities by industry as at 31 March 2006



Based on the Purple 2007 dataset rolled back to 2006
 Figures have been rounded to one decimal place

Chart 4.15

Distribution of s179 assets and liabilities by industry as at 30 March 2007



Based on the Purple 2007 dataset

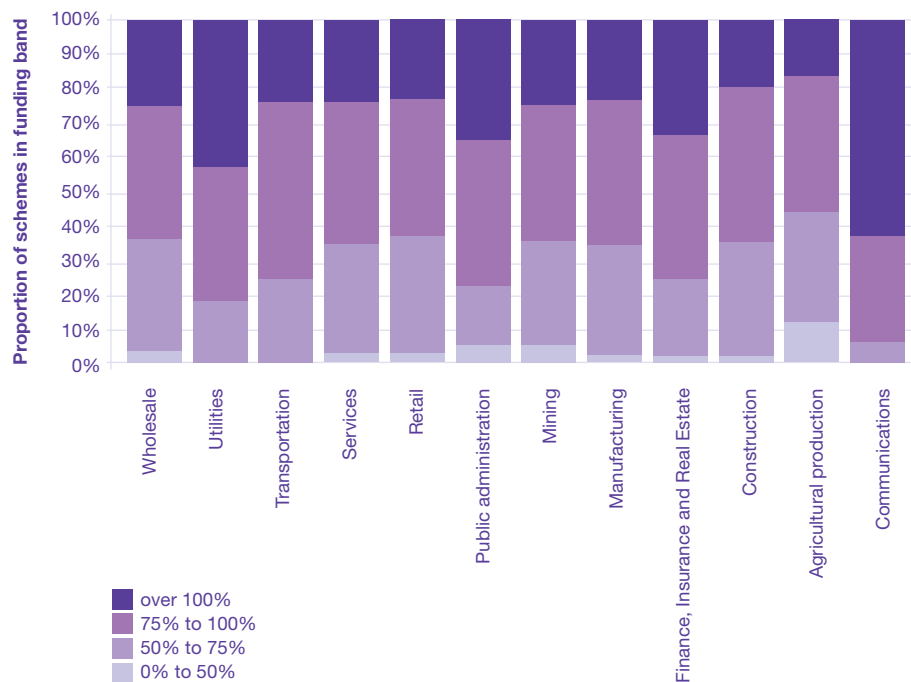
Figures have been rounded to one decimal place

Scheme funding... continued

Charts 4.16 and 4.17 show that (despite the strengthening funding positions) the distribution of s179 funding levels across the various industries remains similar from 2006 to 2007.

Chart 4.16

Distribution of s179 funding levels as at 31 March 2006 by industry

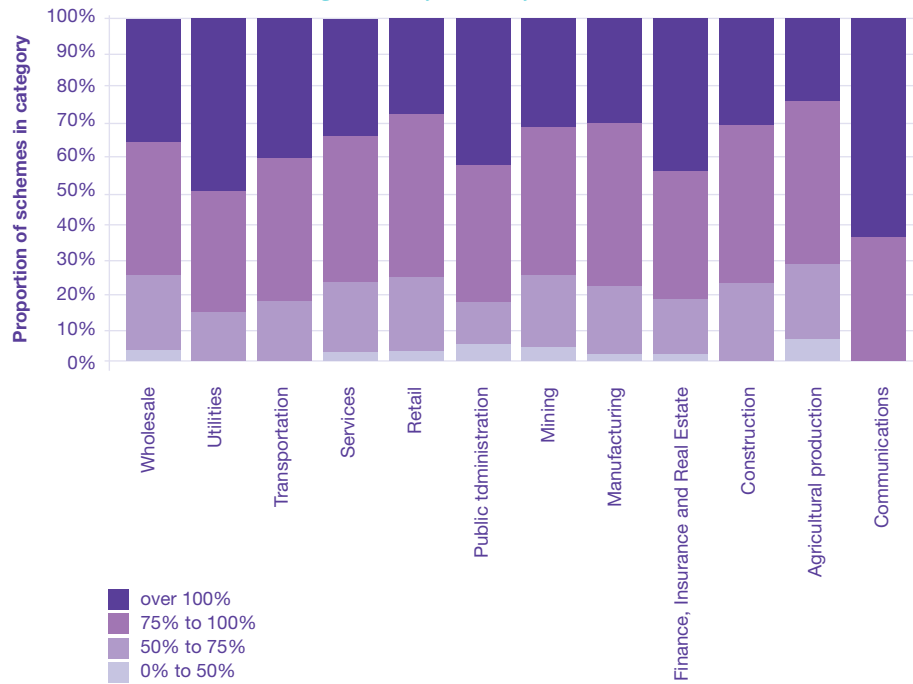


Based on the Purple 2007 dataset rolled back to 2006

Base of 5,454 (2006) and 5,451 (2007) schemes with available data

Chart 4.17

Distribution of s179 funding levels by industry as at 30 March 2007



Based on the Purple 2007 dataset

Base of 5,454 (2006) and 5,451 (2007) schemes with available data

Funding sensitivities

5.1 Summary

- Changes in estimated market conditions since December 2002 have caused the aggregate funding position of pension schemes measured on a s179 basis to vary by around £220bn (largest deficit, of £113bn, in early 2003 and largest surplus, of £107bn in June 2007).
- The number of schemes in deficit on a s179 basis peaked in early 2003 at around 5,300 and troughed in June 2007 at around 3,000.
- Each year added to the longevity assumption used in the s179 valuation would add around 3% (£20-25bn) to pension scheme liabilities.
- Different assumed inflation rates will also affect funding estimates.
- A 0.1% (10 basis points) increase or reduction in gilt yields increases or reduces estimated aggregate scheme funding levels (on a s179 basis) by around £12bn; a 2.5% increase or reduction in equity prices increases or reduces aggregate scheme funding by around £12bn. So, broadly, a 1% (100 basis points) change in gilt yields is equivalent to a 25% change in equity prices.

5.2 Introduction

The analyses of funding set out in chapter four provide a snapshot at two points in time, March 2006 and March 2007. In practice, funding levels are inherently volatile and are susceptible to changes in line with:

- changes in asset values, especially equities which tend to be a more volatile asset class than bonds but which (based on longer-term empirical evidence) demonstrate the potential to offer a higher return;
- changes in the discount rate used to value liabilities;
- employers making deficit correction payments;
- changes in benefits; and
- changes in assumptions of expected mortality.

This chapter describes this volatility and sets out various sensitivities.

5.3 Movements in asset values and discount rates

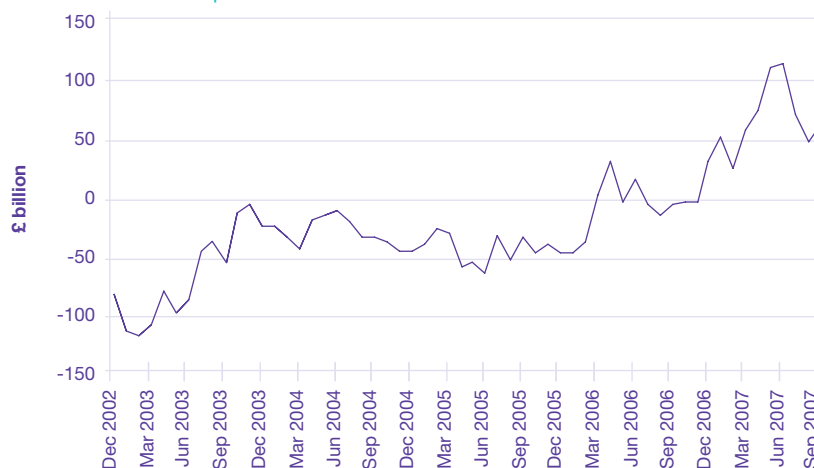
Aggregate s179 funding

Based on the Purple 2007 dataset, changes in market conditions since December 2002 have caused the aggregate funding position of pension schemes measured on a s179 basis to vary by around £220bn (chart 5.1), with the largest deficit, of £113bn, in early 2003, and a maximum surplus of £107bn in June 2007. These figures, shown below, are based on adjusting the assets and liabilities of individual pension schemes calculated at their respective valuation dates on an approximate basis using changes in market indices for principal asset classes and the fixed interest and index-linked gilt yields used to value liabilities.

The approximation does not allow for benefit accrual or payments, changes in contributions paid or actual scheme experience, or changes in mortality assumptions. This is consistent with the methodology adopted for the purposes of the PPF7800 index which has been published by the PPF since July 2007, and is available at: www.pensionprotectionfund.org.uk/index/ppf_7800_index.htm.

Chart 5.1

Estimated aggregate s179 assets less aggregate s179 liabilities of pension schemes in the dataset

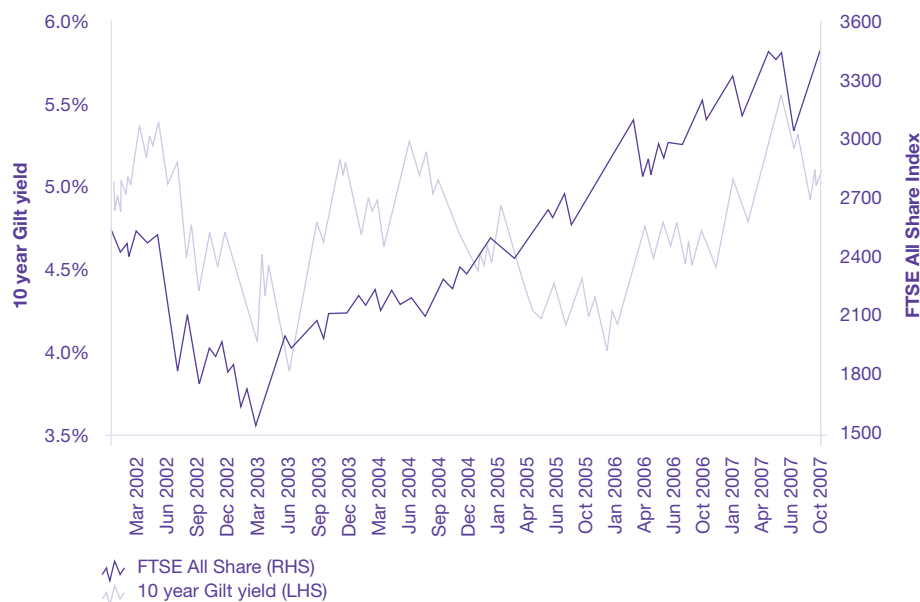


Source: the Pension Protection Fund

Note: the s179 assets and liabilities have been adjusted for changes in market conditions only. Any deficit reduction contributions from schemes have been included and adjusted from their respective valuation date in the same way as assets and liabilities.

Chart 5.2

Movements in stock markets and gilt yields



Source: Bloomberg

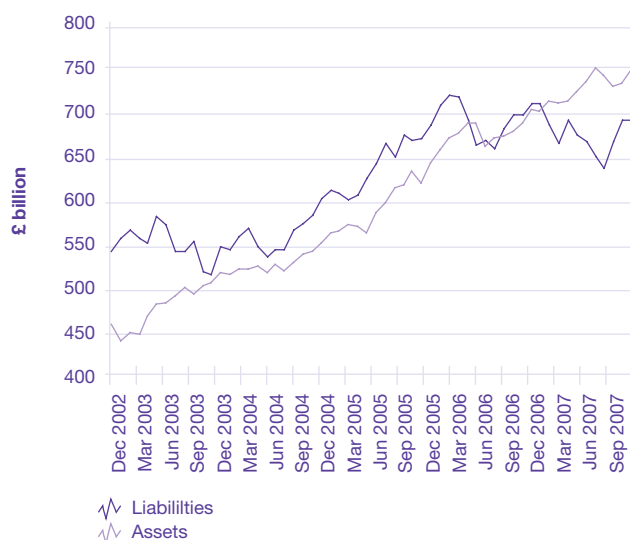
The s179 valuation estimate as at 30 March 2007 includes Deficit Reduction Contribution certificates (DRCs) submitted to the PPF by 4 April 2007 for which the data collected appears consistent with the schemes' valuations. These certificates show DRCs paid since the last scheme valuation. Earlier DRCs will have been subsumed in the scheme asset figures as at the valuation date. The roll back and roll forward methodology implicitly assumes that the DRCs are paid on the date to which the valuation result is rolled back or forward. Movements in scheme funding are then driven almost entirely by movements in financial markets. To the extent that schemes have been making large special contributions in recent years (as suggested by the ONS data reported later) the earlier funding figures will give too favourable a picture of the 'real' funding position and underestimate the improvement in recent years.

The major trends in market conditions underlying the s179 funding variation can be seen in chart 5.2, while chart 5.3 below shows the movements in s179 asset and liability figures underlying chart 5.1. In summary:

- the period from March 2003 to the end of 2003 saw equity markets and gilt yields rising, leading to a reduction in the aggregate deficit;
- the period from summer 2004 to January 2006 saw the continuing rise in equity values being broadly balanced by falling gilt yields so that the aggregate deficit stayed relatively constant; and
- between January 2006 and June 2007, rising equity markets combined with sharply rising gilt yields resulted in a significant improvement in s179 funding levels, with aggregate funding moving into s179 surplus from early 2007. There was some reversal after June 2007, largely reflecting lower gilt yields, while equity markets saw a sharp fall followed by a recovery to previous levels.

Chart 5.3

Movement in s179 assets and liabilities of schemes in the Purple 2007 dataset



Source: the Pension Protection Fund

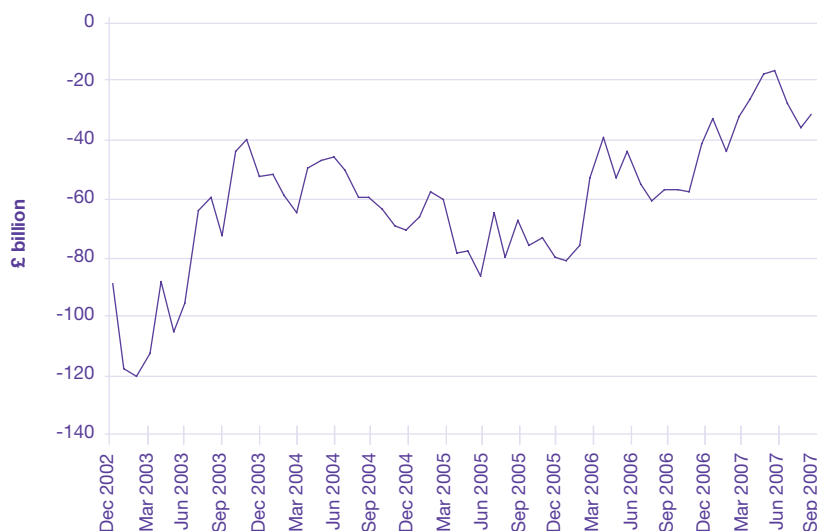
Note: the s179 assets and liabilities have been adjusted for changes in market conditions only. Any deficit reduction contributions from schemes have been included and adjusted from their respective valuation date in the same way as assets and liabilities.

Schemes in s179 deficit

Charts 5.4 and 5.5 below show movement of the s179 assets, liabilities and deficit for schemes in deficit since 2002. The largest total deficit of £120bn occurred in early 2003 and the smallest in June 2007 at around £20bn. The difference between the largest and smallest deficits is narrower than in the case of all schemes because financial market conditions can swing schemes from surplus to deficit, or deficit to surplus. For example, consider a scheme where movements in financial markets result in the funding position moving from a deficit of £30m to a surplus of £10m. The aggregate balance for all schemes would improve by £40m. However, the aggregate balance for schemes in deficit only improves by £30m because the scheme ceases to be a deficit scheme at the point it moves into balance. In early 2003, there were more than 5,300 schemes in deficit (more than 90% of all schemes). In June 2007 there were just over 3,000 schemes in deficit, which represents 52% of the total schemes in the sample.

Chart 5.4

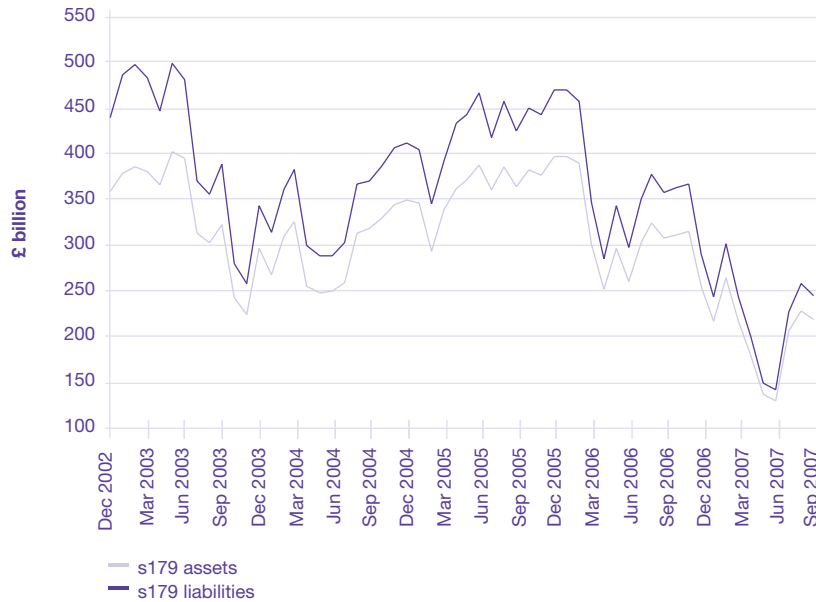
Estimated aggregate s179 assets less aggregate s179 liabilities of pension schemes in the Purple 2007 dataset (excluding schemes in surplus)



Source: the Pension Protection Fund

Chart 5.5

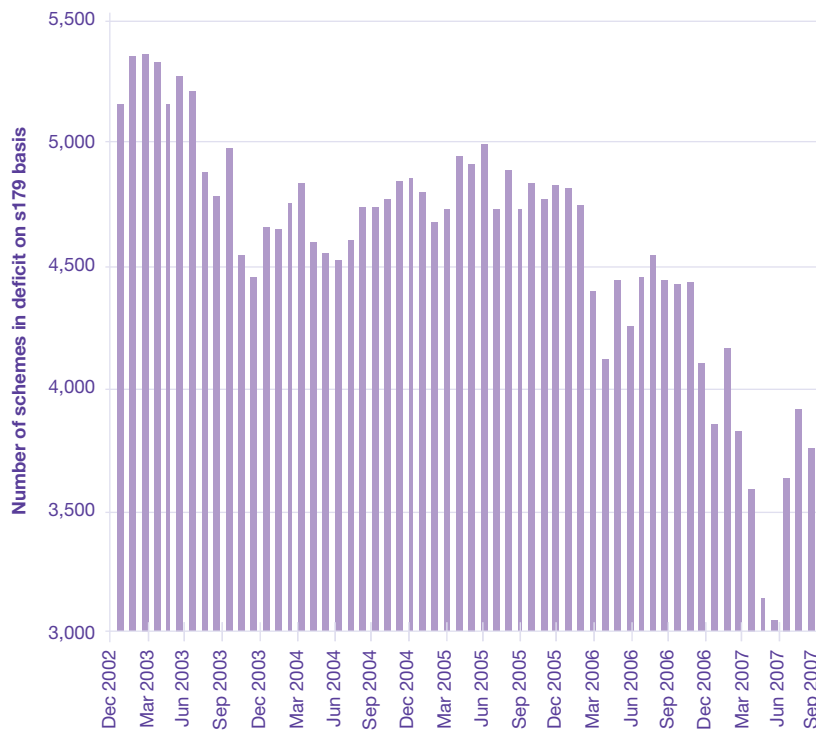
Movement in s179 assets and liabilities of schemes in the Purple 2007 dataset (excluding schemes in surplus)



Source: the Pension Protection Fund

Chart 5.6

Estimated number of schemes in deficit on a s179 basis each month



Source: the Pension Protection Fund

Funding sensitivities... continued

Rules of thumb for the aggregate s179 funding position

The sensitivity of s179 deficits to changes in market conditions is illustrated in the tables below. In essence:

- A 0.1% (10 basis points) increase or reduction in gilt yields increases or reduces aggregate scheme funding by around £12bn.
- A 2.5% increase or reduction in equity prices increases or reduces aggregate scheme funding by around £12bn. This is based on our data which shows that 60% of assets are invested in equities.
- So, broadly, a 1% (100 basis points) change in gilt yields is equivalent to a 25% change in equity prices.

Combining these changes, for example, a 7.5% increase in equity prices coupled with 0.3% increase in gilt yields as at 30 March 2007, would deliver an aggregate surplus (all else being equal) of £123bn. An equivalent worsening in markets would lead to a deficit of £21bn. (A 7.5% fall in the FTSE All Share Index from the 30 March 2007 level would be equivalent to a drop of around 250 points in the index.)

Table 5.1

Analysis of expected movement in s179 funding levels from a base aggregate surplus of £53bn at 30 March 2007

s179 assets less s179 liabilities £bn							
Equity markets	Gilt yields						
	-0.30%	-0.20%	-0.10%	0.00%	0.10%	0.20%	0.30%
7.50%	52	65	78	90	101	113	123
5.00%	40	53	65	77	89	100	111
2.50%	28	41	53	65	77	88	99
0.00%	16	28	41	53	65	76	87
-2.50%	3	16	29	41	52	64	74
-5.00%	-9	4	16	28	40	51	62
-7.50%	-21	-8	4	16	28	39	50

Source: the Pension Protection Fund

Tables 5.2 and 5.3 below show the equivalent sensitivity of s179 assets and liabilities to movements in gilt yields and equity indices.

Table 5.2

Analysis of expected movement in s179 assets
from a base of 100 at 30 March 2007

s179 assets relative to base of 100							
Equity markets	Gilt yields						
	-0.30%	-0.20%	-0.10%	0.00%	0.10%	0.20%	0.30%
7.50%	106	106	105	105	105	105	104
5.00%	104	104	104	103	103	103	103
2.50%	102	102	102	102	101	101	101
0.00%	101	101	100	100	100	99	99
-2.50%	99	99	99	98	98	98	98
-5.00%	97	97	97	97	96	96	96
-7.50%	96	95	95	95	95	94	94

Source: the Pension Protection Fund

Table 5.3

Analysis of expected movement in s179 liabilities
from a base of 100 at 30 March 2007

Change in Gilt yields	-0.30%	-0.20%	-0.10%	0.00%	0.10%	0.20%	0.30%
s179 liabilities relative to 30 March level (=100)	106.4	104.2	102.1	100.0	98.0	96.1	94.2

Source: the Pension Protection Fund

Sensitivity analysis for schemes in deficit on a s179 basis

Table 5.4

Analysis of expected movement in s179 funding levels from a base total deficit of £34bn as at 30 March 2007, excluding schemes in surplus

s179 assets less s179 liabilities £bn							
Equity markets	Gilt yields						
	-0.30%	-0.20%	-0.10%	0.00%	0.10%	0.20%	0.30%
7.50%	-39	-33	-29	-25	-22	-19	-16
5.00%	-43	-37	-32	-28	-24	-21	-18
2.50%	-47	-41	-36	-31	-27	-23	-20
0.00%	-52	-45	-39	-34	-30	-26	-23
-2.50%	-57	-50	-44	-38	-33	-29	-25
-5.00%	-62	-55	-48	-42	-37	-32	-28
-7.50%	-68	-60	-53	-47	-41	-36	-32

Source: the Pension Protection Fund

Table 5.4 shows how the underfunding position of schemes in deficit (on a s179 basis) varies with gilt yields and equity markets. It can be seen that if gilt yields rise by 0.3% and equity markets by 7.5% then the deficit of these schemes would fall to £16bn. Meanwhile, if gilt yields fell by 0.3% and equity markets by 7.5% the total deficit would rise to £68bn.

It can be seen from table 5.5 that as equity markets fall the s179 assets of schemes in deficit rise. For example, a fall in equity markets of 7.5% results in a 22% increase in the level of assets. This is because the fall in equity markets results in an increase in the number of schemes in deficit, causing the aggregate value of assets of schemes in deficit to increase. At a scheme level the relative value of assets falls as expected.

Table 5.5

Analysis of expected movement in s179 assets from a base of 100 at 30 March 2007 excluding schemes in surplus

s179 assets relative levels							
Equity markets	Gilt yields						
	-0.30%	-0.20%	-0.10%	0.00%	0.10%	0.20%	0.30%
7.50%	116	101	83	71	64	56	51
5.00%	119	105	98	79	68	62	54
2.50%	124	115	102	95	77	66	61
0.00%	129	121	113	100	93	74	64
-2.50%	137	127	118	102	98	90	73
-5.00%	151	135	124	118	100	96	88
-7.50%	158	146	131	122	116	98	93

Source: the Pension Protection Fund

5.4 Deficit reduction payments

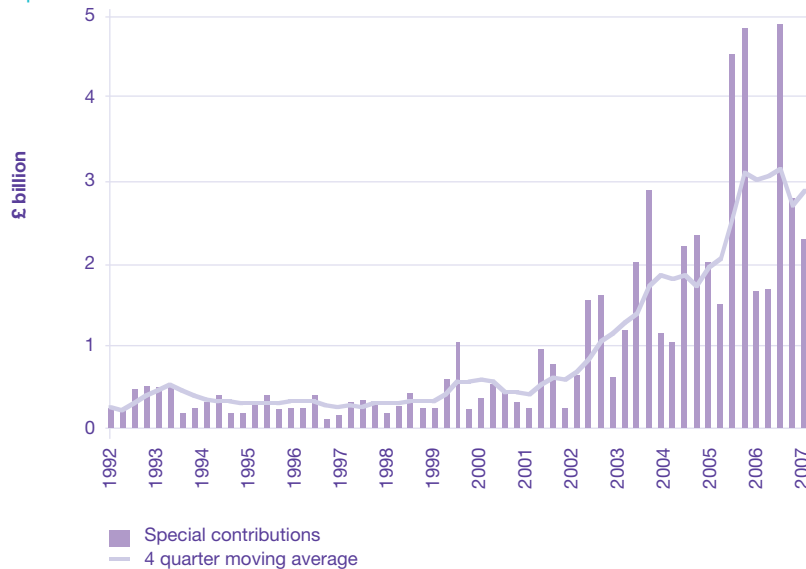
Schemes in the Purple 2007 dataset had certified approximately £9bn of special contributions to reduce deficits by 4 April 2007. These contributions were certified to the PPF for the purpose of enabling a more up-to-date assessment to be made of the scheme funding position and with the extra contributions increasing the scheme assets and so reducing the risk-based levy. The deficit reduction contributions were not paid only by companies sponsoring the largest schemes; some 42% of the £9.2bn was paid by employers sponsoring schemes with fewer than 10,000 members.

The certified special contributions to the PPF are those since the last formal actuarial valuation. Once a new valuation is completed, the special contributions are subsumed in scheme asset values. Hence, the estimate of the certified special contributions reflects not just the special contributions made but also the different valuation dates. For example, consider two schemes where the sponsoring employer had made the same special contributions between 2003 and 2006. If the first sponsoring company had an old valuation while the second had a recent valuation, then the certified special contributions of the first would be larger than those of the second.

However, a time series of special contributions is produced by the ONS based on the MQ5 data (chart 5.7).⁸ Special contributions increased significantly after 2002 as schemes attempted to repair their deficits. There was a further big increase after 2004, possibly reflecting the potential to reduce the PPF levy, and the requirement under the Pensions Act 2004 for schemes to set technical provisions and to have a recovery plan if in deficit. In the last two years special contributions have been running at an annual rate of around £13bn.

⁸ The data from the ONS MQ5 enquiry is based on a sample of 350 pension schemes. Around 100 of these are local authorities and the other 250 contain public and private corporations (the Pension Protection Fund database excludes local authorities and public corporations). The sample has total assets of £800bn, which is nearly as big as the PPF database, as it includes all schemes with more than 20,000 members. The sample is made up of what are known as 'superannuation and self-administered pension funds'. A self-administered pension scheme is defined as an occupational pension scheme with units invested in one or more managed schemes or unit trusts; a superannuation pension fund can be defined as an organisational pension programme created by a company for the benefit of its employees. The sample may also contain some defined contribution schemes.

Chart 5.7
Special contributions



Source: Office for National Statistics

5.5 Benefit and inflation effects

If the assumed rate of inflation increases by 0.1% then s179 liabilities for the schemes in the Purple 2007 dataset increase by approximately 1.0% or £6.5bn. This is as a result of higher increases applying to benefits in deferment for non-pensioners and higher increases applying in payment with respect to post-1997 benefits for both existing and future pensioners. This calculation assumes that nominal yields are unchanged so that real yields reduce as a result of the increase in inflation. Conversely, if the assumed rate of inflation decreases by 0.1% then s179 liabilities would fall by approximately 1.0% or £6.4bn. If it is assumed that real yields are constant so that nominal yields fall as inflation declines, then liabilities increase by around 1.0% (£6.1bn): the lower benefit levels compared with the central scenario are more than offset by the impact of the lower yield as a discount factor.

5.6 Impact of changes in expected longevity

One of the key assumptions required to place a value on a pension scheme's liabilities is the future mortality experience of the membership. The value of the liabilities is very sensitive to the mortality assumptions adopted - for example, if the life expectancy for a male currently aged 60 is understated by two years, depending on the assumptions adopted, this could understate the value of his pension by around 5%.

A mortality assumption has two constituent parts:

- a) The rate of mortality currently being experienced.
- b) The allowance to be made for future improvements in mortality (ie increasing longevity).

For the valuation of a typical large pension fund, the starting point for determining the assumption for current mortality would be an investigation into the experience of the fund's pensioners over the period since the previous valuation. This would then be compared with a standard table, which would then be used with appropriate adjustment based on the scheme's experience. Smaller schemes with insufficient experience are likely to rely on industry data such as that published by the Continuous Mortality Investigation (CMI) of the UK Actuarial Profession. In addition, assumptions must be made about the rate of future improvement in mortality rates for which no scheme specific data will be available.

In December 2002, the CMI published Working Paper 1 which contained three alternative levels of future improvement over and above those already allowed for in standard table PA92. Analysis of data collected over 50 years revealed a particularly rapid improvement during the 1980s for a cohort of people born around 1926. These projections assume that additional amounts of improvement experienced by the cohort generation will continue for a period, tailing off to zero additional improvement by:

- 2010 for the short cohort projection;
- 2020 for the medium cohort projection; and
- 2040 for the long cohort projection.

However, the data collected in recent years has not shown any indication of the 'cohort effect' starting to wear off, questioning the validity of the short cohort projection. Moreover, current evidence would suggest that it is unlikely that cohort improvements will cease by 2020. Some actuaries are now applying an underpin to the rates of future improvement to reflect their opinion that improvements will continue in the long term.

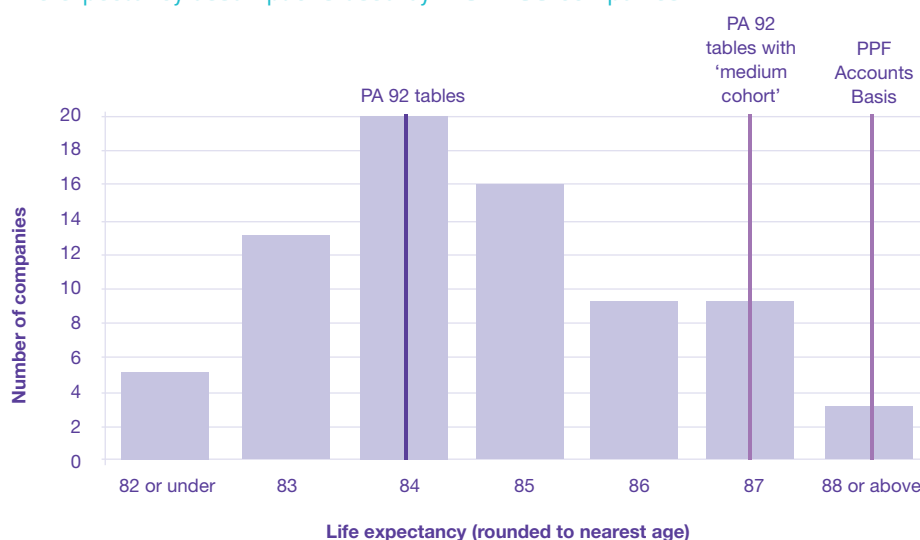
The PPF's s179 basis is required by legislation to reflect the assumptions used by insurance companies to price their immediate and deferred annuity business. The current s179 basis, adopted in April 2005, uses the same mortality assumptions for all schemes, namely the PA92 tables with 'medium cohort' improvements, reflecting the assumptions typically used by insurance companies at that time. When this basis is next reviewed, it is likely that a stronger assumption will be adopted reflecting trends in the market.

The 'PA92 with medium cohort' assumptions used for s179 valuations were at the top of the range of the life expectancy assumptions given by those FTSE 100 companies who disclosed their longevity assumptions in 2006 in their company accounts (see chart 5.8). FRS17 assumptions are the responsibility of company directors and so are not necessarily the same as those used by trustees for the pension scheme's actual funding.

The mortality basis used by the PPF in its recently published accounts as at 30 March 2007 uses PA00 tables and long cohort improvements with an underpin of 1.5% per year for males and 1.0% per year for females. This basis results in a life expectancy of 89 for a male currently aged 60.

Chart 5.8

Life expectancy assumptions used by FTSE 100 companies



Source: the Pension Protection Fund using data from Lane Clark & Peacock

Funding sensitivities... continued

Chart 5.9 below compares the results of the 2006 and 2007 surveys.

Chart 5.9

Life expectancy assumptions used by FTSE 100 companies:
2006/2007 comparison



Source: the Pension Protection Fund using data from Lane Clark & Peacock

In the Pensions Regulator's analysis of recovery plans referred to in chapter two it was found that the post-retirement mortality assumptions were predominantly based around the medium cohort adjustments to the '92' series of the CMI pension tables. Table 5.6 is based on recovery plans that had been submitted to the regulator up to the end of July 2007, on valuations with effective dates falling within the last quarter of 2005 and the first quarter of 2006.

Because these valuation dates were around two years in the past, and prior to the recent debate on what might be considered prudent, the regulator would expect future recovery plans to take into account more recent arguments for strengthening assumptions to reflect the latest data suggesting that mortality is continuing to decline at historically high rates.

Table 5.6

Percentage distribution of allowance for the cohort effect

Allowance for the cohort effect	
No cohort	33%
Short cohort	11%
Medium cohort	55%
Long cohort	<0.5%
Not specified	<0.5%

Column may not sum to 100% due to rounding

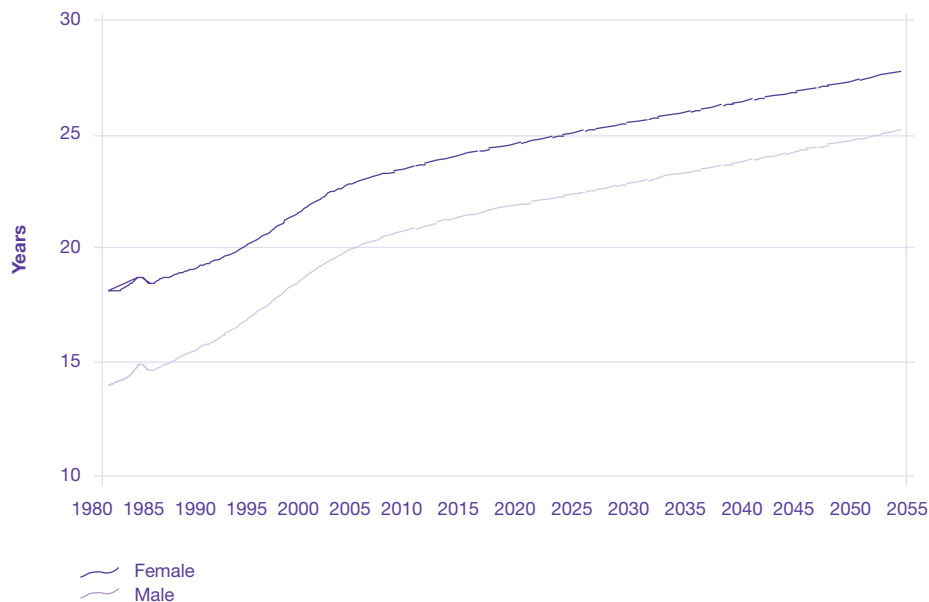
Base: 1,138 schemes at 30 July 2007

Source: the Pensions Regulator

Chart 5.10 below shows estimates of future life expectancy on the 2006-based principal population projections of the Office for National Statistics (ONS) published in October 2007. In these estimates, average life expectancy at age 65 for males has risen from 14.2 years in 1982 to 20.7 years in 2007. This is expected to increase to 22.6 by 2025 and 25.5 by 2056.

Chart 5.10

United Kingdom cohort life expectancy for males and females at 65



Source: Office for National Statistics

In July 2007, the CMI published a library of mortality projections in Working Paper 27. The paper includes tables of values that could be placed on a pension depending on the mortality assumption adopted. Table 5.7 uses the CMI data for the value of £1 per year of pension for a male aged 65 in 2005 using the PCMA00 standard tables with a variety of projections to show the impact on liability values of moving from the medium cohort to alternative projections.

Table 5.7

Impact on liability values of alternative projections

Projected level of future improvements	Value placed on £1 p.a. of pension	Relative levels of liabilities
None	11.944	92%
92 series	12.542	96%
Short cohort	12.815	98%
Medium cohort	13.033	100%
Long cohort	13.503	104%
Medium cohort 1% underpin	13.109	101%
Average of medium and long cohorts	13.264	102%
Average of medium and long cohorts with 1.5% underpin	13.378	103%
PPF accounts	13.299	102%

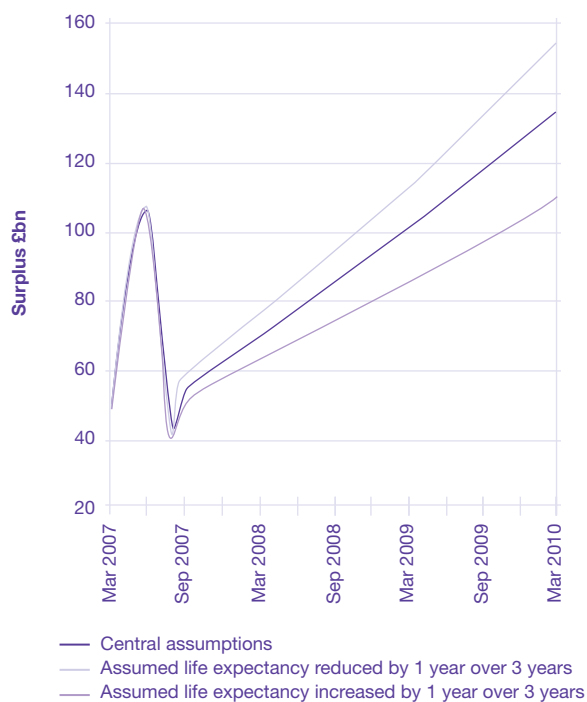
Based on a male aged 65 in 2005 and a discount rate of 5% per year.

Source: CMI WP27 and PPF calculations illustrating relative levels of liabilities.

Chart 5.11 illustrates the sensitivity of the projected aggregate surplus level to changes in the longevity assumption underlying the value of liabilities. The base case takes the funding position as at 30 March 2007, then models asset performance according to actual market conditions between March 2007 and September 2007 and liability values based on actual bond yields. Thereafter bond yields are assumed to remain constant at September 2007 levels and equities are assumed to return 3% over gilts. The assumption for future longevity has then been adjusted to allow for assumed life expectancy either to increase or decrease by one year over the three-year period from 30 March 2007. The impact is to increase or decrease the estimated projected total aggregate surplus by around £22bn at 31 March 2010.

Chart 5.11

Effect on surplus of changes in mortality assumptions



Source: the Pensions Regulator and the Pension Protection Fund

Insolvency risk⁹

6.1 Summary

- Both the Pensions Regulator and the PPF use various measures of insolvency risk in evaluation and modelling. The PPF uses Dun & Bradstreet (D&B) to provide measures of insolvency probability for the purposes of the risk-based levy.
- The weighted average one-year ahead insolvency probability for the Purple 2007 dataset of schemes was lower in March 2007 (0.31%) than in March 2006 (0.38%).
- Corporate insolvencies continued to trend lower in 2006 and 2007 due to a strong economic environment. However, corporate debt and income gearing have risen in recent years.

6.2 Introduction

This chapter examines the insolvency risk of sponsoring companies of DB schemes. Monitoring corporate health is an important task for both the PPF and the regulator as part of the common mandate to protect members' benefits. For the PPF, an eligible scheme enters assessment upon a qualifying insolvency event in relation to the employer, while the regulator is interested in how a change in an employer's fortunes might affect its ability to meet members' benefits and cope with future uncertainties.

This chapter first outlines the various ways in which insolvency risk is gauged by the Pensions Regulator and the PPF. D&B provide insolvency probabilities to the PPF for use in the calculation of the risk-based levy, and these probabilities are used to provide a snapshot of insolvency probabilities for our sample as at 30 March 2007. Finally, trends in the UK corporate sector are examined.

⁹ This section examines insolvency risk among the Purple 2007 dataset as at 30 March 2007. Note that 81 of the 5,892 schemes were removed from the Purple 2007 dataset for the purposes of analysing insolvency risk owing to the fact that these schemes did not have an insolvency probability as at 31 March 2006 and/or 30 March 2007. The remaining sub-sample of 5,811 schemes for which we have valid insolvency probabilities represents 99% of the total dataset of schemes and 99% of all s179 liabilities of the wider dataset. The majority of comparisons made in this chapter are with the insolvency risk of schemes in the Purple 2007 dataset as at 31 March 2006.

6.3 Measuring insolvency risk

The PPF and the regulator are particularly interested in insolvency risk at a company level. Both organisations use various measures of insolvency risk in assessment and modelling, including information from D&B, Moody's, Standard and Poor's (S&P) and Fitch Ratings.

The probability of a sponsoring employer of an eligible DB scheme becoming insolvent over the next year is one of the key inputs in the PPF's calculation of the risk-based levy. For this purpose, the PPF uses D&B credit scores to provide measures of insolvency probability. An outline of the D&B methodology is provided in Purple 2006 (page 51). For multi-employer schemes, the PPF adapts the D&B probabilities to create its own calculations of insolvency risk, which take account of the differing circumstances of the scheme's employers. It is important to note that in 2007-2008, the PPF introduced a new method for calculating the insolvency risk associated with multi-employer schemes.

For the 2007-2008 levy collection, the weighted average probability of insolvency for the given group of employers is calculated and applied for each multi-employer scheme. In 2006-2007, the weighted average insolvency probability for a multi-employer scheme was compared with the probability of the employer in the group with the most scheme members, and the lower probability used.

In section 6.4 overleaf, insolvency risk for the sample of schemes in the Purple 2007 dataset as at 30 March 2007 has been calculated using the new method adopted for the 2007-2008 levy year, while insolvency risk as at 31 March 2006 has been calculated using the method adopted for the 2006-2007 levy year.

6.4 Insolvency risk and the PPF

This section examines the insolvency risk of companies that sponsor PPF-eligible DB schemes (ie those eligible for protection by the PPF) with a view to providing some indication of the risk faced by the PPF in terms of corporate insolvency. In addition, the PPF is also interested in investigating the relationship between the insolvency probabilities of sponsoring employers and the characteristics of their pension schemes. Unless otherwise stated, all the calculated insolvency probabilities used in this section are unweighted averages.

Changes in insolvency probability

For the Purple 2007 dataset, there has been a small fall in the average one-year ahead D&B insolvency probability from March 2006 to March 2007. The weighted average insolvency probability (weighted by s179 liabilities) fell to 0.31% in March 2007 from 0.38% in March 2006, while the unweighted average fell to 0.76% in March 2007 from 0.88% in March 2006. It should be noted that there were significant downward adjustments to the D&B scores for March 2006 from the levels in Purple 2006, reflecting the fact that D&B obtained better data on some companies. The weighted average insolvency probability in Purple 2006 (as at 31 March 2006) was 0.7%, while on an unweighted basis it was 1.2%.

Insolvency probability and size

There is a broad tendency for large schemes (by scheme members and liabilities) to be associated with low insolvency probabilities. This is especially highlighted in the 2007 insolvency probabilities (charts 6.1 and 6.2). Large schemes tend to be associated with large companies, and large companies tend to have lower insolvency probabilities. Chart 6.1 illustrates that the insolvency probability by scheme and liability size has fallen in 2007 in all categories apart from schemes with memberships between 1,000 and 4,999, where insolvency probabilities saw a slight increase.

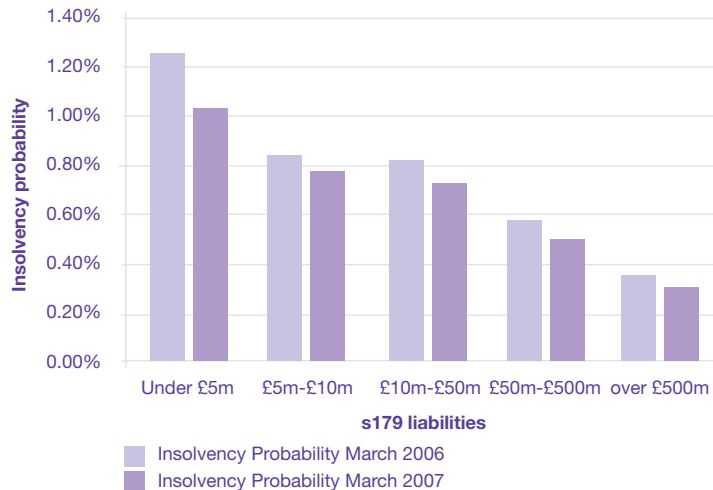
Chart 6.1

Average insolvency probability by scheme size



Chart 6.2

Average insolvency probability by s179 liability level (all schemes)



Source: the Pension Protection Fund and the Pensions Regulator

Insolvency probabilities for the sponsoring employers of schemes in deficit are generally higher than for those schemes in surplus, after allowing for the fact that larger companies tend to sponsor schemes which have larger liabilities (chart 6.3).

Chart 6.3 illustrates that for schemes with s179 liabilities of less than £50m the insolvency probability is lower for schemes in surplus than for those in deficit. For those schemes with liabilities greater than £50m, insolvency probability is lower for schemes in deficit than for those in surplus. This may be because schemes with large, profitable sponsors feel that they are able to run deficits given the strength of the employer's covenant.

Chart 6.3

Average insolvency probability by s179 liability level (schemes in deficit and schemes in surplus)



Source: the Pension Protection Fund and the Pensions Regulator

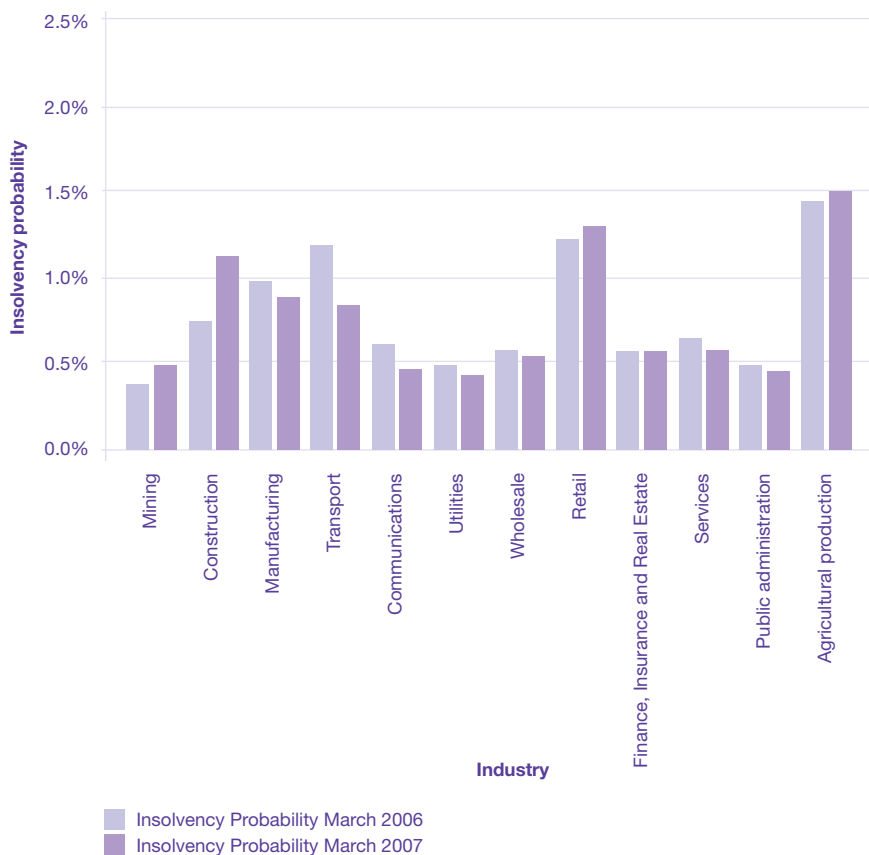
Insolvency risks... continued

Insolvency probability by industry

As used by D&B, the 1972 US Standard Industry Classification (SIC) codes have been used here to group employers by industry. Chart 6.4 below shows that the industries with the highest probability of failure in 2007 are agricultural production, retail trade and construction, which is very similar to the picture in 2006.

Chart 6.4

Average insolvency probability by industry



Source: D&B, Pension Protection Fund calculations, SIC code classifications

Comparing 2006 and 2007 insolvency probabilities, deterioration in the retail trade, agricultural production, mining and construction can be seen. Small improvements can be seen in the other industry types.

6.5 UK corporate sector trends

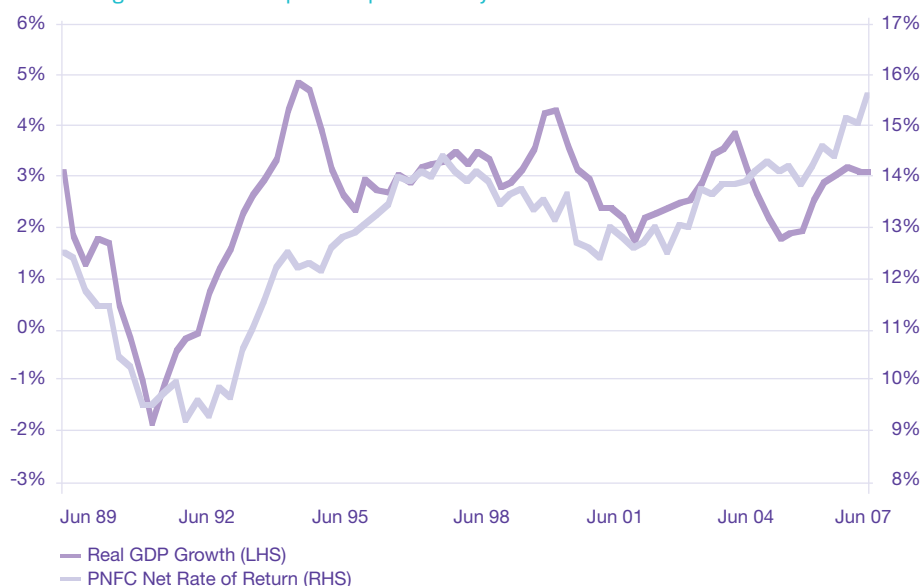
Adverse changes in macroeconomic and financial conditions or within specific business sectors can threaten the stability of DB pension schemes.

Corporate profitability in the UK has continued to improve since the most recent trough in earnings at the end of 2002. The growth has been underpinned by robust economic growth in the UK (chart 6.5). The aggregate net profits of private non-financial corporations rose to more than £181bn over the year to June 2007, accounting for around 13% of GDP and representing a nominal increase in profits of 9.7% - well above the 6.4% nominal rate of growth in the economy during the same period. The increase in corporate profits meant the annual net rate of return¹⁰ earned by non-financial corporations rose to a record high of 15.7% in the June quarter of 2007.

Against a backdrop of strong corporate profitability, it is unsurprising that company insolvencies have also fallen (chart 6.6). According to figures produced by the Insolvency Service, only 0.62% of active UK companies went into liquidation in the 12 months ending December 2006, while the rate of company liquidations has fallen further in 2007 to 0.57% in the June quarter. This is the lowest rate of liquidations since the series commenced in 1984 and is well below the average rate of liquidations in the past 10 years (0.95%).

Chart 6.5

UK GDP growth and corporate profitability

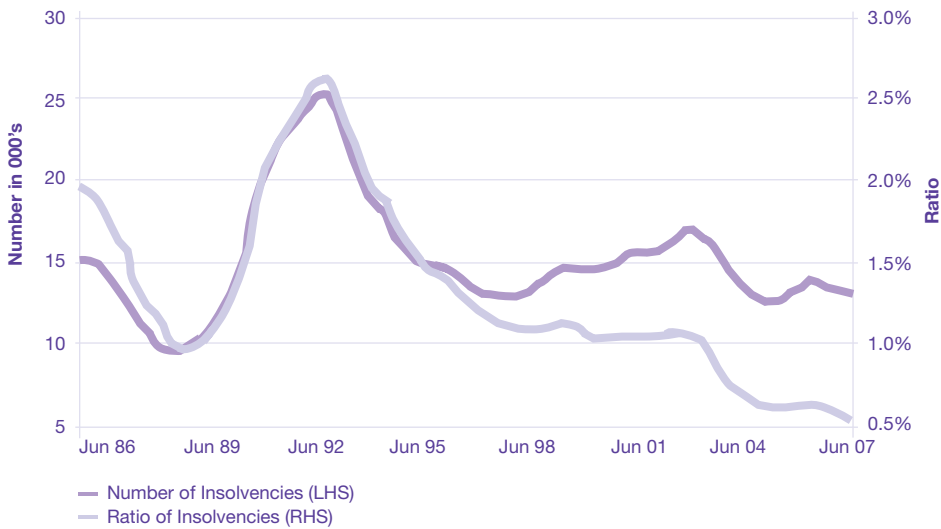


Source: Office for National Statistics, PNFC - Private Non-Financial Corporations

¹⁰ The Office for National Statistics defines the net rate of return as the return on capital employed within a firm. That is, the value of profits (allowing for depreciation) divided by the value of fixed assets (allowing for depreciation) and inventories.

Insolvency risks... continued

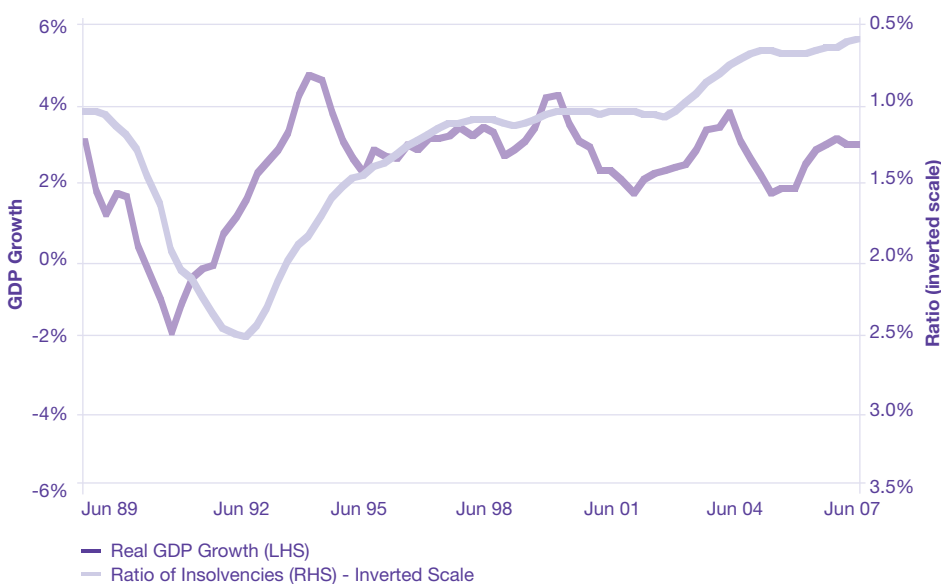
Chart 6.6
UK corporate insolvencies



Source: Insolvency Service

Chart 6.7 shows that changes in GDP growth have tended to lead changes in corporate insolvency rates. However, the strength of this relationship appears to have weakened in recent years, possibly reflecting structural changes in the economy which have led to low rates of corporate default (see page 58 of Purple 2006 for further details).

Chart 6.7
UK corporate insolvencies and GDP



Source: Insolvency Service

Although corporate conditions are buoyant at present, risks remain. In particular, low borrowing costs and an appetite for high-yield assets has fostered high levels of debt-funded investment by companies in recent years. The ratio of private non-financial corporations' debts (loans and debt securities) to their stock of financial assets stood at 85% in the second quarter of 2007, close to record levels last reached in the early 1990s.

However, the rate of growth in corporate debt is beginning to slow and debt servicing is improving. Indeed, the ratio of private non-financial corporations' net interest payments to their gross operating surpluses (a measure of income gearing) fell back to 17% in the June quarter of 2007 having briefly risen to a record high of 18.4% in the first quarter.

While corporate earnings in the UK remain high at present, the rise in company debt poses some risk in the event of a sharper than expected economic slowdown, particularly in the light of recent adverse changes in credit markets. While there is currently little indication that the 'credit crunch' may be placing companies at greater risk of default, the reassessment of risk in financial markets is likely to tighten liquidity and push up the cost of capital for companies.

Asset allocation¹¹

7.1 Summary

- Equities (60%) and gilts and fixed interest (29%) continue to dominate schemes' holdings of assets in 2007 (61% and 28% respectively in Purple 2006).
- Although equities dominate portfolios overall, there is a clear tendency for the proportion of assets held in gilts and fixed interest to rise as scheme maturity increases. Additionally, there is a greater preference for fixed income assets among larger and well funded schemes.
- Office for National Statistics (ONS) data shows that schemes continued to disinvest from equities in 2006, although the share of equities in scheme portfolios has risen due to strong market performance during 2006. Meanwhile, schemes continued to invest in fixed income and other asset classes.

7.2 Introduction

This chapter analyses the asset allocation of private sector DB pension schemes using data obtained from scheme returns provided to the Pensions Regulator. It describes how asset allocation varies with scheme size, maturity, insolvency probability and funding level. It also uses data from the ONS to set out longer-term trends in asset allocation, in particular the continued decline in the percentage of assets that schemes hold in equities and the rise in the percentage held in gilts and fixed interest asset classes.

The broad picture of asset allocation in the Purple 2007 dataset is similar to that in Purple 2006 (table 7.1). The largest share of assets, based on a weighted average of each scheme's asset allocation, is in equities (60.0%), a slightly smaller percentage than in Purple 2006 (61.1%). There is also a significant proportion in gilts and fixed interest securities (28.8%), a slightly higher percentage than in Purple 2006 (28.3%). The percentage of assets held in property has risen from 4.3% to 5.4% while that in 'other investments' has fallen slightly.¹² The final column of the table shows the asset allocation on the basis of a simple average of each scheme's asset allocation from the extended Purple 2006 dataset. The use of insurance policies by small schemes means that the share in insurance policies is much higher while the proportions in gilts and equities are much smaller.¹²

¹¹ This chapter examines asset allocation among the Purple 2007 dataset of 5,892 schemes as at 30 March 2007. The majority of comparisons made in this chapter are with the original Purple 2006 dataset. Section 7.4 analyses data from the Office for National Statistics.

¹² The current scheme return does not ask schemes to break down investments into categories such as hedge funds or report the use of derivative contracts. This means that the full extent of exposure to market volatility is difficult to tell. Thus far the benefits of supplying this information (which is provided in other EU jurisdictions) have not been judged to outweigh the costs.

Table 7.1

Average asset allocation for all schemes in Purple 2006 and Purple 2007

Asset class	Proportion of total assets (%) extended Purple 2006 dataset	Proportion of total assets (%) Purple 2006	Proportion of total assets (%) Purple 2007	Simple average: extended Purple 2006 dataset
Equities	61.1	61.1	60.0	52.6%
Gilts and fixed interest	27.8	28.3	28.8	22.6%
Insurance policies	0.9	0.9	0.7	14.9%
Cash and deposits	2.4	2.3	2.4	3.9%
Property	5.0	4.3	5.4	2.1%
Other investments	2.7	3.1	2.7	3.6%

Source: the Pension Protection Fund and the Pensions Regulator

In the scheme return, pension schemes provide the percentage of assets in each of the six asset classes. In order to arrive at the overall asset allocation proportions given in the first three columns, each scheme's asset allocation has been weighted by the size of each scheme's assets in total assets. The final column is a simple average.

7.3 Scheme size

Chart 7.1 below shows the average asset allocation subdivided by scheme size measured by the value of assets for all schemes in the Purple 2007 dataset. As for the original Purple 2006 dataset, there is a tendency for the proportion of assets held in gilts and fixed interest to increase as the size of the scheme (measured by s179 assets) increases while less is invested in insurance policies. Apart from the very small schemes (assets of less than £5m) the equity share is fairly constant across the size groups, at around 60%.

Chart 7.1

Unweighted average s179 asset allocation of schemes subdivided by scheme size (measured by value of assets)



Source: the Pension Protection Fund and the Pensions Regulator

Some schemes in the dataset are wholly insured schemes. These schemes are defined as those which have no investments other than those qualifying insurance policies specified in regulation. There are 577 of these schemes in the dataset (mainly small schemes) and they have been excluded from the analysis in the remainder of this chapter.

7.4 Funding level

In Purple 2006, there was a tendency for the proportion of assets held in gilts and fixed interest to increase with the level of funding, calculated as assets divided by liabilities. This tendency is just as clear this year, and the best funded schemes still have a smaller proportion held in equities compared with less well funded schemes.

Chart 7.2

Weighted average asset allocation by s179 funding level



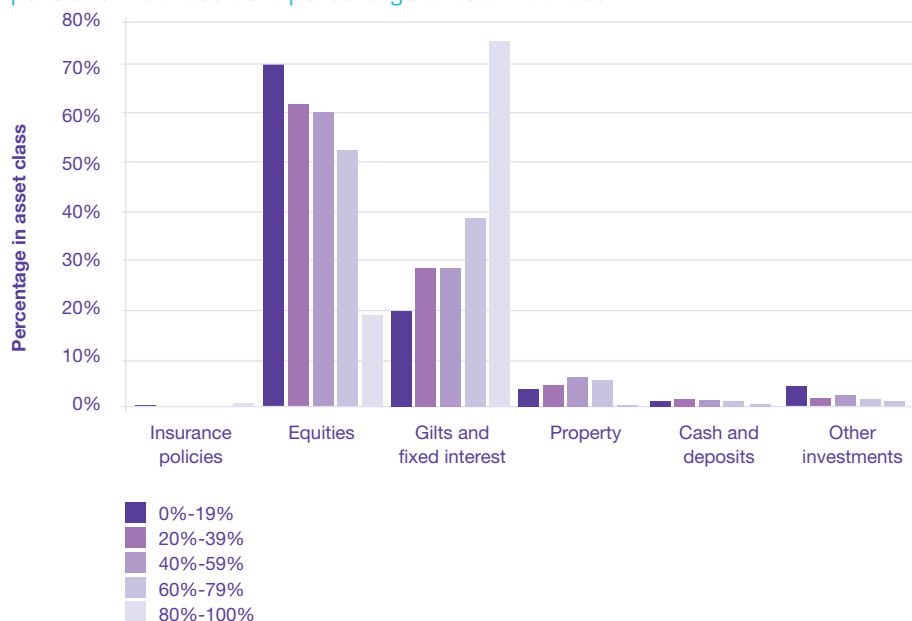
Source: the Pension Protection Fund and the Pensions Regulator

7.5 Scheme maturity

Chart 7.3 illustrates asset allocation according to current pensioner liabilities as a proportion of total liabilities (ie the proportion of liabilities that are pensions in payment), an approximation for scheme maturity.¹³

Chart 7.3

Weighted average asset allocation of schemes by current pensioner liabilities as a percentage of total liabilities



Source: the Pension Protection Fund and the Pensions Regulator

It is expected that as schemes mature, assets invested in gilts, bonds and cash will increase, with a corresponding decrease in the amount invested in equities. This reflects a desire to match pension payment profiles more closely and also to increase liquid funds available to pay pensions. The data supports this expectation, as the proportion of assets held in gilts dramatically increases as scheme maturity increases. This is at the expense of the proportion held in equities.

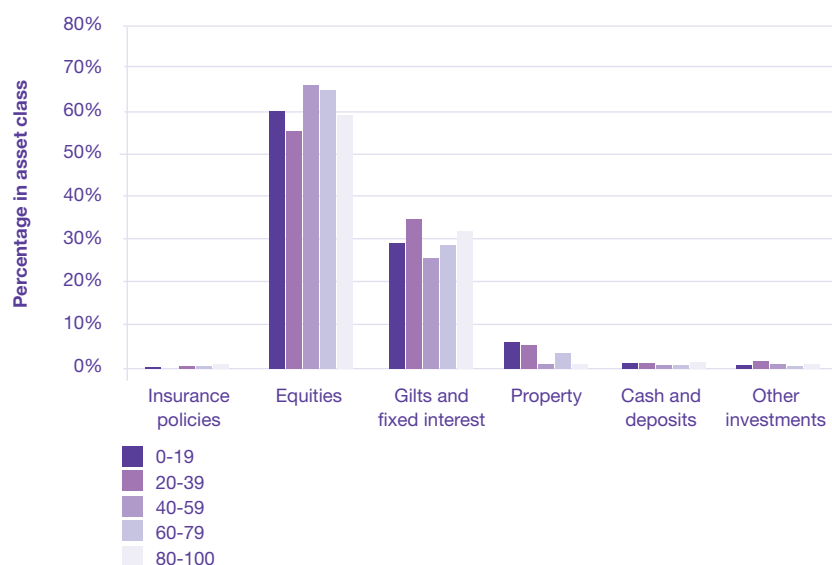
¹³ In the most mature group, there is one scheme that makes up 76% of the liabilities, and this scheme has 46% of its assets invested in gilts and fixed interest assets. Excluding this scheme reduces the gilts share to 20% and increases the equities share to 42%.

7.6 Insolvency probability

There seems to be no clear relationship between asset allocation of schemes in the Purple 2007 dataset and their sponsor's insolvency probability using D&B insolvency scores (chart 7.4).¹⁴

Chart 7.4

Weighted average asset allocation of schemes arranged by insolvency score



Source: the Pension Protection Fund and the Pensions Regulator

¹⁴ This chart excludes 81 schemes for which insolvency probabilities were not available. These 81 schemes are relatively small in size, with £6bn of s179 liabilities between them. Compared with the full dataset of 5,892 schemes in Purple 2007, this sub-sample of schemes for which we have valid insolvency probabilities represents 99% of schemes in the Purple 2007 dataset and 99% of all s179 liabilities of the Purple 2007 dataset.

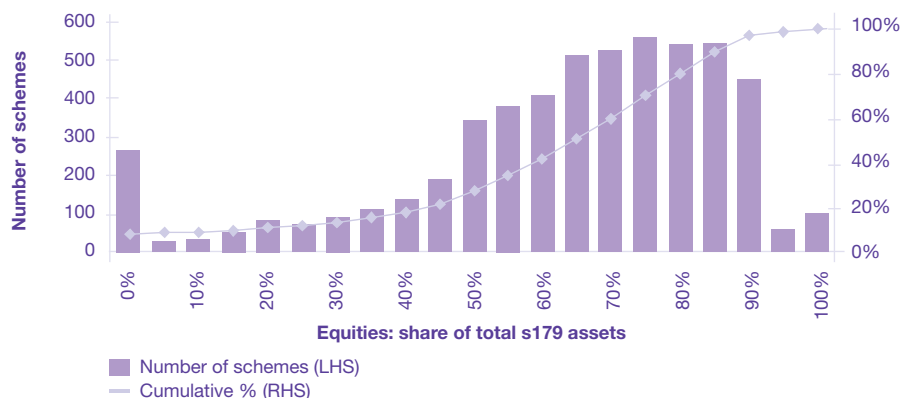
7.7 Distribution of assets across schemes

It is important to consider not only the average allocation of assets according to different characteristics but also whether there are many schemes that significantly differ from the average. An insignificant number of schemes hold substantial investments in property, cash and deposits and other investments. Average asset allocation with respect to these asset classes is small for the majority of schemes.

Chart 7.5 illustrates the distribution of equity holdings for the Purple 2007 dataset, still excluding the wholly insured schemes. Around 5% of schemes do not have any equities in their portfolio at all (261 out of 5,315). 21% of all schemes have a share of equities that is between 80% and 90%, and 63% of schemes hold more than 60% of their assets in equities.

Chart 7.5

Histogram of equities and cumulative percentage

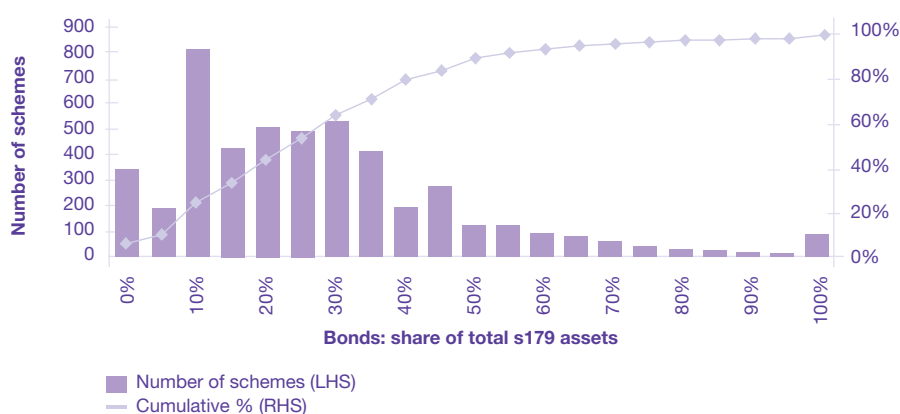


Source: the Pension Protection Fund and the Pensions Regulator

As illustrated in chart 7.6, there are 349 schemes (7%) that do not have any funds invested in fixed interest securities, while around 22% of schemes hold between 10% and 20% in bonds. Fewer than 13% of schemes hold more than half of their funds in gilts and fixed interest assets.

Chart 7.6

Histogram of gilts and fixed interest and cumulative percentage



Source: the Pension Protection Fund and the Pensions Regulator

7.8 Recent trends

Interpreting trends in the asset allocation of DB pension schemes can be difficult given that the proportion invested in particular asset classes can be affected by flows between asset types, changes in asset prices (or market conditions), or a combination of the two.

In order to overcome the problem of distinguishing between changes in active and passive asset allocation, it helps to examine flows into various asset classes as well as the share of total assets taken using data from the ONS.¹⁵

Although the sample of data used in Purple 2007 does show a small change in scheme asset allocation (table 7.1) as at 30 March 2007, the ONS data¹⁶ shows that there has not been any major change in schemes' aggregate asset allocation since the publication of last year's Purple Book. This may be due to the ONS sample containing local authority schemes and defined contribution schemes. As highlighted in Purple 2006 (page 66), a marked shift is apparent over the longer term, particularly in the proportion of assets held in equities by DB schemes (chart 7.7). Just over 60% of scheme assets were held in equities in 2006, which is a little higher than in 2005 (57%).

¹⁵ The data from the ONS MQ5 enquiry is based on a sample of 350 pension schemes. Around 100 of these are local authorities and the other 250 contain public and private corporations (the PPF database excludes local authorities and public corporations). The sample has total assets of £800bn, which is nearly as big as the PPF database. It includes all schemes with more than 20,000 members. The sample is made up of what are known as 'superannuation and self-administered pension funds'. A self-administered pension scheme is defined as an occupational pension scheme with units invested in one or more managed schemes or unit trusts; a superannuation pension fund can be defined as an organisational pension programme created by a company for the benefit of its employees. The sample may also contain some defined contribution schemes.

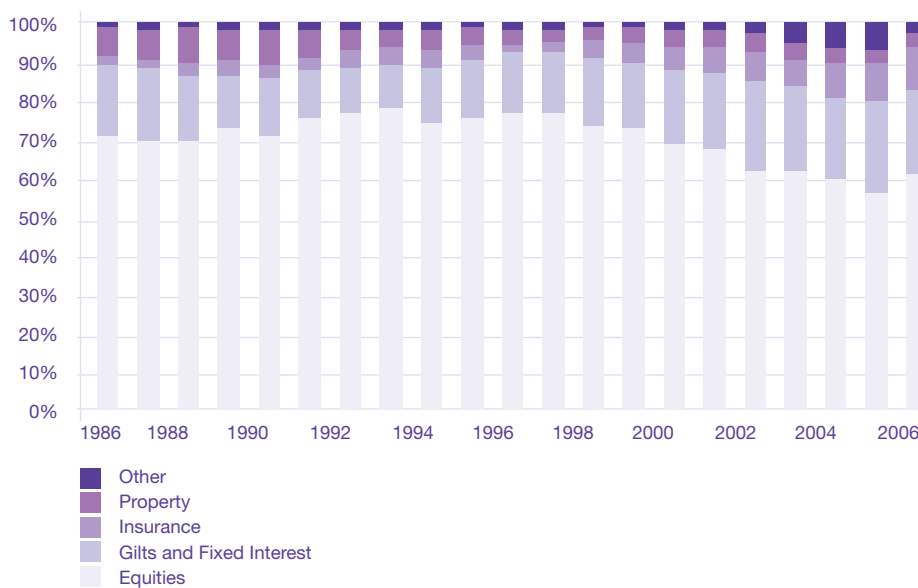
¹⁶ At the time of writing this data does not include any estimates of assets held in cash.

Asset allocation... continued

Meanwhile, schemes' holdings of gilts and fixed interest securities as a percentage of their total asset allocation has risen. Nearly 22% of scheme assets were made up of gilts and fixed interest in 2006, up from 20% in 2005 and from a share of 15% a decade ago. Chart 7.7 also shows that insurance policies have grown in appeal over the past decade.

Chart 7.7

Asset allocation by percentage share and asset class

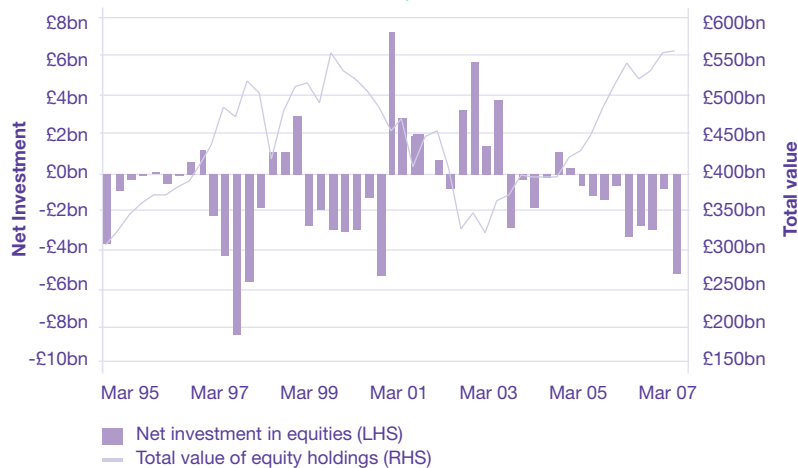


Source: Office for National Statistics

It is difficult to draw conclusions about schemes' investment behaviour from this data because the value of individual asset classes as a proportion of total scheme assets can vary from year to year depending on market conditions. Chart 7.8 shows the net investment of pension schemes in equities relative to the total value of their equity holdings. In 2006 alone, there was a net outflow of £9.6bn from equities confirming that pension schemes have been shifting out of equities over the past decade. In contrast, schemes' net investment in gilts and fixed interest securities amounted to an inflow of £23.8bn in 2006, while net investment in 'other' assets was £13.5bn.

Chart 7.8

Pension schemes' investment in equities



Source: Office for National Statistics

Despite the disinvestment from equities, the value of schemes' equity portfolios has risen recently due to strong market performance.¹⁷ Hence, the value of equities as a proportion of total scheme assets has remained steady at around 60% since 2002 despite schemes' disinvestment from equities.

Chart 7.8 may also suggest that changes in schemes' holdings of equities may be part of a passive investment strategy, where schemes aim to hold fixed weights in asset classes regardless of market conditions. This is demonstrated by the fact that schemes appear to sell equities more heavily during periods of market strength (illustrated by a rise in the total value of their equity holdings) in order to maintain a fixed weight, while buying during periods of weakness to maintain holdings. Alternatively, it could reflect 'smart' fund managers selling high and buying low.

The movement away from equities towards fixed income securities may indicate increasing scheme maturity due to the passage of time and lack of new DB schemes opening to redress the balance. Trustees of more mature schemes which opt for less volatility in their asset portfolios may also move towards liability driven investment (LDI) strategies.

¹⁷ Regression analysis undertaken for Purple 2006 indicated that up to 60% of the variation in pension fund equity holdings can be explained by changes in the FTSE All Share Index.

7.9 Liability driven investment

The adoption of liability driven investment (LDI) strategies by pension schemes has been a topic of increasing interest and focus in recent years.

LDI is interpreted differently by different schemes. For example, in some parts of the industry LDI is taken to refer to a more wholesale shift into fixed income assets, and in other parts it is interpreted as an intentional approach to de-risking a scheme as it becomes more mature. Broadly speaking, LDI can be defined as a strategy whereby a scheme constructs its investment portfolio with some consideration for the nature of its liabilities.

Although LDI has developed as an issue in the pensions industry, the extent to which LDI strategies are used by pension schemes is difficult to gauge as such information is currently not captured through any official source. However, two industry-based surveys were undertaken in 2006 which provide some information on the take-up of LDI among UK pension schemes, one by the National Association of Pension Funds (NAPF)¹⁸ and another by JP Morgan Asset Management.¹⁹

The 2006 NAPF Annual Survey showed that out of a sample of 296 operators of DB schemes in the UK, only 17% indicated using an LDI strategy but a further 30% were considering adopting such a strategy. The majority of schemes (53%) did not use LDI at the time of the NAPF survey and did not intend to consider such a strategy.

The NAPF survey did not attempt to define LDI strategies in any way, nor did it gauge how schemes themselves define an LDI solution. This is an important consideration, because in gauging the rate of take-up of LDI, it is necessary to understand how schemes interpret LDI. In particular, some approaches traditionally termed 'asset-liability management' (ALM) would appear simply to have been re-branded as LDI.

¹⁸ NAPF Annual Survey 2006.

¹⁹ JP Morgan Liability Driven Investment (LDI) Survey 2006.

Indeed, the 2006 survey by JP Morgan Asset Management on the use of LDI among pension schemes in Europe found varying interpretations of LDI. Of the 92 UK defined benefit schemes in the sample of 214 European schemes, the majority (53%) took LDI to mean using the scheme's liabilities as the benchmark in managing the scheme's asset portfolio. A further 22% defined LDI as cash-flow matching, where the asset portfolio is constructed in such a way that cash flows generated match liability payments.

Nonetheless, the JP Morgan survey found that only 13% of UK schemes used an LDI strategy at the time of the survey - a similar proportion to the NAPF survey (17%). Similarly, a further 28% of UK schemes were considering implementing an LDI strategy, while 56% did not use any LDI strategy and had no plans to implement one in the near future.

The JP Morgan survey also provides an insight into the method by which LDI strategies might be being implemented practically by schemes. The survey found that pro-LDI schemes²⁰ in the UK were likely to hold a larger proportion of their assets in fixed income securities. Of these schemes, 42% of assets were held in fixed income compared to only 25% among LDI 'sceptics'.

The survey also showed a higher tendency for derivative use among pro-LDI schemes, with 79% using or considering the use of derivatives at the time of the survey compared to only 30% of LDI sceptics. Overall, it was found that most UK schemes (27%) used derivatives to hedge currency risk, while 19% used derivative instruments for liability matching purposes.

While LDI is a growing issue of interest, the low rate of take-up of LDI revealed by these surveys may reflect the trade-off between cost and volatility in implementing an LDI strategy.

²⁰ Defined as those schemes who were considering, were implementing or already had an LDI strategy at the time of the survey.

Long-term risk and short-term risk concentration²¹

8.1 Summary

- There has been a reduction in short-term combined risk between Purple 2006 and 2007 reflecting lower one-year ahead insolvency probabilities and better funding.
- A large proportion of combined short-term risk is concentrated in the worst insolvency group, group 10, with an average probability of failure of 11%. Indeed, 25% of the total combined short-term risk comes from schemes in that group.
- The PPF consulted earlier this year on using long-term risk for determining the distribution of the levy across schemes as well as the total levy to be collected; a significant proportion of long-term risk is related to large, currently stable businesses.

8.2 Introduction

Insolvencies are running at very low levels. Indeed, as noted in chapter six, the rate of insolvencies for the UK corporate sector as a whole in Q2 2007 was the lowest since the start of the series in 1984. Furthermore, the probability of insolvency over the next year is 0.3% on a weighted average basis for the Purple 2007 sample using the insolvency probabilities provided to the PPF by D&B for levy invoice purposes. There has also been a marked improvement in the funding position of DB pension schemes over the last year. As a result, the level of short-term risk has dropped to low levels.

However, in deciding on the total levy, the main focus of the PPF is on long-term risk, and its key tool is the Long-Term Risk Model (LTRM). The low level of short-term risk presents challenges for setting the levy scaling factor and levy parameters for the 2008-2009 levy year. The PPF consulted earlier this year on using a long-term risk approach for determining the distribution of the levy across schemes. The Pensions Regulator is also concerned about the broader health of schemes and closure of deficits in the long term as well as the short term. The scheme specific funding regime has the potential to reduce significantly the PPF's long-term risk and, thereby, the total levy schemes are charged.

²¹ This chapter analyses the Purple 2007 dataset of 5,892 schemes. 81 schemes that did not have an insolvency probability as at 31 March 2006 and/or 30 March 2007 were excluded, providing a sample of 5,811 schemes. In order to make comparisons with March 2006, scheme s179 funding data was rolled back to 31 March 2006, and forward to 30 March 2007, using the PPF's most up-to-date version of the roll-forward methodology. Compared to the full dataset of 5,892 schemes in Purple 2007, this sub-sample of schemes for which we have valid insolvency probabilities represents 99% of the total dataset of schemes and 99% of all liabilities of the wider dataset.

8.3 Long-term risk

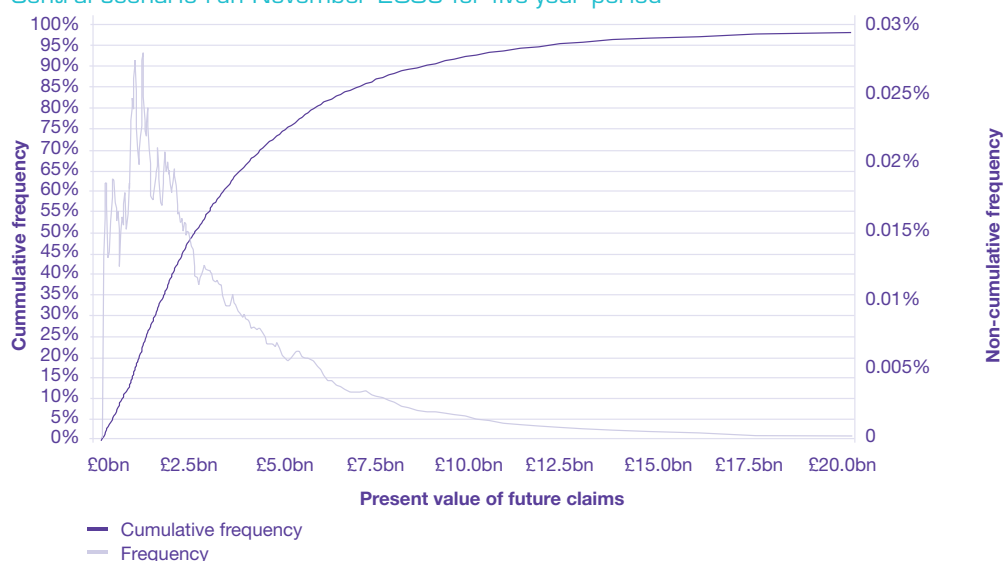
In principle, the PPF could look simply at the liabilities it already has and those that are likely to transfer to it over the course of the following year, based for example on one-year ahead insolvency probabilities, in deciding on the levy it should set. However, this would result in a levy with the potential to vary significantly from year to year. Accordingly, the PPF has sought to develop information about potential risks over a multi-year period, and to set a levy related to those.

The LTRM is the key tool that the PPF uses to understand and quantify the risks it faces in the future, and thereby to help assess the level of resources that are required to meet future potential liabilities. For a full discussion see the PPF's information paper *Modelling uncertainty: an introduction to the PPF Long-Term Risk Model*, August 2007, at: www.pensionprotectionfund.org.uk/ltrm_paper_aug_2007.pdf

This model illustrates the full range of risk the PPF faces and indicates how likely different - particularly adverse - outcomes are. The output of the model is a probability distribution of the level of claims over the period chosen, involving 500,000 scenarios (500 credit risk scenarios for each of 1,000 economic scenarios). Chart 8.1 shows the central scenario run of the model from November 2006, projecting claims over a five-year period.

Chart 8.1

Central scenario run November 2006 for five-year period



Source: 'Modelling uncertainty: an introduction to the PPF Long-Term Risk Model', August 2007

It demonstrates that the distribution of claims is heavily skewed, with a significant impact on the average claim (the mean figure) from claims at the higher end of the distribution. Another feature which is noteworthy, particularly by comparison with short-term risk, is that a significant proportion of the risk shown by the model - especially for more adverse scenarios - is related to large, currently stable businesses. The policy framework in which the level of the levy is decided was set out in the 2007-2008 Levy Estimate Consultation document, available at: www.pensionprotectionfund.org.uk/levy_consultation_dec06.pdf

To assist with that decision, the PPF takes account of a range of information. In setting the 2007-2008 levy this included the probability distribution shown, summary information on the claims distribution of the kind shown in table 8.1, and equivalents over a 10-year time horizon. In addition, sensitivities in relation to a number of factors were produced. Among the assumptions that need to be made is the extent of deficit elimination under the scheme specific funding regime. (For the 2007 LTRM runs the PPF has made use of the information on technical provisions and recovery plan lengths summarised in the Pensions Regulator's *'Recovery Plans: an initial analysis'*. These pointed to larger annual deficit repair than had previously been assumed, the result of higher than assumed technical provisions and shorter recovery plan lengths. The PPF's information paper on modelling uncertainty, referred to above, demonstrated that such changes to the LTRM assumptions could have appreciable effects in reducing the PPF's long-term risk.)

Table 8.1

Claims on the PPF (s179 basis) - first year

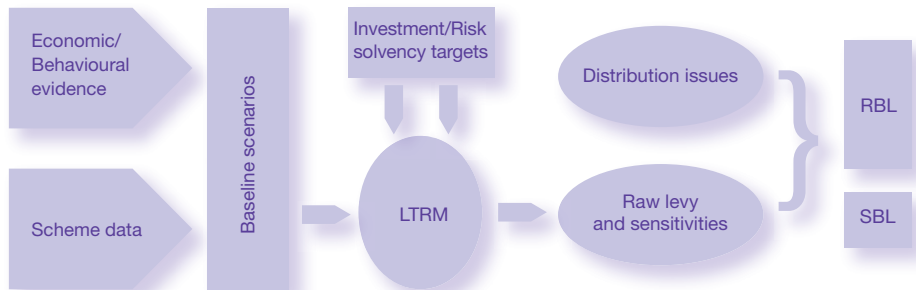
	Median	Mean	75th percentile	90th percentile	95th percentile	99th percentile
Claim (annualised) ²²	£0.7bn	£1.0bn	£1.3bn	£2.2bn	£3.0bn	£5.3bn

The Board of the PPF also takes account of a range of factors from current economic conditions to its view of trends in the pensions sector. These wider factors, and issues around the distribution of the levy, are represented diagrammatically in chart 8.2 opposite.

²² The annualised claim shown is for year one and is not simply one-fifth of the five-year figure, as an adjustment has been made to take account of the declining populations in later years of the model run as insolvencies take effect. This prevents solvent schemes in year five facing higher charges simply because the pool of schemes across which the claim is spread has declined, and means that the year one figures shown have an element of front-end loading. The effect is most marked in the tail; thus the 95th percentile claim can be seen on the graph to be just above £12.5bn, but the year one annualised equivalent is £3bn, not £2.5bn.

Chart 8.2

Representation of the factors influencing the LTRM and the levy



RBL = risk-based levy

SBL = scheme-based levy

8.4 Short-term risk concentration

The degree of risk of future claims is a significant consideration in setting the overall level of income needed to ensure that the PPF can meet its obligations going forward. However, the levy charged to an individual scheme is currently determined by short-term insolvency and underfunding risks. The scaling factor in the risk-based levy formula is set to target total levy collected equal to the aggregate long-term risk. The consultation on the future development of the Pension Protection Fund levy published earlier this year considered ways in which there may be greater alignment between long-term risk and the distribution of the levy. This is available at: www.pensionprotectionfund.org.uk/levy_consultation_aug_07.pdf.

The PPF is considering how it could make the annual levy on each individual scheme more closely related to the long term risk represented by the scheme (and measured by the LTRM). The LTRM allows a more detailed calculation of the contribution to the levy estimate from individual schemes based on their expected contribution to claims in scenarios with a lower likelihood of occurrence, but where the size of a claim may be considerable. Such schemes contribute more to claims in such a scenario, or are only forecast to contribute to claims due to a one off shock event with a low chance of occurrence. The principle of fairness adopted by the PPF states that the levy should reflect the risk posed to the PPF. The risk is not evenly distributed, and the PPF is keen to ensure that weaker schemes are not required to subsidise the levy costs of catastrophe risk.

Chapter four looked at the funding position of the schemes in the Purple 2007 dataset while chapter six analysed the insolvency risk faced by the sponsoring companies. In this chapter, we bring together the two aspects of risk. This is done by looking at the distribution of schemes in the sample between different levels of funding and insolvency risk. The analysis then multiplies the funding position (on a s179 basis) by the probability of the sponsoring company becoming insolvent over the next 12 months (derived from the D&B failure scores):

$$\text{Risk index for underfunded scheme A} = \text{Deficit in scheme A (in £s)} \times \text{Insolvency probability of sponsoring company}$$

This is done only for the 65% of schemes in our database which are underfunded. The individual combined scheme risk measures are then aggregated.

8.5 Grouping of insolvency probabilities and funding

The PPF uses 100 insolvency probability bands for sponsoring companies to calculate the levy for individual schemes together with an estimate of the funding position for each scheme. In order to present the information in a manageable form for this publication both the insolvency probabilities and s179 funding levels have been grouped together:

- The insolvency probabilities have been grouped into 10 categories (see table 8.2) rather than 100. Insolvency group one covers the sponsoring companies with the lowest probabilities of insolvency (less than or equal to 0.074%) while group 10 covers those with the highest probabilities (more than 3.521%).
- The funding positions of schemes, as measured by the ratio of pension fund assets to liabilities on a s179 basis, have been brought together into the three categories shown in table 8.3. Those with the best funding position (funding ratio 75%-100%) are in group one and the worst in group three (ratio below 50%). Schemes with a funding ratio in excess of 100% (ie those in surplus) have been excluded from our analysis of risk exposure.

The lowest risk schemes are then those in underfunding group one whose sponsor is in insolvency group one, while the highest risk are in underfunding group three with a sponsor in insolvency group 10.

Table 8.2
Insolvency groups²³

Insolvency group	Assumed probabilities of insolvency included in the group
1	Less than or equal to 0.0740%
2	0.0740% to 0.1804%
3	0.1804% to 0.3033%
4	0.3033% to 0.4286%
5	0.4286% to 0.5548%
6	0.5548% to 0.7241%
7	0.7241% to 0.9609%
8	0.9609% to 1.3044%
9	1.3044% to 3.5210%
10	More than 3.5210%

Source: the Pension Protection Fund and the Pensions Regulator

Table 8.3
Underfunding groups

Underfunding group	Ratio of s179 assets to liabilities
1	75% - 100%
2	50% - 75%
3	Less than 50%

8.6 Insolvency risks of schemes in the sample

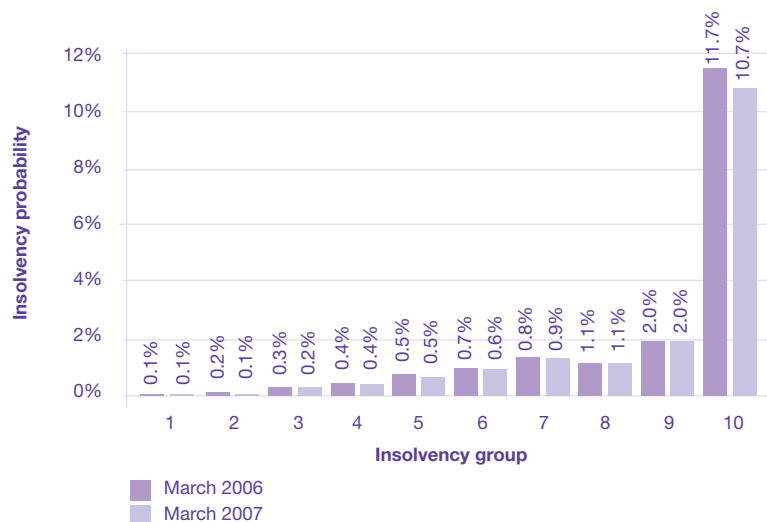
Looking at the Purple 2007 dataset, there is a relatively high probability (10.7%) that companies falling within insolvency group 10 will become insolvent within 12 months from 30 March 2007. However, this has fallen from 11.7% as at 31 March 2006. The average probability of insolvency in the other nine groups has remained relatively unchanged at less than 2% (chart 8.3). In contrast to group 10, the average insolvency probability in group one, the lowest insolvency risk group, is 0.1%. The average insolvency ratio on an unweighted basis for the sample as a whole is 0.76% (down from 0.88% in March 2006) and 0.31% on a weighted basis (0.38% in March 2006).

²³ Please note that the classification of the 10 insolvency groups has changed since Purple 2006, in order to provide more granularity among the strongest schemes. For example, under the old classification, 82% of schemes in the Purple 2007 dataset were in the best two insolvency groups used in Purple 2006, with 94% in the top four. Therefore, in order to give a better depiction of risk, the insolvency groupings were reclassified into those outlined in table 8.2.

Long-term risk and short-term risk concentration... continued

Chart 8.3

Average implied insolvency probability by insolvency group

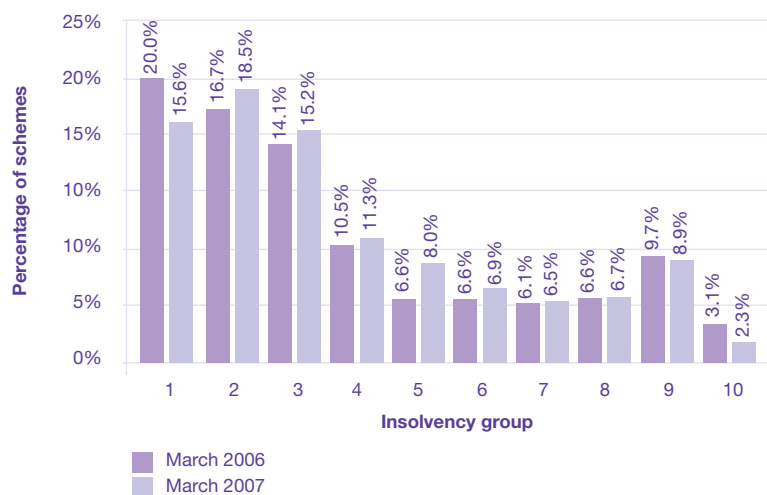


Source: the Pension Protection Fund and the Pensions Regulator

At 30 March 2007, 34% of the total number of schemes in the Purple 2007 dataset had sponsors in insolvency groups one and two, and 61% had sponsors in the four lowest risk groups with a risk of insolvency of less than or equal to 0.4286% (chart 8.5). This differs only slightly from 31 March 2006.

Chart 8.4

Percentage of schemes by insolvency group

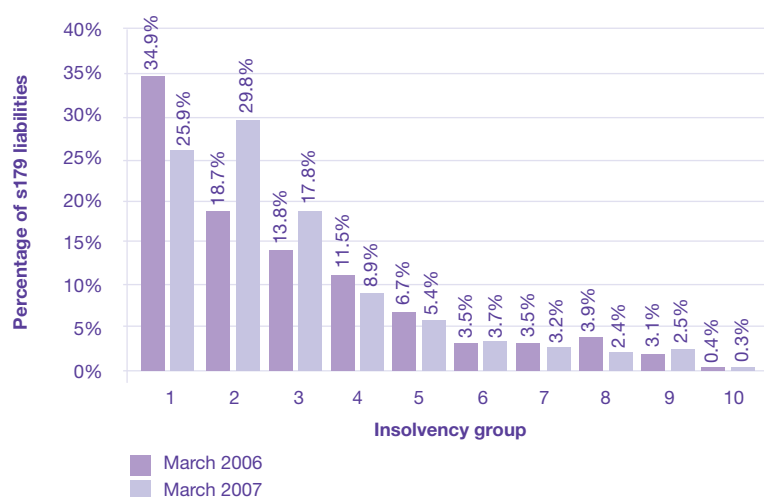


Source: the Pension Protection Fund and the Pensions Regulator

Bigger schemes tend to be in lower insolvency risk groups than the average so that, for instance, as chart 8.5 shows, 56% of s179 liabilities are in groups one and two, and 82% of the liabilities fall within the lowest four risk groups (those with a risk of insolvency of less than 0.4286%). The main change from March 2006 was a slight redistribution of s179 liabilities between groups one and two. The proportion of total s179 liabilities in group one declined, with the proportion in group two increasing by a similar amount.

Chart 8.5

Percentage of total scheme s179 liabilities by insolvency group

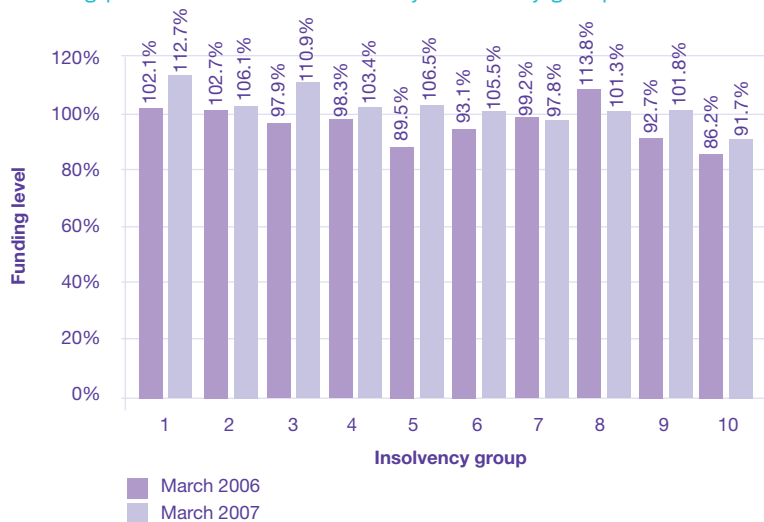


Source: the Pension Protection Fund and the Pensions Regulator

Perhaps unsurprisingly, the s179 funding position, measured by the ratio of assets (including DRCs) to liabilities, of schemes in the worst insolvency groups is weaker than in the higher insolvency groups (chart 8.6). The best funded schemes, on average, are to be found in insolvency group one. Eight of the 10 insolvency groups saw their funding positions improve between March 2006 and March 2007.

Chart 8.6

Funding position on a s179 basis by insolvency group



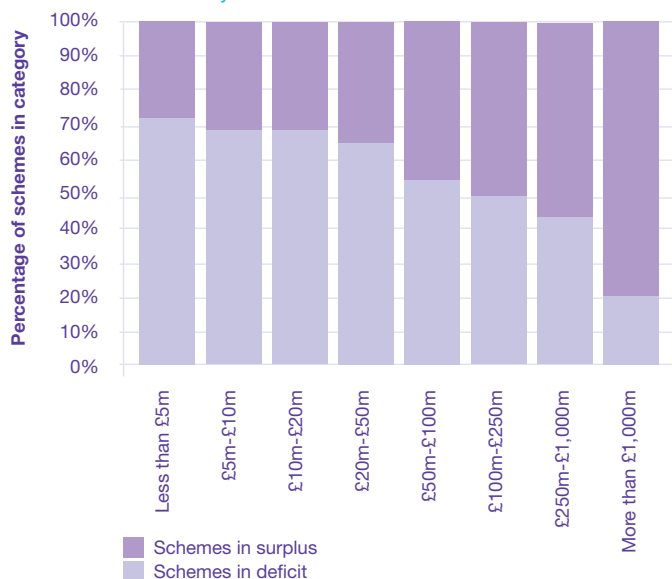
Source: the Pension Protection Fund and the Pensions Regulator

8.7 Schemes in deficit

The focus in the remainder of this chapter will be the schemes in deficit (on a s179 basis) in the Purple 2007 dataset, since they represent the main risks to scheme members and the PPF.

Chart 8.7

Percentage of schemes in surplus and deficit on a s179 basis by asset size



Source: the Pension Protection Fund and the Pensions Regulator

The total deficit on a s179 basis for underfunded schemes was £34bn as at 30 March 2007 (£55bn at 31 March 2006) while the overall ratio of assets to liabilities was 85.9% (84.2% at 31 March 2006). The percentage of schemes in deficit declines as asset size increases (chart 8.7), while the ratio of assets to liabilities rises (chart 8.8).

Chart 8.8

s179 funding position by asset size

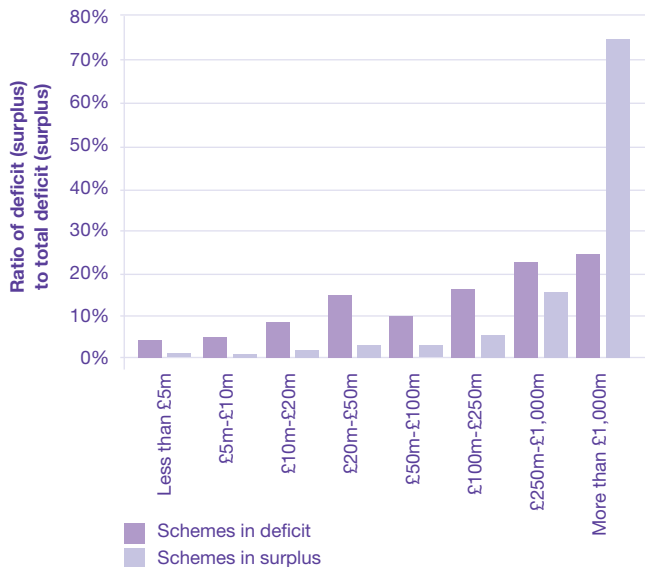


Source: the Pension Protection Fund and the Pensions Regulator

Section 179 deficits in the largest asset size category represent 25% of the total deficit (chart 8.9). At 30 March 2007, there were some 2,059 schemes in surplus on a s179 basis, 35% of the total. The total s179 surplus for these schemes is £87.3bn with the ratio of assets to liabilities of around 120%. Close to 75% of surpluses are in the largest asset size category of more than £1bn (chart 8.9). This is an improvement on the position at 31 March 2006 where only 1,496 schemes were in surplus (26%), having a total s179 surplus of £55.1bn.

Chart 8.9

Share of s179 surplus and s179 deficit by asset size



Source: the Pension Protection Fund and the Pensions Regulator

Short-term risk concentration for schemes in deficit

Multiplying each scheme's deficit on a s179 basis by the insolvency risk and aggregating gives a total combined risk of £158m for the Purple 2007 sample, as at 30 March 2007 (table 8.4). This is lower than the total combined risk of deficit schemes as at 31 March 2006 of £258m for the Purple 2007 sample. The relatively low level of short-term risk presents challenges for the PPF in setting an appropriate Levy Scaling Factor and levy parameters when the total levy to be collected is based on significantly higher long-term risk. In all this analysis we have only focused on those schemes in deficit because the PPF's risk exposure is asymmetric; it is not reduced by surpluses in other schemes.

Table 8.4 shows the combined risk figure for each underfunding group and insolvency group. For example, the deficit x insolvency probability for those schemes in underfunding group three and with a sponsor in insolvency group 10 is £9.3m.

Table 8.4

Combined risk by insolvency and underfunding group

Combined risk £m	Underfunding group			
Insolvency group	1	2	3	Grand total
1	2.1	1.4	0.1	3.6
2	8.3	3.3	0.2	11.9
3	8.1	9.5	0.6	18.2
4	7.2	6.6	0.2	14.1
5	4.7	3.8	0.2	8.7
6	5.2	3.2	0.3	8.7
7	6.8	9.5	0.1	16.4
8	7.7	3.8	2.3	13.8
9	14.2	8.2	0.5	22.8
10	11.2	19.1	9.3	39.5
Grand total	75.6	68.4	13.7	157.7

Table 8.5 shows the combined risk for each underfunding and insolvency group as a percentage of the total. Chart 8.10 shows this information graphically, where the size of each bubble indicates the percentage that the insolvency group and underfunding group contributes to the total of deficit x insolvency probability.

Table 8.5

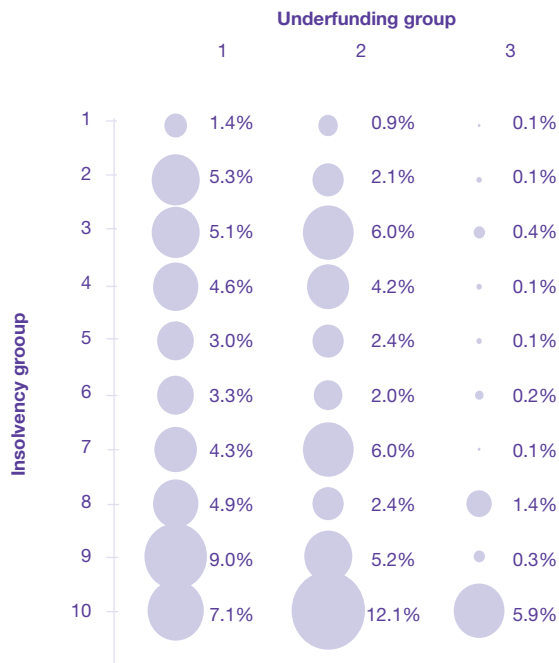
Combined risk by insolvency and underfunding group as percentage of total

Combined risk (% of total)	Underfunding group			
Insolvency group	1	2	3	Grand total
1	1.35%	0.90%	0.06%	2.31%
2	5.29%	2.09%	0.14%	7.52%
3	5.13%	6.00%	0.40%	11.53%
4	4.57%	4.21%	0.13%	8.91%
5	2.99%	2.41%	0.13%	5.53%
6	3.29%	2.05%	0.17%	5.50%
7	4.34%	6.01%	0.07%	10.42%
8	4.89%	2.40%	1.45%	8.74%
9	8.98%	5.20%	0.30%	14.49%
10	7.09%	12.08%	5.87%	25.05%
Grand total	47.93%	43.35%	8.71%	100.00%

Note: This table shows the percentage that each cell in the first table represents of the grand total. So, for example, the total funding position times insolvency probability for the underfunding group one and insolvency probability group 10 referred to above represents 7.1% ($11.2/157.7 \times 100$) of the overall funding times insolvency probability for all schemes.

Chart 8.10

Combined risk as a percentage of total



Source: the Pension Protection Fund and the Pensions Regulator

There are three points which stand out from chart 8.10 and tables 8.4 and 8.5:

- A large proportion of combined short-term risk is concentrated in the highest insolvency group, group 10, with an average probability of failure of 10.7%. Indeed, 25% of the total combined risk comes from schemes in that group. As was noted earlier, the schemes with sponsors in group 10 also have poor funding. Furthermore, it should be remembered that only 2.3% of schemes are in this insolvency group, so the overall risk reflects very high average risk for each scheme. The average combined risk per scheme in insolvency group 10 is £0.4m, over three times the size of the average in the next worst group, group nine.
- The combined short-term risk in the best two insolvency groups is just under 10% of the total, despite 34% of schemes being in these groups.
- It can be seen from table 8.5 that while the more underfunded schemes (those with less than 75% funding levels) represent around 52% of the total risk, the remaining 48% arises from relatively better funded schemes. As at 31 March 2006, 58% of the total risk was attributable to the more underfunded schemes and just 42% arose from better funded schemes.

Table 8.6
Average combined risk per scheme (underfunded schemes)

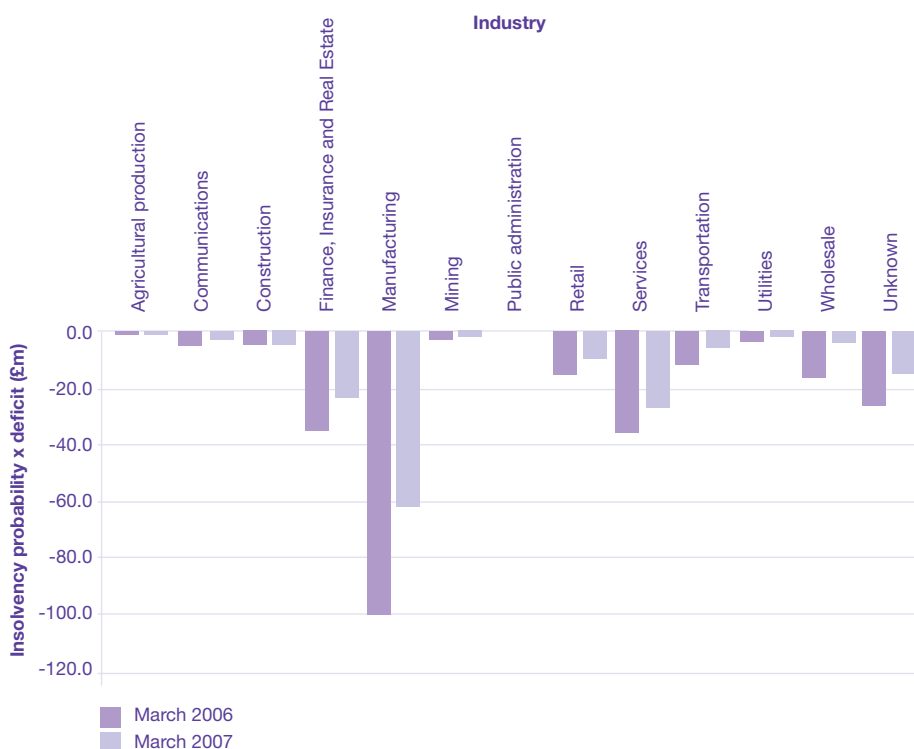
Insolvency group	Average insolvency probability	Average funding position	Combined risk (£m)	Number of schemes	Average combined risk per scheme (£m)
1	0.1%	80.3%	3.6	553	0.01
2	0.1%	80.2%	11.9	662	0.02
3	0.2%	79.4%	18.2	559	0.03
4	0.4%	78.9%	14.1	438	0.03
5	0.5%	80.0%	8.7	306	0.03
6	0.6%	78.9%	8.7	257	0.03
7	0.9%	79.8%	16.4	262	0.06
8	1.1%	79.5%	13.8	265	0.05
9	2.0%	79.2%	22.8	351	0.12
10	11.9%	72.5%	39.5	99	0.40
Totals			157.7	3,752	0.04

Short-term risk concentration by industry

It is interesting to look at risks by industrial sector because different sectors exhibit different trends and cyclical movements and have different concentrations of DB schemes. Manufacturing, for example, has been in trend decline for many decades while its cyclical swings tend to be greater than those for the economy as a whole. Manufacturing's share of total DB schemes is much larger than its share of total economic activity, as noted in chapter three.

Chart 8.11

Combined risk by industry

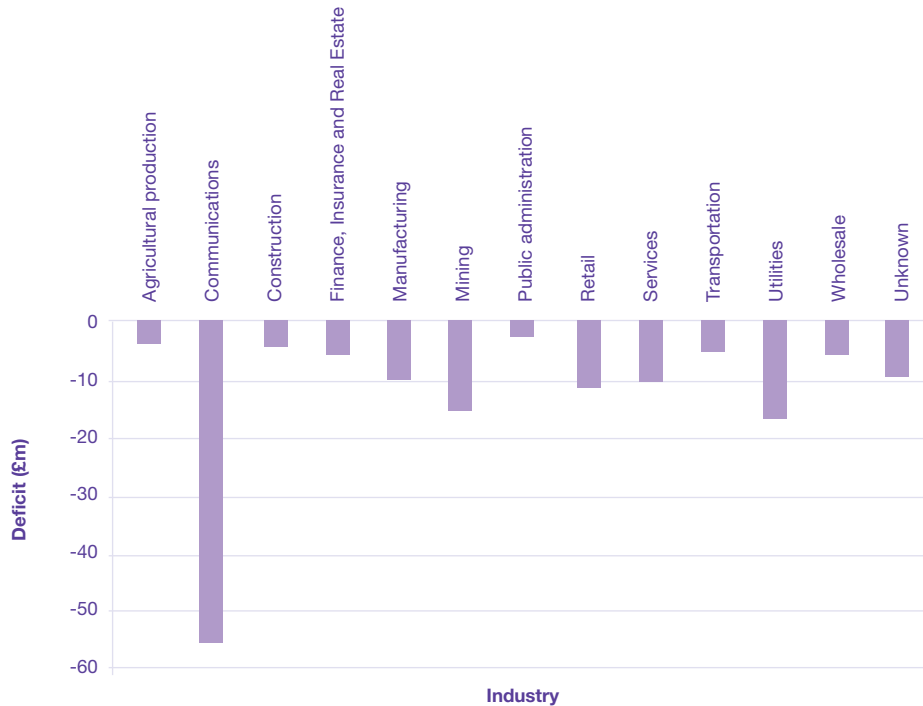


Source: the Pension Protection Fund and the Pensions Regulator

Chart 8.11 (which excludes schemes in s179 surplus) illustrates that the largest risk exposure for the PPF still lies with schemes whose sponsors are in manufacturing, followed by the services and financial sectors. Combined short-term risk appears to have fallen in all industries between March 2006 and March 2007. Referring back to the funding position by industry and insolvency position by industry sections (in chapters four and six) the position of the manufacturing sector is not surprising.

Chart 8.12

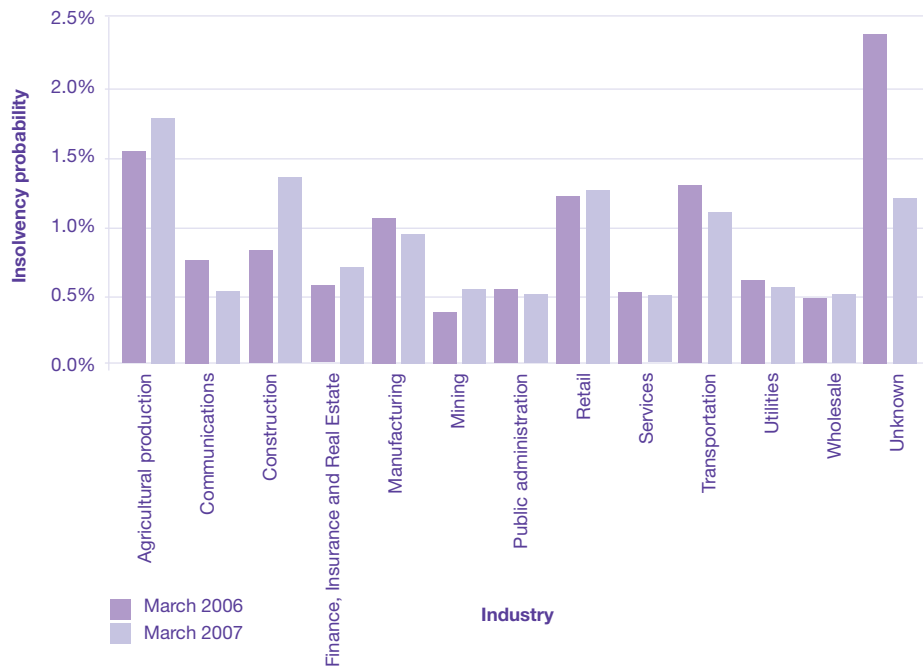
Average s179 deficits by industry (for schemes in deficit)



Source: the Pension Protection Fund and the Pensions Regulator

Chart 8.13

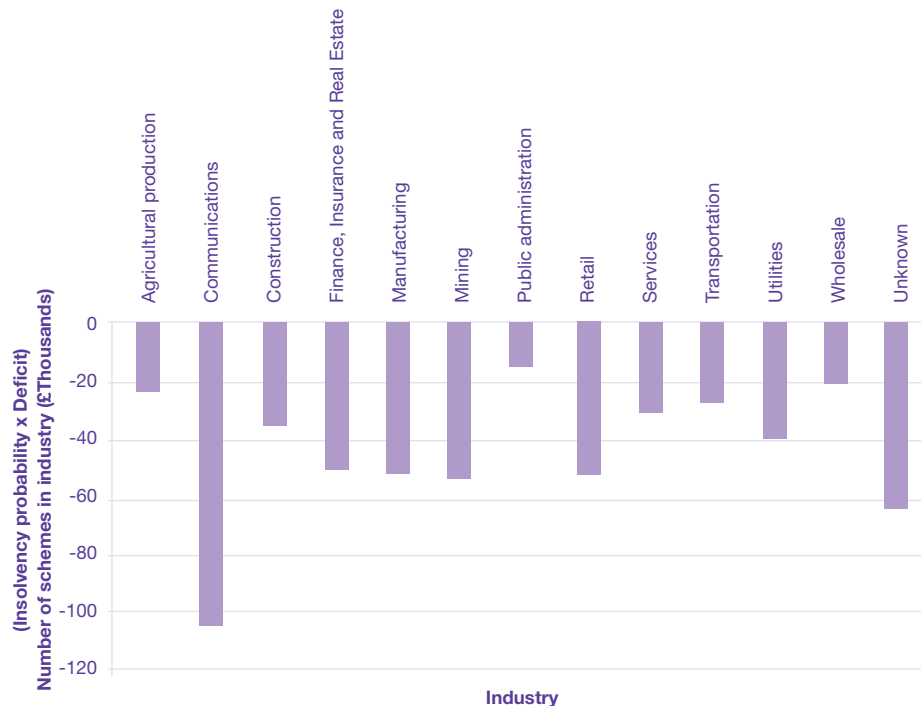
Average insolvency probability by industry (for schemes in deficit)



Source: the Pension Protection Fund and the Pensions Regulator

Chart 8.14

Average combined risk per scheme by industry

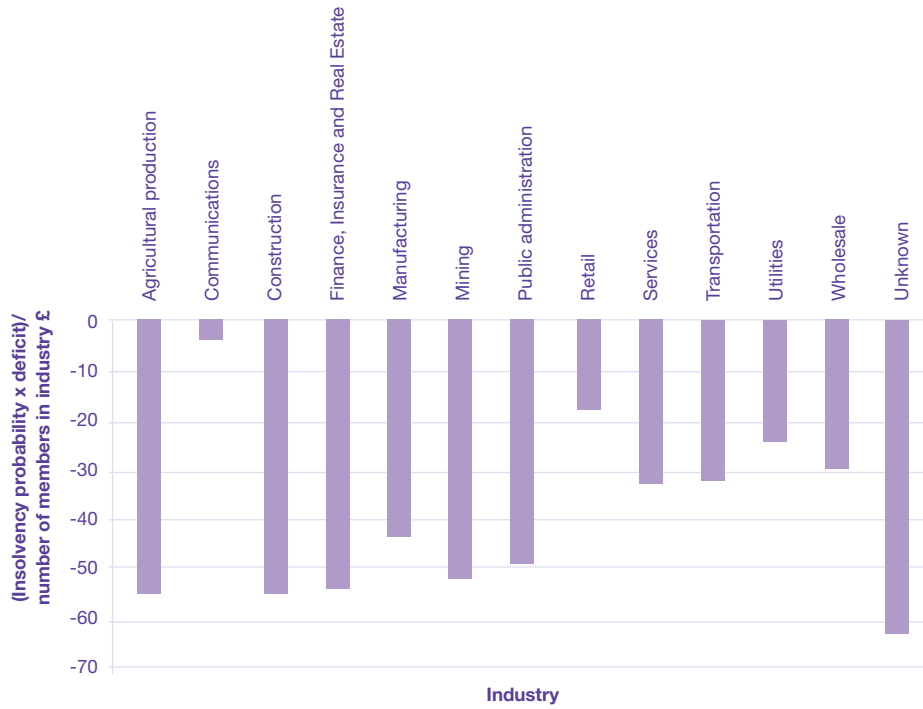


Source: the Pension Protection Fund and the Pensions Regulator

The average combined risk per scheme for the communications sector is large (chart 8.14). However, the schemes in the communications sector have very large memberships and the combined risk per member is relatively small, reflecting the size of schemes (measured by number of memberships) in this sector.

Chart 8.15

Average combined risk per member by industry



Source: the Pension Protection Fund and the Pensions Regulator

Levy payments to the PPF 2006-2007

9.1 Summary

- The PPF is expecting to collect £271m²⁴ in respect of the levy for the 2006-2007 levy year, compared to the target of £575m, of which 60% is risk-based and 40% is scheme-based. By September 2007, £260m had been collected.
- Under-collection was largely due to better data (£233m), although market movements and risk reduction strategies also played a role.
- The proportion of the levy that is risk-based is smaller for better funded schemes, and those with lower insolvency risk.
- Of the 7,601 schemes invoiced by September 2007, 310 schemes had their levies capped, and 476 schemes paid no risk-based levy.
- The top 100 paying schemes paid 39.1% of the total levy, with the top 10 contributing 15.4%.
- The manufacturing sector contributed the most towards the total levy (£88.5m), with agricultural production paying the highest levy per member (£25).

9.2 Introduction

The 2006-2007 levy year saw the introduction of the first Pension Protection Risk-Based Levy, which will be charged each year to help fund PPF compensation payments. This replaced the initial levy, used for the 2005-06 levy year, when schemes paid a levy dependent upon membership numbers only. The total 2006-07 levy was based on long-term risk, as determined by the Long-Term Risk Model (see chapter eight), while its distribution between schemes took account of the underfunding risk and the one-year insolvency probabilities of sponsoring employers.

This chapter looks at the 2006-2007 levy payments of 7,601 private sector DB schemes that had been invoiced by September 2007, and is not based on the previously presented Purple 2007 dataset. It describes how levy payments vary with scheme size, insolvency probability and funding level.

²⁴ The rest of this chapter will analyse the £270m that had been invoiced to 7,601 schemes prior to the Annual Report and Accounts being calculated. The £271m figure makes provisions for bad debt, and future levy collections of schemes after the Annual Accounts were calculated.

9.3 Levy quantum

For 2006-2007, the levy quantum was set at £575m. The risk-based element, required to make up 80% of the aggregate Pension Protection Levy, was based on scheme underfunding risk and the one-year insolvency risk of the sponsoring employers. The remaining 20% was a scheme-based element, which was based on the level of the scheme's s179 liabilities.

Levy invoices were based on funding and insolvency probabilities as at 31 March 2006. For the purposes of the 2007-2008 levy, funding was measured as at 31 October 2006, whereas insolvency probabilities were measured at 30 March 2007.

For 2006-2007, a cap on the risk-based levy was set at 0.5% of a scheme's s179 liabilities. Further, those schemes that were better than 125% funded on a s179 basis did not pay a risk-based levy. Fully funded schemes on a s179 basis, but with assets of less than 125% of liabilities, were subject to a reduced risk-based levy.

The PPF is expected to collect £271m in 2006-2007 rather than the levy quantum of £575m. The change in the amount of levy collected for 2006-2007 in relation to that estimated was due to a combination of:

- market movements;
- funding changes, including the notification of contingent assets and deficit reduction contributions to the PPF and the submission of updated valuation data for schemes;
- more accurate data provided to D&B by employers;
- more accurate data on multi-employer scheme structures (when 2006-2007 levies were originally calculated the insolvency probability of the 'main employer' was used instead of a probability measured using membership numbers); and
- the fact that the Levy Scaling Factor (LSF), which is used to scale up short-term risk into long-term risk, was fixed in December 2005, so levy payments were subject to changes in both underfunding and insolvency risk (for the 2007-2008 levy year, the LSF was set in April 2007, rather than December 2006).

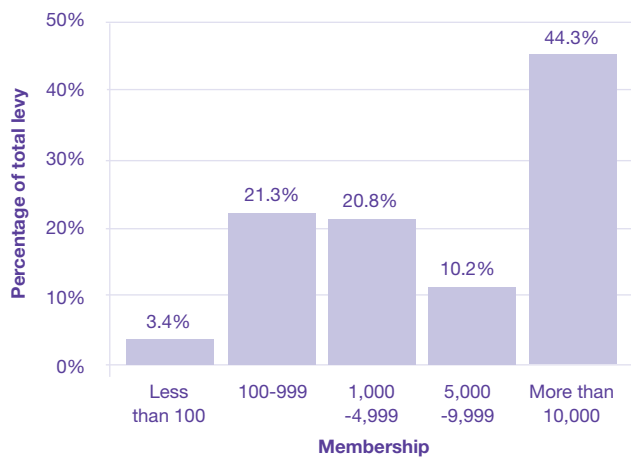
For a full discussion see the PPF's Annual Report and Accounts, October 2007, available at: www.pensionprotectionfund.org.uk/annualreport0607.pdf.

60% of the total levy to be collected is risk-based (£162m), and 40% scheme-based (£108m). This differs from the target ratio (80:20), due to the reduction in risk between December 2005 and March 2006.

9.4 Levy by scheme size

Chart 9.1

Levy by scheme size



Source: the Pension Protection Fund

19 schemes were excluded from the analysis due to membership data being unavailable

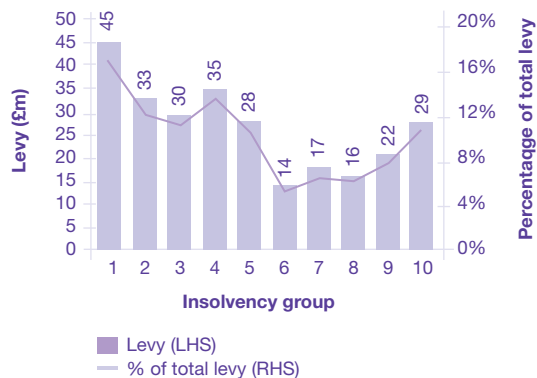
Large schemes with more than 1,000 members paid three-quarters of the 2006-07 levy while making up 18% of total schemes. Very large schemes with more than 10,000 members paid 44% while making up just 3% of total schemes. Schemes with fewer than 100 members paid 3% of the total levy.

9.5 Levy by insolvency group²⁵

Chart 9.2 illustrates that in 2006-2007 levy payments were distributed amongst all 10 insolvency groups. The highest contributing insolvency group - group one - contributed £45m towards total payments (17%). However, 19% of the schemes invoiced by September 2007 were included in this group. In general, levies were small in proportion to total s179 assets. For instance, the £45m paid by schemes in insolvency group one represented just 0.02% of their total s179 assets (chart 9.3).

Chart 9.2

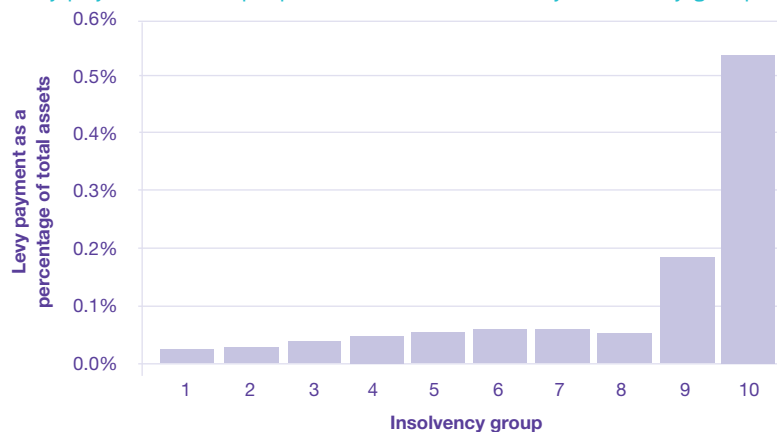
Levy by insolvency group



Source: the Pension Protection Fund

Chart 9.3

Levy payments as a proportion of total assets by insolvency group



Source: the Pension Protection Fund

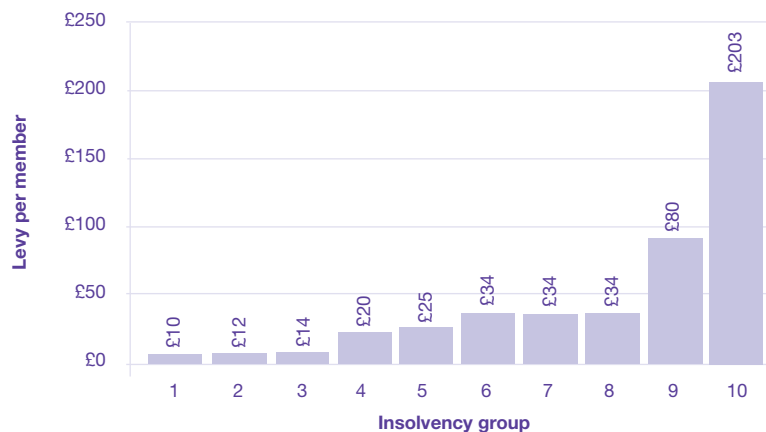
²⁵ Please note that the classification of the 10 insolvency groups has changed since Purple 2006, in order to provide more granularity among the strongest schemes. For example, under the old classification, 82% of schemes in the Purple 2007 dataset were in the best two insolvency groups used in Purple 2006, with 94% in the top four. Therefore, in order to give a better depiction of risk, the insolvency groupings were reclassified into those outlined in table 8.2.

Levy payments to the PPF 2006-2007... continued

Levy paid per member tends to increase as the insolvency risk of the sponsoring employer rises, as shown by chart 9.4.²⁶

Chart 9.4

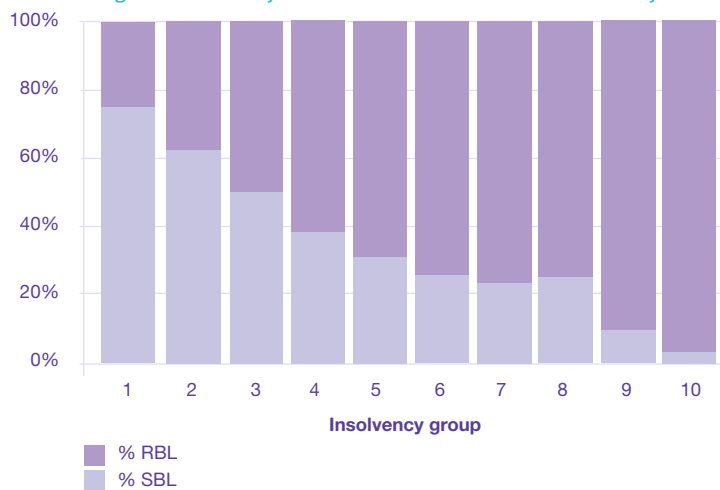
Levy per member by insolvency group



Source: the Pension Protection Fund

Chart 9.5

Percentage of total levy that is scheme and risk-based by insolvency group



Source: the Pension Protection Fund

Chart 9.5 shows that the share of risk-based levy tends to increase as insolvency risk rises, whilst the share of scheme-based levy falls.

²⁶ 19 schemes were excluded from the analysis due to membership data being unavailable.

9.6 Levy by funding level

Table 9.1

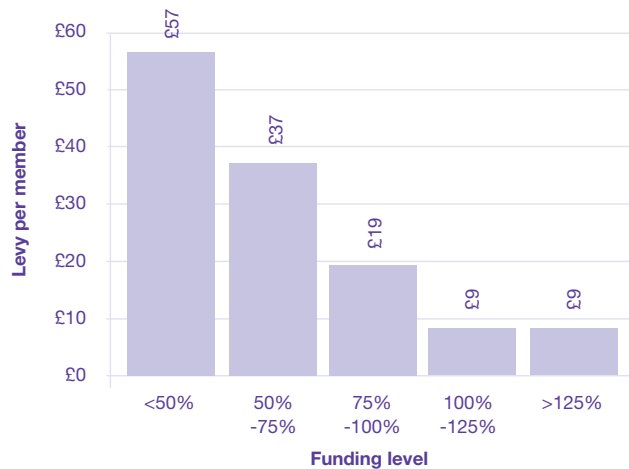
Funding groups

Funding group	Funding position on s179 basis
1	< 50%
2	50% - 75%
3	75% - 100%
4	100% - 125%
5	> 125%

Chart 9.6 below shows that better funded schemes, on a s179 basis, paid less levy per member.²⁷ Note that the levy paid per member by schemes whose funding positions exceeded 125% on a s179 basis was entirely scheme-based.

Chart 9.6

Levy per member by funding level



Source: the Pension Protection Fund

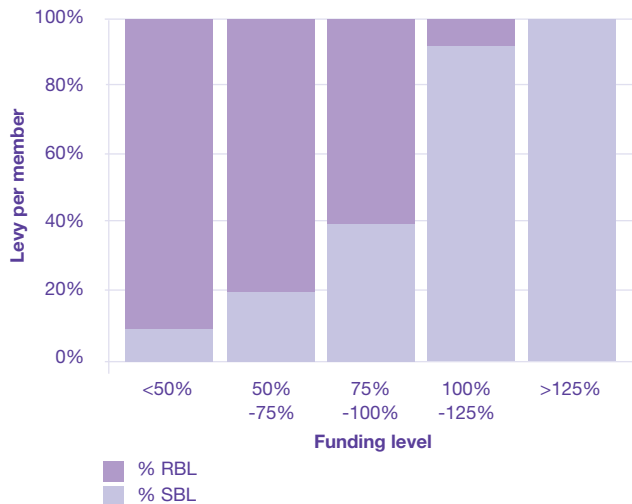
²⁷ 19 schemes were excluded from the analysis due to membership data being unavailable.

Levy payments to the PPF 2006-2007... continued

Looking at the composition of the total levy by funding level in chart 9.7, the percentage of the levy that is risk-based declines as s179 funding positions improve.

Chart 9.7

Percentage of total levy that is scheme and risk-based levy by funding level



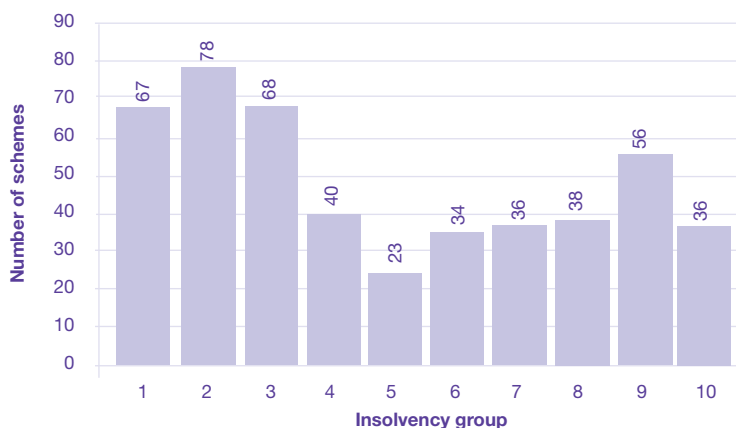
Source: the Pension Protection Fund

9.7 Schemes paying no risk-based levy

476 schemes paid no risk-based levy in 2006-2007 (representing 6% of the total number of schemes and 7% of total liabilities), because they were better than 125% funded on a s179 basis.

Chart 9.8

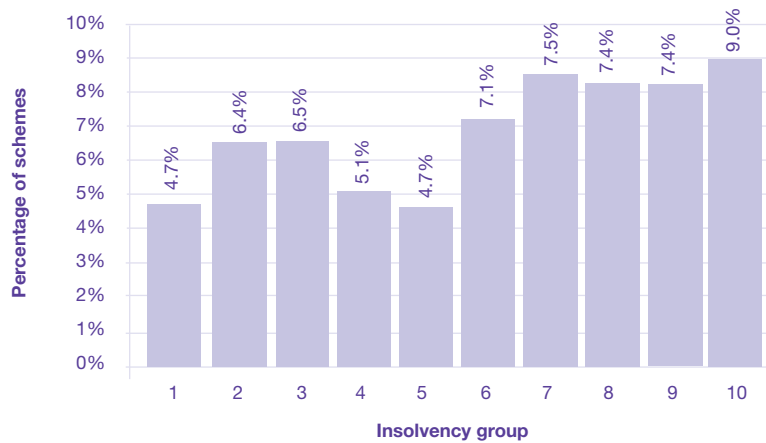
Number of schemes paying no risk-based levy



Source: the Pension Protection Fund

Chart 9.9

Percentage of schemes in each insolvency group paying no risk-based levy



Source: the Pension Protection Fund

All 10 insolvency groups included some schemes that did not pay a risk-based levy, with the highest number being in insolvency groups one to three. In groups one and five, only 4.7% of included schemes did not pay a risk-based levy, whereas 9.0% of schemes in group 10 did not pay a risk-based levy.

Table 9.2

Schemes paying no risk-based levy

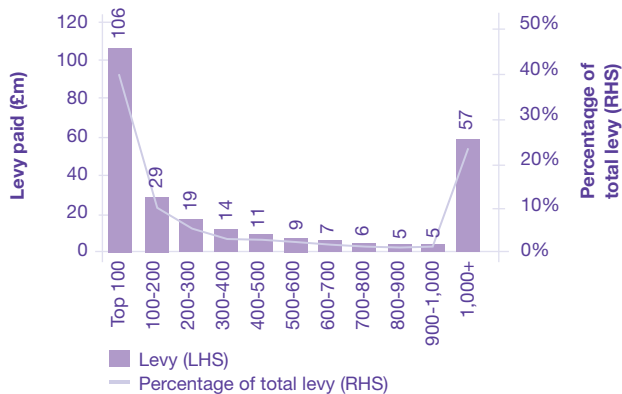
	Number of schemes	% of total number of schemes	s179 liabilities	s179 liabilities as % of total liabilities
Schemes paying no risk-based levy	476	6%	£54.5bn	7%
Total	7,601	100%	£778.0bn	100%

Levy payments to the PPF 2006-2007... continued

9.8 Levy paid by largest levy payers

Chart 9.10

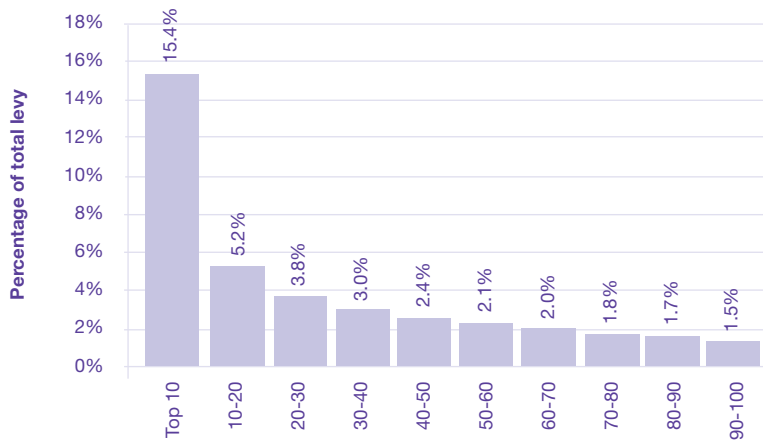
Distribution of levy payments



Source: the Pension Protection Fund

Chart 9.11

Percentage of total levy paid by largest 100 levy-paying schemes



Source: the Pension Protection Fund

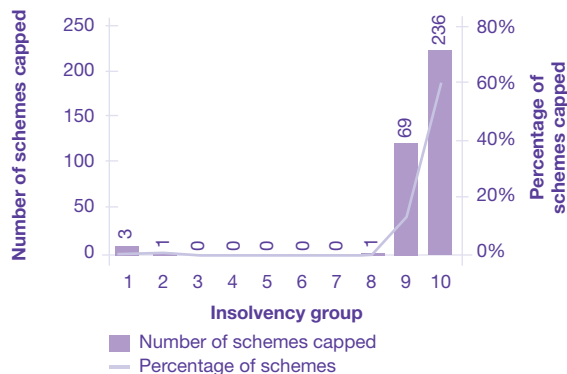
Chart 9.10 shows that the top 100 levy payers paid 39% of the total levy (£106m). These 100 schemes constitute only 1% of the total number of schemes but 43% of total s179 liabilities. Furthermore, the top 10 schemes (which incorporate merely 0.1% of total schemes) paid 15% of the total levy (£42m). The top 10 schemes constitute 14% of total liabilities.

9.9 Capped schemes

In 2006-2007, the risk-based levy was capped at 0.5% of a scheme's s179 liabilities. 310 schemes were capped, representing 4% of the total number of schemes. The liabilities of those capped totalled more than £5bn, 0.7% of the £778bn total liabilities for all schemes.

Chart 9.12

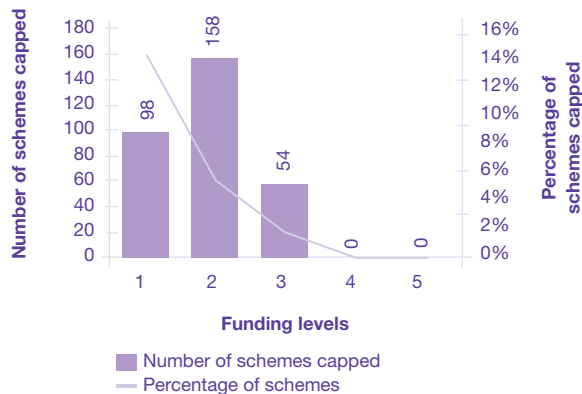
Schemes capped by insolvency group



Source: the Pension Protection Fund

Chart 9.13

Schemes capped by funding level



Source: the Pension Protection Fund

Charts 9.12 and 9.13 show that schemes with weaker sponsors and poorer s179 funding positions were more likely to have their levy capped. 305 of the 310 schemes that were capped were in insolvency groups nine and 10. In funding group one, 14% of schemes were capped, whereas no fully funded schemes had their levies capped.

Levy payments to the PPF 2006-2007... continued

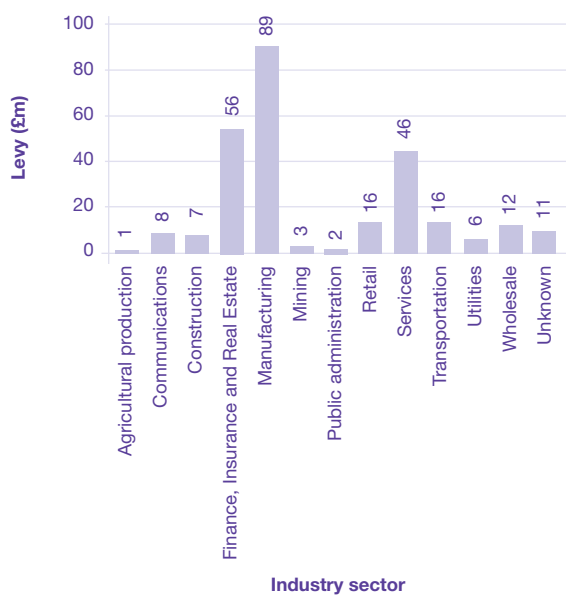
Table 9.3
Capped schemes

	Number of schemes	% of total number of schemes	s179 liabilities	s179 liabilities as % of total liabilities
Schemes capped	310	4.1%	£5.7bn	0.7%
Total	7,601	100.0%	£778.0bn	100.0%

9.10 Levy paid by industry category

Chart 9.14 illustrates that the manufacturing, finance, insurance and real estate, and services categories were the highest levy payers. These three sectors represented 66% of total schemes and contributed 70% towards the total levy. Manufacturing was the highest contributor with a 33% share of total payments.

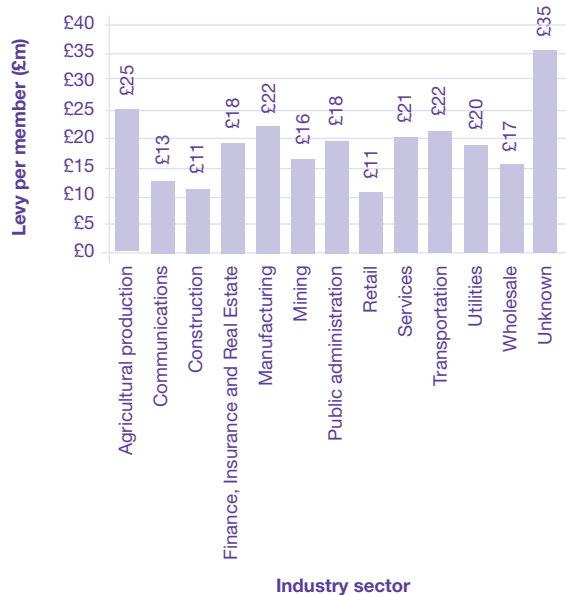
Chart 9.14
Total levy by industry sector



Source: the Pension Protection Fund

Chart 9.15

Levy per member by industry sector



Source: the Pension Protection Fund

Chart 9.15 shows that the construction and retail trade industries paid the lowest levy per member (£11), while agricultural production paid the highest (£25).²⁸ This is with the exception of those schemes where the industry type was unknown.

²⁸ 19 schemes were excluded from the analysis due to membership data being unavailable.

Schemes in assessment

10.1 Summary

- There were 179 DB schemes in the PPF's assessment period at end March 2007, with a total membership of 115,000. More than half the schemes in assessment came from the manufacturing industry (51%), whilst 16% came from services.
- In aggregate, these schemes have assets²⁹ of £3.98bn and liabilities of £4.70bn on a s179 basis,³⁰ with average assets of £22m per scheme and average liabilities of £26m.
- Small schemes (fewer than 100 members) make up 35% of the schemes in assessment; however, these schemes only make up 3% of membership.
- The aggregate s179 funding level (total assets divided by total liabilities) for schemes in assessment is 84.6%, well below the 108% average funding level of the schemes in Purple 2007.
- Within the schemes in assessment, those with liabilities of less than £20m have s179 funding ratios of around 80%, and those with liabilities of more than £20m have funding ratios of around 86%.
- The largest asset classes of the schemes in assessment are equities (53%) and gilts and fixed interest (32%). The equity share is somewhat below that in Purple 2007 (60%) but the gilts and fixed interest share is similar.
- By end March 2007, nine schemes had passed through the assessment period and entered the PPF.

²⁹ Estimated recoveries are included in these assets, except for in one scheme in which they are actual amounts (recoveries account for £84.8m of assets).

³⁰ This data is different from that of the accounts since the accounts are calculated on a valuation basis whereas this dataset is calculated on a s179 basis.

10.2 Introduction

This section looks at the 179 schemes in an assessment period within the PPF as at 30 March 2007. An assessment period is triggered by a qualifying insolvency event of an employer of an eligible scheme. (A full description of the assessment period and qualifying insolvency events can be found on the PPF's website.) The purpose of the assessment period is to ascertain whether the pension scheme can be rescued, or whether the scheme can afford to secure benefits which are at least equal to the compensation that the PPF would pay if it assumed responsibility for the scheme. For schemes likely to transfer, the assessment period must last a minimum of a year. However, this could be longer depending on the size and complexity of the scheme concerned. During the assessment period a thorough review of each scheme is undertaken; one of the main exercises during this period is to reconcile scheme data.

For the purposes of Purple 2007, the 179 schemes in an assessment period are excluded from the risk analysis in chapter eight.

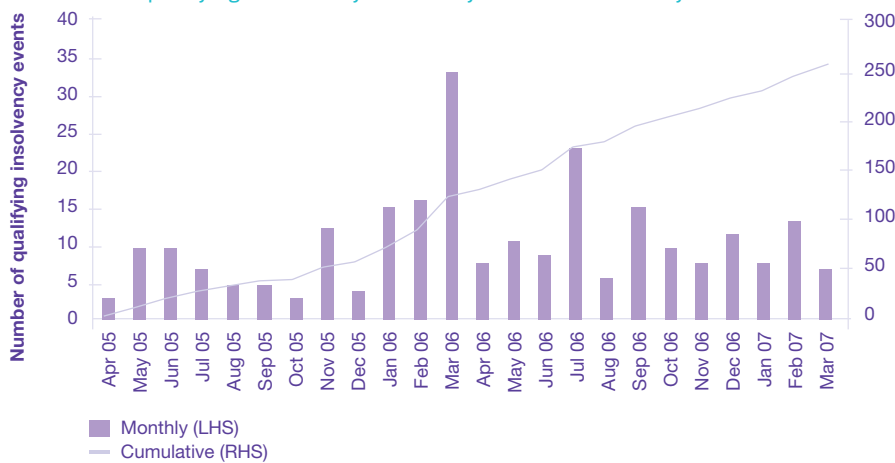
By end March 2007, nine schemes had passed through the assessment period and entered the PPF, which was paying 1,457 pensioners compensation at an annual rate of £6,572,000.

If a scheme currently in an assessment period is found to be eligible for protection by the PPF, then the assets and liabilities of the scheme are transferred into the PPF.

The number of qualifying insolvency events peaked in March 2006. Chart 10.1 below shows the number of insolvency events which the PPF has stated to be qualifying insolvency events since the inception of the PPF (claim rate data). The average annual insolvency rate over the last two years of 0.8% (125 as a percentage of 15,000, the total number of company sponsors in the PPF universe)³¹ is very similar to the unweighted average of the one-year ahead insolvency probabilities from D&B.

Chart 10.1

Number of qualifying insolvency events by date of insolvency



Source: the Pension Protection Fund and the Pensions Regulator

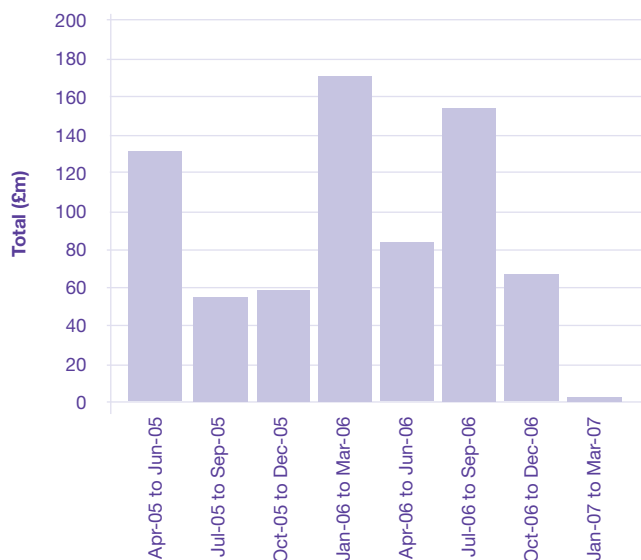
In some instances an insolvency event can lead to the segregation of a scheme, ie only the insolvent segregated part enters into an assessment period. As such, there can be several segregated parts relating to the original scheme in an assessment period. For the remainder of this analysis (due to a lack of more detailed data) all segregated parts of a scheme have been re-aggregated and treated as a single scheme.

³¹ The company numbers are higher than the scheme numbers due to the existence of multi-employer schemes

Chart 10.2 shows the schemes which have entered into an assessment period quarterly up to end March 2007 by s179 total deficit. The total deficit of schemes entering assessment each quarter has averaged £90m per quarter. The average deficit per month since PPF inception is around £30m. However, this trend has altered recently as February 2007 was the first month to show an aggregate surplus (of £26m) and March 2007 only showed a small aggregate deficit (of £2m).

Chart 10.2

Total s179 deficit entering an assessment period (quarterly)



Source: the Pension Protection Fund and the Pensions Regulator

The assets and liabilities have been calculated at 30 March 2007 using the same method as applied in chapter five. Results have been determined from the latest available historical valuation results and trustee report and accounts for the schemes.

These figures are indicative only and should not be interpreted as the true state of funding of the schemes in assessment. This will only be known at the individual scheme or segregated part level once the section 143 valuation (which determines whether the scheme enters the PPF) has become binding.

10.3 Scheme demographics

A large number of the schemes in assessment are fairly small in terms of their s179 liabilities; 66 schemes (37%) have a liability size of less than £5m when grouped by liabilities (chart 10.3). The picture is fairly similar when looking at assets by asset groups, with 75 schemes (42%) having assets worth less than £5m. This is also the case in the Purple 2007 dataset, with the exception of a greater proportion of schemes having over £100m liabilities and a lesser proportion having under £5m of liabilities.

Chart 10.3

Percentage of schemes in each liability group



Source: the Pension Protection Fund and the Pensions Regulator

Chart 10.4 below shows the actual impact of the schemes in assessment on the PPF. It can be seen that the majority of schemes in an assessment period are small schemes by s179 liabilities, but in aggregate these only account for a small percentage of total liabilities. Conversely, a few large schemes are in an assessment period but these contribute to a large proportion of the total liabilities. For example, schemes with total s179 liabilities of greater than £100m only account for 4% of schemes in an assessment period, but account for 44% of the total liabilities. These schemes clearly have the greatest impact on the liabilities of the PPF.

Chart 10.4

Percentage of schemes and percentage of s179 liabilities by liability group



Source: the Pension Protection Fund and the Pensions Regulator

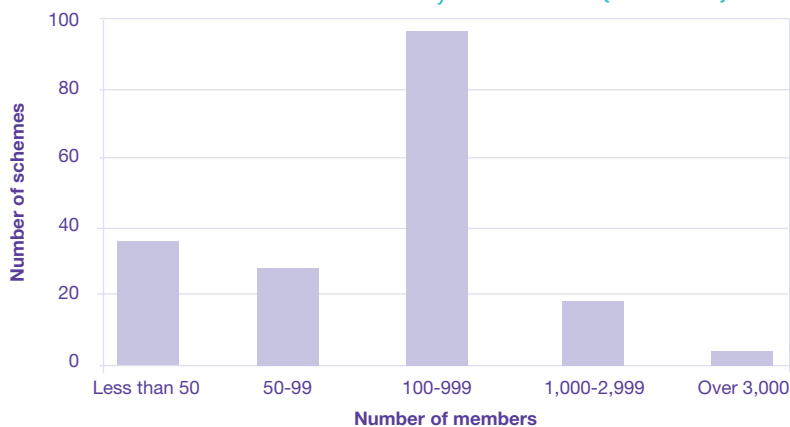
Schemes in assessment... continued

Members

The majority of schemes in assessment are medium sized in terms of membership, with 94 schemes (or 53%) having between 100 and 999 members. Of that 94, 70 schemes had fewer than 500 members and 24 had more than 500 members. There are only four schemes with more than 3,000 members (chart 10.5). The total membership of schemes in assessment as at March 2007 was 115,000.

Chart 10.5

Number of schemes in assessment by scheme size (members)



Source: the Pension Protection Fund and the Pensions Regulator

Chart 10.6 below shows that larger schemes are associated with slightly greater maturity. Schemes with fewer than 50 members have around 20% of scheme members who are pensioners in payment compared to schemes with more than 3,000 members who have roughly double that proportion. This may be a reflection of the different insurance practices of such schemes, in particular annuity purchase compared to self-insurance of pensions in payment.

Chart 10.6

Maturity by membership size



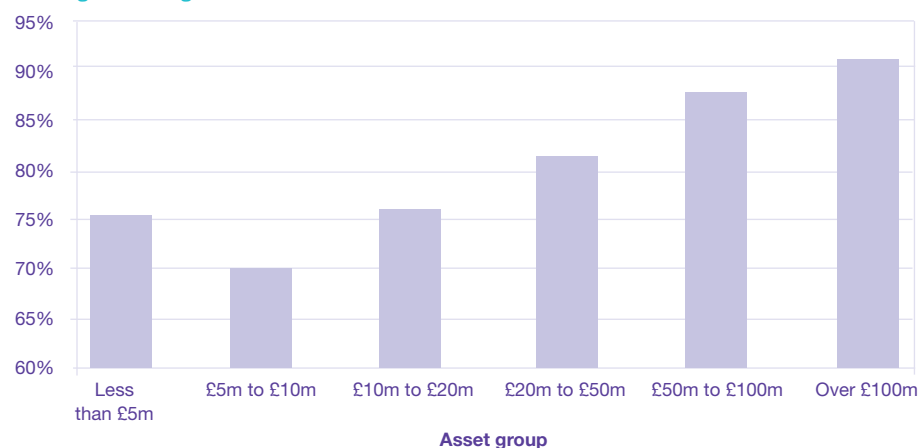
Source: the Pension Protection Fund and the Pensions Regulator

10.4 Funding level

Schemes in assessment have total assets of £3.98bn and total liabilities of £4.70bn, giving an aggregate deficit of £720m on a s179 basis as at 30 March 2007. The least well funded schemes are those with liabilities from £5m to £10m, and an average funding ratio of around 71%. The average funding ratio (total assets for the group divided by total liabilities for the group) for those schemes with liabilities of more than £50m is around 88% (see chart 10.7). The gap in the funding ratio between the best and the least well funded asset group is 20 percentage points.

Chart 10.7

Average funding level on a s179 basis



Source: the Pension Protection Fund and the Pensions Regulator

The smaller schemes tend to be less well funded. If analysis is restricted to schemes that are in deficit at 30 March 2007, then the total grouped deficit is highest in the liability group 'Over £100m' (chart 10.8), which has a total deficit of £260m. The next highest is the liability group '£20m to £50m', where the aggregate deficit is £217m.

Chart 10.8

Total s179 deficit of schemes in deficit by liability size



Source: the Pension Protection Fund

10.5 Asset allocation

The asset allocation of schemes in assessment is an important factor in assessing the risk these schemes pose to the PPF. The Board takes note of the asset allocation of pension schemes in assessment as part of its monitoring of the asset strategy of the PPF as a whole. When schemes transfer into the PPF their assets are transitioned into the PPF's asset allocation (shown in chart 10.9). In contrast to the asset allocation of typical pension funds, that of the PPF is much less equity heavy and more gilt and cash heavy. This is to ensure a low level of correlation between the fund's assets and that of typical pension funds, thereby mitigating the risk of assets underperforming in times of increasing deficits and weak equity markets. The PPF's asset allocation is given in the statement of investment principles, which is reviewed yearly.

Chart 10.9
Asset allocation, simple averages



Source: the Pension Protection Fund and the Pensions Regulator

When looked at as a whole, the schemes in assessment are largely invested in equities, followed by gilts and fixed interest.³² The main differences between the asset allocation of the 179 schemes in assessment and the Purple 2007 dataset is the lower percentage of assets held in equities by the schemes in assessment (53% compared with 60%) and the higher percentage held in insurance policies (10% compared with 1%).

³² Although most of the dataset is pre-assessment, it should be noted that when schemes enter assessment they tend to move to a more bond-orientated asset allocation.

Chart 10.10 shows the asset allocation of schemes in assessment by asset size. All schemes had a fairly similar proportion of assets held in equities (between 48% and 60%), with the smaller schemes holding slightly more in insurance compared to other asset groups, and the larger schemes tending to hold comparatively more in gilts and fixed interest.

Chart 10.10
Asset allocation by asset size



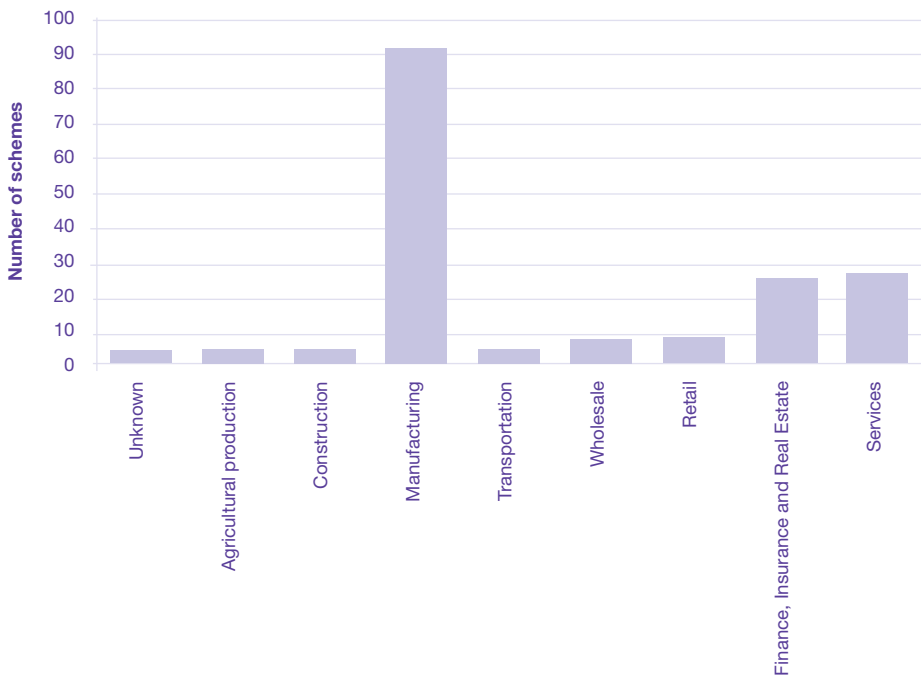
Source: the Pension Protection Fund and the Pensions Regulator

10.6 Industry classification

Out of the 179 schemes in assessment, 92 schemes (51%) have sponsors in manufacturing industry (chart 10.11). This is 17 percentage points higher than the proportion of schemes in the Purple 2007 dataset with sponsors in the manufacturing sector (34%). The Purple 2007 dataset itself shows more than double the share of manufacturing output in the economy. In 2006-2007, manufacturing constituted 33% of the total levy billed. 28 schemes have sponsors in services while 26 schemes have sponsors in finance, insurance and real estate (table 10.1). The industrial distribution of schemes in assessment shows a smaller proportion in services than the Purple 2007 dataset.

Chart 10.11

Distribution of schemes by industry classification



Source: the Pension Protection Fund and the Pensions Regulator

Table 10.1
Scheme sponsors by industry

Industry	Number of schemes per industry (schemes in assessment)	Percentage of schemes per industry (schemes in assessment)	Percentage of schemes per industry (Purple 2007)
Unknown	4	2%	0%
Agricultural production	4	2%	1%
Construction	4	2%	3%
Manufacturing	92	51%	34%
Transportation	6	3%	5%
Wholesale	7	4%	10%
Retail	8	4%	5%
Finance, Insurance and Real Estate	26	15%	17%
Services	28	16%	22%
Utilities	0	0%	1%
Communications	0	0%	1%
Mining	0	0%	1%
Public administration	0	0%	0%

Source: the Pension Protection Fund



Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006

A.1 Summary

In general, the two datasets ('Purple 2006' and 'extended Purple 2006') are similar in terms of the broad characteristics of DB schemes. The main differences in the extended Purple 2006 dataset were as follows:

- A lower proportion of members were located in the 'open' and 'part open' schemes in the larger dataset compared to Purple 2006.
- The simple average s179 funding level rose significantly from 80% in Purple 2006 to 93% in the larger dataset. However, the weighted average funding level (total s179 assets as a percentage of total s179 liabilities) remained relatively unchanged, because the bulk of the additional schemes were small.
- The simple average percentage of assets held in insurance policies rose significantly, as more small schemes were added, balanced by a fall in the proportion of assets held in equities.
- The main conclusion is that the Purple 2006 dataset provided a reliable guide to the features of the 7,751 dataset. The additions to the Purple 2006 dataset were mainly small schemes, which affected simple averages but not aggregates or weighted averages.

A.2 Introduction

Most of the analysis undertaken in Purple 2006 was based on a dataset of 5,772 eligible DB schemes. Since then, information on almost 2,000 more schemes has become available, taking the extended dataset to 7,751. This is the PPF's best estimate of the universe of eligible schemes for the 2006-2007 levy year.

This section compares the two datasets according to key indicators such as member distribution, scheme type, funding position and asset allocation, and describes the important differences that arose when comparing Purple 2006 to the extended Purple 2006 dataset.

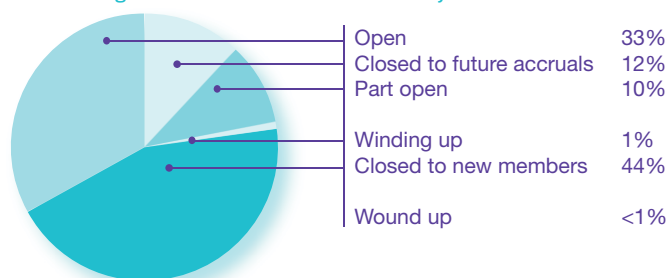
A.3 Scheme demographics

The Purple 2006 dataset of 5,772 schemes contained a total of 12.6 million scheme members at March 2006, while the larger dataset of 7,751 schemes contains a total membership of 14.8 million. This would indicate that most of the additional schemes in the extended Purple 2006 dataset are smaller in size (an average of around 1,100 members per additional scheme).

In general, there is very little change in the distribution of schemes by status in the extended Purple 2006 dataset, with 44% of schemes closed to new members, 12% closed to future accruals and 33% open: these are similar proportions to the Purple 2006 analysis (chart A.1). In addition, the distribution of member types is identical to Purple 2006 with 41% of members classified as deferred, 26% as active and 33% as pensioner in the extended dataset (chart A.2).

Chart A.1

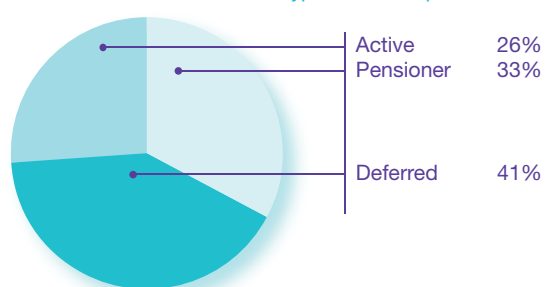
Percentage distribution of schemes by status



Pie chart may not sum to 100% due to rounding

Chart A.2

Distribution of member types in sample



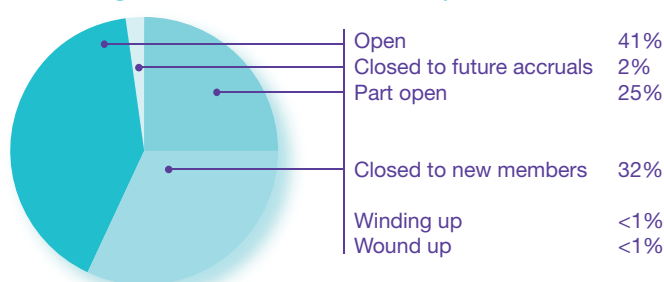
Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006... continued

However, differences do emerge in terms of distribution of members according to scheme status (chart A.3), with a smaller proportion of members located in 'open' and 'some open' schemes in the extended dataset compared to Purple 2006 (66% compared to 72%), while a higher proportion of members are within closed schemes in the extended dataset (34% compared to 26%).

Chart A.3

Percentage distribution of members by scheme status



Pie chart may not sum to 100% due to rounding

In terms of the industry of operation of scheme sponsors, it would appear that the services, manufacturing, and finance, insurance and real estate sectors continue to dominate, as was the case in Purple 2006.

A.4 Scheme funding³³

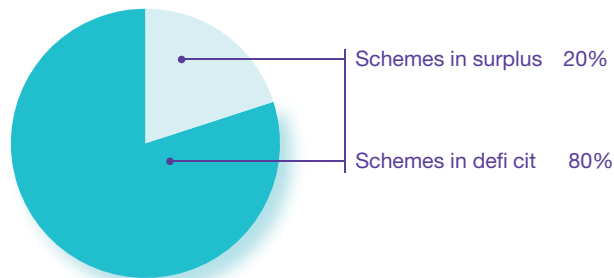
Section 179 assets of schemes in the extended Purple 2006 dataset totalled £769bn (£636bn in Purple 2006) while s179 liabilities of schemes in the extended dataset totalled £792bn (£669bn in Purple 2006). The overall deficit of schemes was in fact lower in the extended dataset at £22.7bn compared to £33.8bn in Purple 2006.

Despite these changes, the aggregate funding level only rose from 95% (Purple 2006) to 97% (extended Purple 2006 dataset). However, the simple average funding level per scheme rose significantly from 80% to 93% in the larger dataset, indicating that most of the additional schemes were well funded.

There was little change in the proportion of schemes in deficit and surplus on a s179 basis (chart A.4). In the extended Purple 2006 dataset, 6,178 schemes were in deficit (80%), with 1,573 in surplus (20%). This compares to Purple 2006 where 83% of schemes were in deficit (4,797 schemes), with 17% in surplus (975 schemes).

Chart A.4

Schemes in deficit and in surplus on a s179 basis



³³ Figures for s179 assets and liabilities for the extended dataset were based on the same roll-forward methodology as used in Purple 2006. This differs from the methodology implemented in Purple 2007 and hence is not directly comparable to earlier chapters.

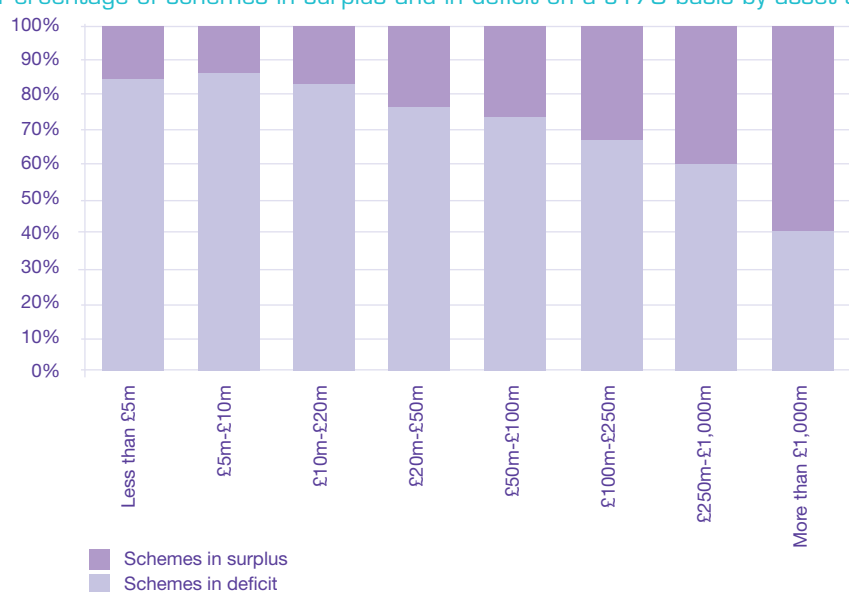
Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006... continued

Comparing the datasets, there has been little change in s179 funding positions by asset size (chart A.5). Again, there tends to be a higher proportion of schemes in deficit in the lower asset classes. 83% of schemes were in deficit in the smallest asset group (82% in Purple 2006), and 39% of schemes were in deficit in the largest asset group (49% in Purple 2006).

Chart A.5

Percentage of schemes in surplus and in deficit on a s179 basis by asset size

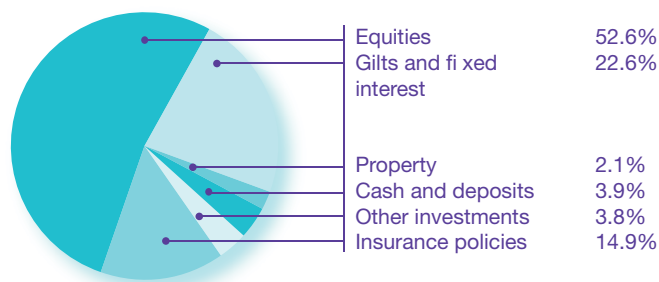


A.5 Asset allocation

Chart A.6 shows the unweighted average asset allocation of schemes in the larger dataset. In Purple 2006, equities and gilts and fixed interest made up most of the asset allocation for the 5,772 schemes, with 56% and 22% invested in these respectively. In the larger dataset, the proportion of assets held in equities fell to 53% with insurance policies rising from 12% to 18%.

Chart A.6

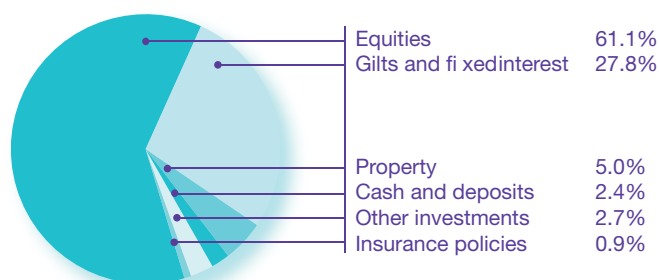
Average asset allocation for all schemes



The change is due to a high proportion of schemes in the extended dataset holding assets in insurance policies, with 1,050 schemes (13.5%) holding more than 90% of their assets in insurance policies. These are mainly small schemes, however, and the weighted average split of the total assets in the extended dataset was almost identical to that of the Purple 2006 schemes (chart A.7).

Chart A.7

Weighted average asset allocation for all schemes



Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006... continued

In addition, the asset allocation of schemes by asset size shows a similar picture to that in Purple 2006 (chart A.8). The only recognisable change was the rise in the proportion of insurance policies in the lowest asset group, from 25% in Purple 2006 to 31%. The proportion of equities in the lowest asset group fell by a similar amount.

Chart A.8

Average asset allocation of schemes by scheme size (according to level of assets)



A.6 Short-term risk concentration³⁴

Table A.1

Combined risk of schemes in deficit by insolvency and funding group

Combined risk (% of total)	Underfunding group			
Insolvency group	1	2	3	Grand total
1	8.9	7.0	0.4	16.3
2	11.0	7.6	0.9	19.4
3	11.6	11.9	0.7	24.1
4	16.2	17.4	1.1	34.7
5	11.5	24.8	1.0	37.3
6	7.6	11.3	1.5	20.4
7	5.6	11.5	0.8	18.0
8	7.7	14.1	1.7	23.6
9	42.8	44.5	10.6	97.9
10	106.8	90.4	11.4	208.6
Grand total	229.6	240.6	30.1	500.4

Despite including more schemes, the combined risk for deficit schemes in the extended Purple 2006 dataset (£500.4m) is lower than the £546.4m combined risk of schemes in the original Purple 2006 dataset. This is predominantly caused by the revised insolvency probabilities of sponsoring employers since the publication of Purple 2006. This ultimately lowered the insolvency risk component, P, of the combined risk calculation. The distribution of combined risk has become more concentrated in the worse insolvency groups, particularly groups nine and 10 (61%), due to the reclassification of the 10 insolvency groups (table A.2, also see chapter 8).

³⁴ To analyse combined short-term risk, schemes that were classed as in assessment as at 31 March 2006 were excluded: where a scheme's insolvency probability was not available, the average insolvency probability of the remaining schemes was taken.

Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006... continued

Table A.2

Combined risk of schemes in deficit as percentage of total

Combined risk (% of total)	Underfunding group			
Insolvency group	1	2	3	Grand total
1	1.78%	1.40%	0.07%	3.25%
2	2.20%	1.51%	0.18%	3.88%
3	2.31%	2.38%	0.13%	4.82%
4	3.23%	3.48%	0.22%	6.93%
5	2.30%	4.96%	0.20%	7.46%
6	1.52%	2.26%	0.30%	4.08%
7	1.12%	2.30%	0.17%	3.59%
8	1.55%	2.82%	0.35%	4.72%
9	8.56%	8.90%	2.11%	19.58%
10	21.34%	18.07%	2.28%	41.69%
Grand total	45.90%	48.09%	6.02%	100.00%

The classification of the 10 insolvency groups has changed since Purple 2006, in order to provide more granularity among the strongest schemes. For example, under the old classification, 82% of schemes in the Purple 2007 dataset were in the best two insolvency groups used in Purple 2006, with 94% in the top four. Therefore, in order to give a better depiction of risk, the insolvency groupings were reclassified into those outlined in table 8.2.

When the new insolvency group classifications were applied to the Purple 2006 dataset, it was found that combined risk still became more concentrated in the two worst insolvency groups in the extended dataset: however, the changes were not as significant.

Chapter three data tables

Columns and rows may not sum to the total due to rounding.
-: cells have been suppressed to preserve anonymity.

Scheme status by number of memberships	Purple 2006 (Extended)					Purple 2007					
	Open and part open	Closed to new members	Closed to future accruals	Winding up	Total	Open	Closed to new members	Closed to future accruals	Winding up	Total	
Number of schemes											
5 to 99 members	965	1,094	451	36	2,546	570	836	421	31	1,858	
100 to 999 members	1,318	1,556	413	25	3,312	1,037	1,392	436	12	2,877	
1,000 to 4,999 members	458	359	38	-	857	410	355	36	-	802	
5,000 to 9,999 members	130	67	-	-	201	94	62	-	-	160	
10,000 members +	172	70	-	-	242	134	58	-	-	195	
Total number of schemes	3,043	3,146	906	63	7,158	2,245	2,703	900	44	5,892	
Total percentage of schemes	43%	44%	13%	1%	100%	38%	46%	15%	1%	100%	
Number of memberships											
5 to 99 members	39,249	50,973	20,530	1,044	111,796	25,273	41,037	20,920	1,118	88,348	
100 to 999 members	473,768	550,524	117,342	7,465	1,149,099	383,734	505,904	129,631	3,562	1,022,831	
1,000 to 4,999 members	1,004,782	758,344	80,818	4,458	1,848,402	925,722	751,978	67,473	2,627	1,747,800	
5,000 to 9,999 members	919,635	492,097	26,304	-	1,438,036	670,162	447,193	29,225	-	1,146,580	
10,000 members +	6,832,482	2,745,114	-	-	9,577,596	4,760,736	1,895,563	56,277	-	6,712,576	
Total number of memberships	9,269,916	4,597,052	244,994	12,967	14,124,929	6,765,627	3,641,675	303,526	7,307	10,718,135	
Total percentage of memberships	65%	33%	2%	0%	100%	63%	34%	3%	0%	100%	

A.7 Data tables

Annex

Comparing the Purple 2006 dataset
with the DB universe as at March 2006... continued

Chapter three data tables... continued

Columns and rows may not sum to the total due to rounding

Member types by number of memberships	Purple 2006 (Extended)				Purple 2007			
	Active	Pensioner	Deferred	Total	Active	Pensioner	Deferred	Total
5 to 99 members	32,086	27,810	54,953	114,849	22,551	22,900	42,897	88,348
100 to 999 members	360,743	274,742	539,742	1,175,227	292,375	252,494	477,961	1,022,831
1,000 to 4,999 members	565,134	496,999	805,388	1,867,521	497,357	476,825	773,618	1,747,800
5,000 to 9,999 members	403,038	418,952	596,207	1,418,197	302,450	366,509	477,621	1,146,580
10,000 members +	2,256,082	3,433,284	3,776,234	9,465,600	1,594,093	2,462,935	2,655,549	6,712,576
Total number of memberships	3,617,083	4,651,787	5,772,524	14,041,394	2,708,826	3,581,663	4,427,646	10,718,135
Total percentage of memberships	26%	33%	41%	100%	25%	33%	41%	100%

Chapter three data tables

Columns and rows may not sum to the total due to rounding

Industry classification	Purple 2006 (Original)												
	Public administration	Agriculture	Mining	Utilities	Construction	Wholesale	Transportation	Communications	Manufacturing	Finance, Insurance and Real Estate	Retail	Services	Total
Number of schemes													
Total number of schemes	19	45	42	64	178	543	279	30	1,855	910	281	1,208	5,454
Total percentage of schemes	0%	1%	1%	1%	3%	10%	5%	1%	34%	17%	5%	22%	100%
Liabilities													
Total s179 liabilities £bn	1.3	1.1	11.6	25.7	20.4	25.2	26.9	69.2	166.8	135.7	44.8	103.4	632.1
Total percentage of s179 liabilities	0%	0%	2%	4%	3%	4%	4%	11%	26%	21%	7%	16%	100%

Annex

Comparing the Purple 2006 dataset
with the DB universe as at March 2006... continued

Chapter three data tables... continued

Columns and rows may not sum to the total due to rounding

Sample not equal to 10.7 million memberships as not all schemes have individual sector data

Industry classification	Purple 2007												
	Public administration	Agriculture	Mining	Utilities	Construction	Wholesale	Transportation	Communications	Manufacturing	Finance, Insurance and Real Estate	Retail	Services	Total
Number of schemes													
Total number of schemes	19	45	42	64	178	543	279	32	1,855	910	281	1,208	5,456
Total percentage of schemes	0%	1%	1%	1%	3%	10%	5%	1%	34%	17%	5%	22%	100%
Number of memberships													
Total number of memberships	11,985	30,699	104,022	261,912	199,646	460,113	401,956	899,787	2,918,254	1,934,752	1,133,238	1,564,809	9,921,172
Total percentage of memberships	0%	0%	1%	3%	2%	5%	4%	9%	29%	20%	11%	16%	100%
Liabilities													
Total s179 liabilities £bn	1.3	1.1	11.3	25.2	20.0	24.6	26.2	67.0	163.5	132.0	43.6	100.7	616.5
Total percentage of s179 liabilities	0%	0%	2%	4%	3%	4%	4%	11%	27%	21%	7%	16%	100%

Chapter four data tables

Columns and rows may not sum to the total due to rounding

s179 funding						
	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Scheme size measured by number of members						
2007						
5 to 99 members	1,858	7.2	7.2	0.0	101%	98%
100 to 999 members	2,877	62.1	65.7	-3.6	95%	91%
1,000 to 4,999 members	802	106.0	106.4	-0.4	100%	96%
5,000 to 9,999 members	160	71.5	68.2	3.3	105%	102%
10,000+ members	195	478.1	424.6	53.4	113%	108%
Total	5,892	725.0	672.1	52.9	108%	95%
2007 rolled back to 2006						
5 to 99 members	1,858	6.9	7.4	-0.5	94%	92%
100 to 999 members	2,877	59.0	67.4	-8.4	88%	85%
1,000 to 4,999 members	802	100.8	109.2	-8.4	92%	89%
5,000 to 9,999 members	160	67.9	69.9	-2.0	97%	94%
10,000+ members	195	454.4	434.9	19.4	104%	101%
Total	5,892	689.0	688.8	0.2	100%	88%

Table continued on page 154

Annex

Comparing the Purple 2006 dataset
with the DB universe as at March 2006... continued

Chapter four data tables... continued

Columns and rows may not sum to the total due to rounding

s 179 funding... continued						
	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Proportion of liabilities that are pensions in payment						
2007						
25% or less	3,015	100.8	111.8	-11.0	90%	86%
Between 25%-50%	2,078	380.7	350.3	30.3	109%	100%
Between 50%-75%	686	222.7	193.2	29.5	115%	115%
Between 75%-100%	113	20.8	16.8	4.0	124%	132%
Total	5,892	725.0	672.1	52.9	108%	95%
2007 rolled back to 2006						
25% or less	3,069	98.1	118.9	-20.8	82%	79%
Between 25%-50%	2,059	362.0	360.5	1.6	100%	94%
Between 50%-75%	655	208.8	192.6	16.2	108%	109%
Between 75%-100%	109	20.1	16.9	3.2	119%	127%
Total	5,892	689.0	688.8	0.2	100%	88%

Table continued on page 155

Chapter four data tables... continued

Columns and rows may not sum to the total due to rounding

s 179 funding... continued						
	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Scheme status						
2007						
Open	2,245	472.0	425.7	46.4	111%	97%
Closed to new entrants	2,703	236.8	229.5	7.3	103%	95%
Closed to future accrual	900	15.7	16.5	-0.8	95%	90%
Winding up	44	0.4	0.3	0.0	109%	98%
Total	5,892	725.0	672.1	52.9	108%	95%
2007 rolled back to 2006						
Open	2,245	448.1	436.0	12.1	103%	90%
Closed to new entrants	2,703	225.6	235.6	-10.0	96%	88%
Closed to future accrual	900	15.0	16.9	-1.9	89%	84%
Winding up	44	0.3	0.3	0.0	103%	93%
Total	5,892	689.0	688.8	0.2	100%	88%

Annex

Comparing the Purple 2006 dataset
with the DB universe as at March 2006... continued

Chapter four data tables

Columns and rows may not sum to the total due to rounding

Buy-out funding						
	Schemes in sample	Market value of assets £bn	Total buy-out liabilities £bn	Balance £bn	Weighted average funding level	Simple average funding level
Scheme size measured by number of members						
2007						
5 to 99 members	1,858	7.2	12.2	-5.0	59%	58%
100 to 999 members	2,877	62.1	111.0	-48.9	56%	54%
1,000 to 4,999 members	802	106.0	178.5	-72.4	59%	58%
5,000 to 9,999 members	160	71.5	114.2	-42.7	63%	61%
10,000+ members	195	478.1	709.6	-231.5	67%	65%
Total	5,892	725.0	1,125.5	-400.6	64%	56%
Proportion of liabilities that are pensions in payment						
2007						
25% or less	3,015	100.8	190.7	-89.9	53%	50%
Between 25%-50%	2,078	380.7	588.7	-208.0	65%	60%
Between 50%-75%	686	222.7	318.6	-95.9	70%	70%
Between 75%-100%	113	20.8	27.6	-6.8	75%	85%
Total	5,892	725.0	1,125.5	-400.6	64%	56%
Scheme status						
2007						
Open	2,245	472.0	712.7	-240.6	66%	58%
Closed to new entrants	2,703	236.8	384.4	-147.6	62%	56%
Closed to future accrual	900	15.7	16.5	-0.8	95%	90%
Winding up	44	0.4	0.5	-0.2	66%	58%
Total	5,892	725.0	1,125.5	-400.6	64%	56%

Chapter four data tables... continued

Columns and rows may not sum to the total due to rounding.
 '-': cells have been suppressed to preserve anonymity.

	Wholesale	Utilities	Transportation	Services	Retail	Public administration	Mining	Manufacturing	Finance, Insurance and Real Estate	Construction	Agricultural production	Communications	Total
Number of schemes by industry classification and s179 funding level													
Original 2006													
Low to 50%	26	-	-	43	9	-	-	53	28	-	-	-	172
50 to 75%	164	12	75	361	95	3	11	550	205	60	15	2	1,553
75 to 100%	207	26	134	507	116	9	17	844	365	81	17	9	2,332
Greater than 100%	146	26	69	297	61	6	11	408	312	34	8	19	1,397
Total													
2007													
Low to 50%	14	-	-	27	6	-	-	40	15	-	-	-	110
50 to 75%	125	8	45	256	64	-	9	353	141	38	10	-	1,051
75 to 100%	203	24	122	512	130	8	18	889	346	89	22	10	2,373
Greater than 100%	201	32	111	413	81	8	13	573	408	50	10	17	1,917
Total	5,451												
s179 liabilities by industry classification in £bn													
Original 2006													
Liabilities	25.2	25.7	26.9	103.4	44.8	1.3	11.6	166.8	135.7	20.4	1.1	69.2	632.0
Assets	23.1	26.7	28.0	98.1	47.6	1.3	15.7	156.0	138.6	22.2	1.0	68.8	627.0
2007													
Liabilities	24.6	25.2	26.2	100.7	43.6	1.3	11.3	163.5	132.0	20.0	1.1	67.0	616.5
Assets	24.2	28.0	29.5	103.3	50.0	1.3	16.7	163.7	145.6	23.1	1.0	73.0	659.4

Annex

Comparing the Purple 2006 dataset with the DB universe as at March 2006... continued

Distribution of schemes and memberships by status

Percentage distribution of schemes by status for each dataset

Columns and rows may not sum to the total due to rounding

	Original 2006	2007	Extended 2006	Extra 2,000 schemes
Open	31	38	33	31
Part open	11	Not available	10	7
Closed to future accruals	12	15	13	20
Closed to new members	45	46	44	42
Winding up	1	1	1	0

Percentage distribution of membership by status for each dataset

Columns and rows may not sum to the total due to rounding

	Original 2006	2007	Extended 2006	Extra 2,000 schemes
Open	43	63	40	16
Part open	29	Not available	25	9
Closed to future accruals	26	34	33	75
Closed to new members	2	3	2	0
Winding up	<1	<1	<1	0

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