The purple book

DB pensions universe risk profile

Pension Protection Fund

The Pensions Regulator

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1 Executive summary

1.1 Introduction

This is the first edition of the Pensions Universe Risk Profile, a joint study by the Pensions Regulator and the Pension Protection Fund which focuses on the risks faced by defined benefit (DB) pension schemes, predominantly in the private sector.

The key aim is to increase knowledge and help understanding of DB schemes in the UK. Information on such schemes has until now been limited, with little known about small and medium-sized schemes. The study is based on the most comprehensive data set on the DB pension universe to date, representing a step change in available information. The focus of the study is on the risks of scheme members not receiving promised benefits and of calls on the Pension Protection Fund. These in turn depend on two key elements: the risk of the sponsoring employer becoming insolvent and the extent of scheme underfunding.

It is intended to release this publication annually and it will evolve over time. In particular, the data set will increase significantly. Comments and suggestions for improvement are welcomed.

Most of the basic information comes from the scheme returns provided to the Pensions Regulator and provides a snapshot at one point in time. The publication puts this information into context by using other data sources to look at trends in key variables.

1.2 Overview

This contents of this study are summarised below.

2 The data

- Most of the analysis in this publication is based on a data set of around 5,800 schemes. This represents over 50% of the likely total of schemes in the DB universe, but over 85% of the membership and pension fund liabilities given the inclusion of nearly all large schemes.
- All statistics and graphs in the publication based on the scheme return information refer to the sample; there has been no extrapolation or grossing up to arrive at figures for the DB universe.
- The scheme return data for these schemes includes valuation information on scheme assets and liabilities, asset allocation, employers, scheme type and status, membership details, trustees and their advisers.
- The scheme return valuation data has been adjusted by the Pension Protection Fund to a common date (31 March 2006) and basis for comparability purposes.
- Further information comes from electronic forms (available on the Pension Protection Fund's website at www.pensionprotectionfund.org.uk) covering items such as contingent assets, pension fund deficits on a s179 basis and deficit reduction contributions.
- Insolvency failure scores are supplied by Dun & Bradstreet. 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 Pension Protection Fund's risk-based levy calculations.

3 Scheme demographics

- A majority of schemes in the sample (58%) are closed to new members. The proportion of schemes still open to new members rises sharply as scheme size increases. Open schemes make up 31% of schemes in the sample but represent 43% of total memberships.
- Scheme membership for the sample totalled 12.6m. The largest group of scheme memberships are deferred (41%), 33% are current pensioner memberships, and 26% 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.
- 36% of scheme sponsors are in manufacturing, more than double the share of manufacturing in the economy.

4 Scheme funding

- The aggregate estimated s179 deficit (total assets for all schemes minus total liabilities) for our sample was £33.8bn as at 31 March 2006.
- We do not yet have funding information on the prudent basis required by the Pensions Act 2004 (which replaced the Minimum Funding Requirement) but such information will be available in later years. We can, however derive information on the section 179 (s179) basis which places a value on the liabilities used by the Pension Protection Fund for calculation and allocation of the risk-based levy.
- At that date, on a s179 basis, 83% of schemes were in deficit, with an aggregate deficit of £76.3bn: 17% were in surplus, with an aggregate surplus of £42.6bn.
- Scheme liabilities and assets are concentrated in three broad industry groups: manufacturing, services and the financial sector. Manufacturing has the largest number of schemes (1,945), the highest level of liabilities (£201.6bn) and the highest overall deficit (£18.8bn).

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 deficit to vary by around £116bn, with a peak of almost £126bn in early 2003 and a low point of £10bn in April 2006. (On 31 March 2006 the FTSE All Share Index stood at 3276, while the 10-year gilt yield was 4.4%.)
- The total deficits of schemes in deficit would have varied by £70bn, with a peak of £130bn in early 2003 and a low point of £60bn in April 2006.
- A 0.1% point increase (reduction) in gilt yields reduces (increases) aggregate scheme underfunding by around £13bn. A 2.5% increase (reduction) in equity prices reduces (increases) scheme underfunding by around £11bn. A 10% increase in equity markets would eliminate the deficit as would a 0.3% rise in gilt yields.
- Each year added to the longevity assumption used in the s179 valuation would add 3 - 4% to pension scheme liabilities, raising the deficit by around £20bn.

6 Insolvency risk

- Looking at our sample of schemes, insolvency probabilities decrease as funding levels increase and, to a limited extent, as size of schemes increase. There does not seem to be a correlation between insolvency rates and asset allocation.
- Insolvency rates vary considerably by industry, with the highest being for the more traditional industries, in particular manufacturing.
- Insolvency Service data shows the rate of company insolvency at a 25-year low.

7 Asset allocation

- The scheme returns show that by far the largest proportion of assets is in equities (61%) followed by gilts and fixed interest assets (28%).
- The proportion held in gilts and fixed interest assets increases as scheme maturity increases. The share of gilts and fixed interest assets also increases, to a lesser extent, as scheme size and funding level rise.
- The equity proportion of pension fund assets has fallen sharply since the mid-1990s, according to data from the Office for National Statistics, a sharp fall in the UK equity proportion more than offsetting a rise in the overseas equity proportion. The bond proportion of pension fund assets has risen over the same period, mainly reflecting increased proportions of overseas and corporate bonds.

8 Short term risk concentration

- Insolvency and underfunding risk can be combined for each scheme so as to give a snapshot of the short term risk posed to scheme members and the Pension Protection Fund as at 31 March 2006. (It was noted earlier how much the funding position can vary with, for example, changes in financial market conditions.)
- Multiplying each scheme's s179 deficit by the probability of the sponsoring company becoming insolvent over the next 12 months showed that most of the short term risk to the Pension Protection Fund arose from schemes with weak sponsors. For instance, some 41% of the combined risk arose from under 2% of schemes, whose sponsors had on average an insolvency probability of 36%.
- However, around 33% of the combined risk was in the best two insolvency groups given the large number of schemes in the groups (around 76% of the total) and the extent of underfunding.
- By industry, the largest risk concentrations were in manufacturing and finance.
- The total combined risk on a one-year horizon for our sample was around £550m on a s179 basis as at 31 March 2006. This excludes schemes in the Pension Protection Fund's assessment process at that date. This short term calculation should be distinguished from the results of the Pension Protection Fund's Long Term Risk Model (LTRM). The LTRM generates a probability distribution of claims on the Pension Protection Fund over different longer term horizons from five to twenty years, taking into account a very large number of possible economic and financial market outcomes.

2 The data

2.1 Introduction

- The sample of schemes represents over 50% of the likely universe of schemes by number, and over 85% of total liabilities.
- Most of the inputs come from scheme returns provided to the Pensions Regulator.
- Insolvency probabilities for sponsoring companies from Dun & Bradstreet are also used.

2.2 Primary sources

The information used in most of this publication comes from the three primary sources described below.

Scheme returns provided to the Pensions Regulator

The scheme returns issued between June 2005 and June 2006 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 a data set of around 5,800 schemes. This represents over 50% of the likely total of schemes in the DB universe, but over 85% of the membership and pension fund liabilities given the inclusion of the majority of large schemes.

The schemes not yet included are mainly small ones (fewer than 5 members) although some large company schemes are still not included because data is not yet available for them, or the quality of the data is inadequate. Table 2.1 shows that around 90% of schemes with over 5,000 members, 80% of schemes between 500 and 4,999 members, and 31% of schemes with under 100 members are included. In obtaining the estimate of the percentage of the total liabilities represented by the sample in this study, the sample liabilities for each size category have been scaled up by the ratio of the Pensions Regulator's 2005 estimate for each size category to the current sample size.

Table 2.1
The schemes in the sample

Size of scheme (number of members)	**Under 100**	**100-999**	**1,000 -4,999**	**5,000 -9,999**	**10,000 and over**	**Total**
Number of schemes in this study	1,812	2,799	756	175	230	5,772
2005 Universe	5,900	3,500	950	200	250	10,800
Schemes in this study as a percentage of 2005 Universe (%)	31.2	80.8	80.5	89	92.4	54.1

Source: the Pension Protection Fund and the Pensions Regulator

The universe figures in Table 2.1 are derived from the number of DB schemes which paid an initial levy in 2005/06. Around 11,400 schemes were issued with initial levy bills. However, a number of those schemes were found to be ineligible, for example because they were DC schemes, and the DB universe is now estimated to be 10,800. The database should expand steadily over coming months as more returns are received, checked and processed. By the end of the Pension Protection Fund's financial year (31 March 2007) the database should include details of the vast bulk of DB schemes. It was decided to publish at this stage rather than wait for a complete data set because the sample of schemes is in statistical terms very large, particularly for bigger schemes, and adds considerably to the knowledge of the DB universe.

Voluntary form reporting

Electronic forms are available on the Pension Protection Fund's website for pension schemes to provide data regarding sectionalised schemes, contingent assets, participating employers, scheme structure, estimates of pension fund deficits on a s179 basis, deficit reduction contributions and block transfers. Some 1,500 schemes representing £400bn in liabilities provided information in this way. (The deficits on a s179 basis, deficit reduction contributions and block transfers feed into the Pension Protection Fund's funding estimates.)

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

The Dun & Bradstreet 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 Pension Protection Fund's risk-based levy calculations. More detail on the D&B scores is given in Chapter 6.

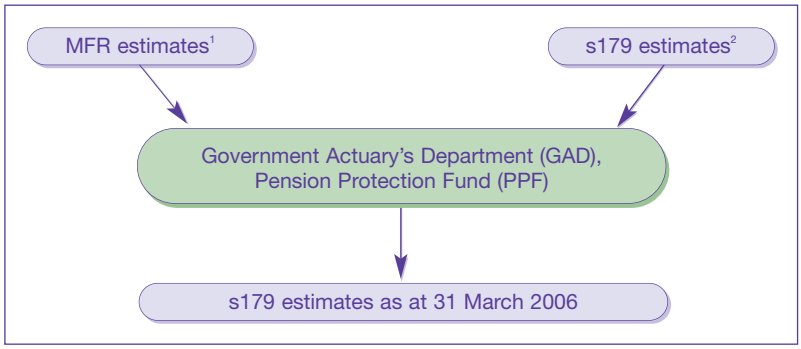
2.3 Funding estimates

A key element in the Pensions Regulator's approach to risk-based regulation of scheme funding is an understanding of which schemes pose the largest risks to scheme members and to the Pension Protection Fund. This is driven by data on funding levels and deficits along with credit rating data. The data held by the regulator is regularly updated as new data becomes available.

For the purpose of this study we have used data that, as far as possible, reflects the position at a common date. The Pension Protection Fund needs data on this basis for the purpose of calculating the levy that pension scheme trustees should pay, and to send out levy invoices accordingly, and hence this study uses their database. For 2006/7 the pension protection levy is based on a combination of scheme-based and risk-based factors. The scheme-based levy is calculated using the pension scheme's liabilities[1] while the risk-based levy is derived from estimates of each pension fund's deficit and the probability of failure of the sponsoring employer.

For calculation of the risk-based levy, the Pension Protection Fund uses estimates of the scheme's funding position on a s179 basis as at 31 March 2006. This is, broadly speaking, what would have to be paid to an insurance company to take on the payment of Pension Protection Fund compensation.

Chart 2.1
Derivation of 31 March 2006 funding estimates



[1] The majority relating to different valuation dates over the last four years
[2] Relate to any point after November 2004

[1] Measured in accordance with section 179 of the Pensions Act 2004 and associated regulations and guidance.

There are two ways in which the Pension Protection Fund calculates the funding position of schemes:

1 Around 10% of schemes have provided s179 estimates based on financial market conditions at some point in respect of dates from November 2004. For this 10%, the Government Actuary's Department (GAD), working with the Pension Protection Fund's actuaries, has revalued the s179 assets and liabilities to 31 March 2006, the relevant date for the Pension Protection Fund's levy calculations.

2 For those schemes which have not provided s179 valuations, GAD and the Pension Protection Fund's actuaries used MFR (Minimum Funding Requirement) estimates from the scheme returns, the majority relating to different valuation dates over the last four years. They applied a formula to convert the values to a s179 basis as at 31 March 2006. The GAD estimates then form the basis for the levy calculations. It will not be until 2008/9 that the Pension Protection Fund will have s179 valuations for the whole universe, and will then be able to dispense with MFR roll-forwards. Total assets in the sample amounted to £626bn (£635bn including deficit reduction contributions) and total liabilities £669bn.

For the purpose of this study, Pension Protection Fund actuaries have also produced FRS17 and full buy-out estimates of the funding position as at 31 March 2006.

3

Scheme demographics

The following charts are drawn from information collected from the scheme return.
This information covers 5,772 schemes and includes 12.6m defined benefit scheme members.

3.1 Scheme status

Definition of status categories

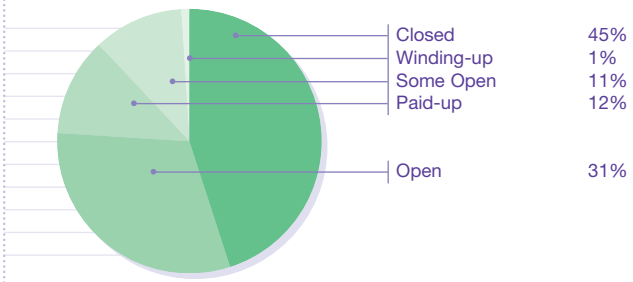
Scheme status categories used in the scheme return were:

- Open
  the scheme continues to accept new members. Benefits continue to accrue.
- Some sections open/ some sections closed
  a scheme that has sections with different status types. For example, the scheme may have a DB section closed to new entrants and a DC section open to new entrants. A significant number of these will be arrangements where the DB element is no longer offered to new employees, although it is not possible to distinguish between those schemes with an open DB element and those without.
- Closed to new members
  the scheme does not admit new members. Existing members can continue to accrue pensionable service/benefits.
- Paid up
  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.

Distributions of schemes by status

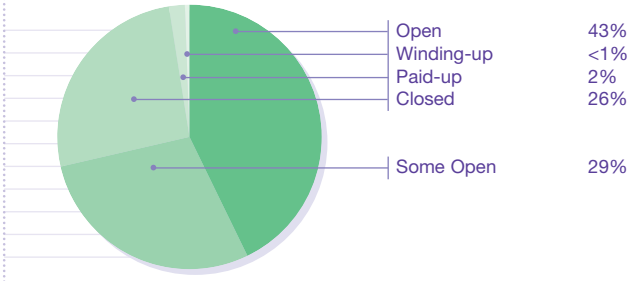
31% of the schemes in the sample remain open, representing 43% of the memberships in the sample. Of the remainder, 45% of schemes in the sample are closed to new members, 12% are closed to future accrual and 11% have some sections open to new membership (which may be a mix of DC sections open and DB sections open):

Chart 3.1
Percentage distribution of schemes by status



However, 43% of memberships in the sample are in open schemes:

Chart 3.2
Percentage distribution of members by scheme status

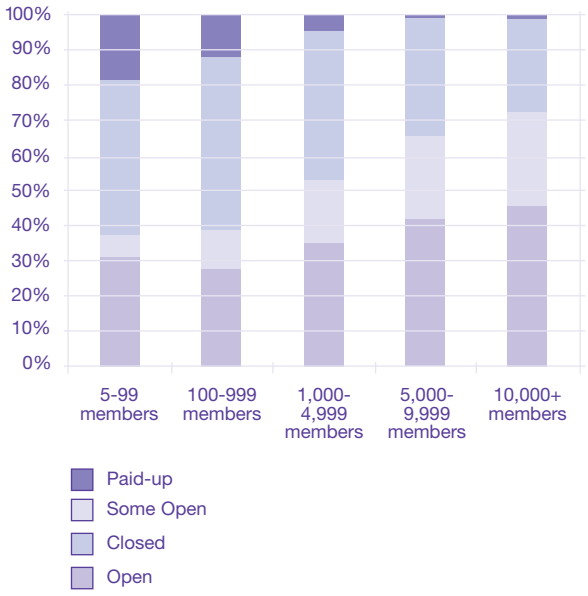


The level of schemes in wind-up in the sample is relatively low. As a proportion of the total sample of schemes it is not expected to represent the total proportion of schemes that are in the process of winding up relative to all occupational pension schemes. This is because the sample is taken from the Pension Protection Fund levy-paying population as at 31 March 2006, and schemes that began to wind up or were completely wound up prior to 6 April 2005 are exempt from the Pension Protection Fund.

Analysis of status by scheme size

The proportion of schemes still open to new members rises sharply as scheme size increases:

Chart 3.3
Distribution of scheme status by scheme size



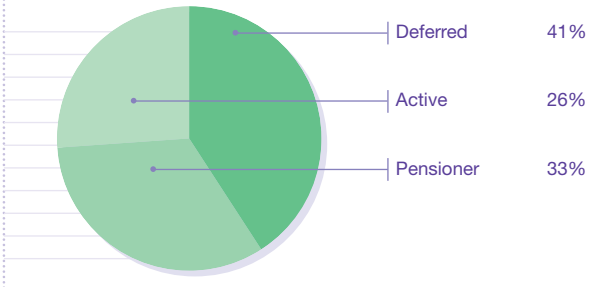
The proportion of schemes which are closed outright decreases as scheme size increases, with the increase in open schemes being paralleled by a similar rise in the proportion of part closed/part open schemes.

The assets held by schemes closed to new accrual or in wind-up are barely 1.5% of the total, indicating that most schemes in these categories are relatively small.

3.2 Scheme membership

Scheme memberships for the sample totalled 12.6m members. The largest single group of memberships are deferred (41% of all members). 33% of scheme memberships are current pensioners, and 26% are active memberships. The data counts all memberships in all schemes with a right to a deferred pension as deferred members. As some people may have a number of deferred pension entitlements spread over a number of schemes, they may be counted more than once in the data. The same can be true for some pensioner members.

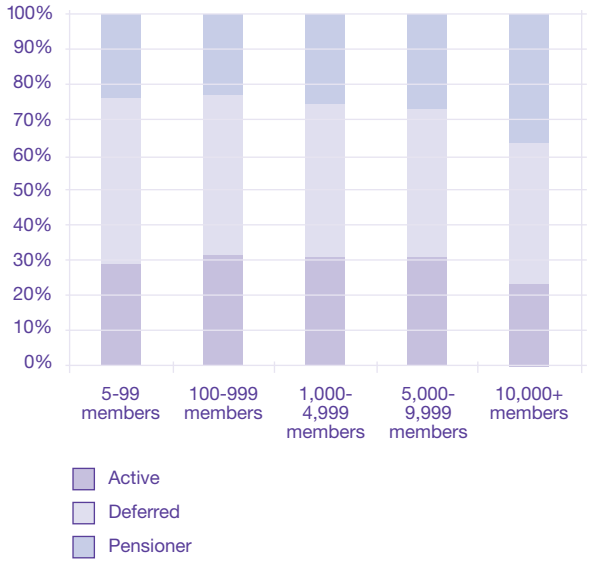
Chart 3.4
Distribution of member types in sample



Analysis of membership by scheme size

As scheme size increases there is a tendency for the proportion of pensioner members of a scheme to increase. This may be due to some smaller schemes buying annuities when individuals become pensioners. There is a significantly lower proportion of active members in the largest schemes than in the others.

Chart 3.5
Distribution of member types by scheme size



The average ages of scheme members are 66.1 years for pensioners, 46.6 years for deferred pensioners and 45.4 years for active members.

3.3 Schemes in the sample by sponsor type and industry

Industry classification

Classification by industry, using the US 1972 SIC coding, is available for the parent companies of schemes in the sample. This has been slightly modified in this document for ease of presentation and to avoid categories containing very few entries in the dataset. Utilities have been separated out and postal service-related companies have been amalgamated with the Communications category.

Manufacturing companies represent the largest category of scheme sponsors while the next highest proportion relates to schemes sponsored by companies categorised as Services. This category includes holding companies which are often the parent companies for schemes, which has the effect of masking the nature of the business with which the scheme is associated. 36% of scheme sponsors are in manufacturing, more than double the share of manufacturing in the economy (manufacturing accounts for roughly 14.8% of GDP). The high representation of manufacturing in DB schemes probably reflects the fact that many manufacturing companies have been in existence for a long time.

Chart 3.6
Proportions of sample by industry classification

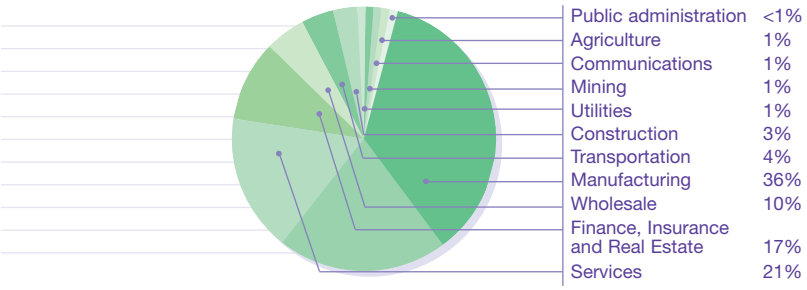


Chart 3.7
Proportion of estimated scheme assets by SIC code

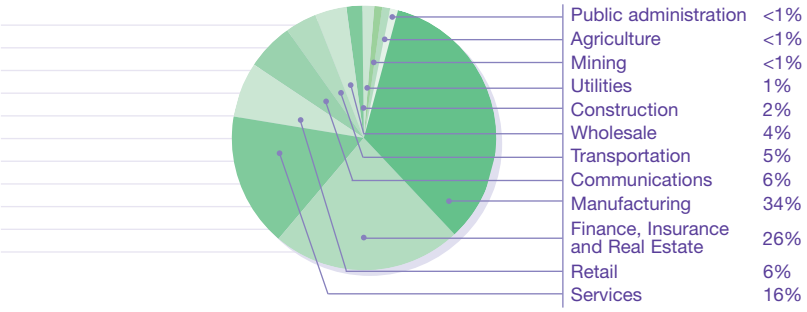
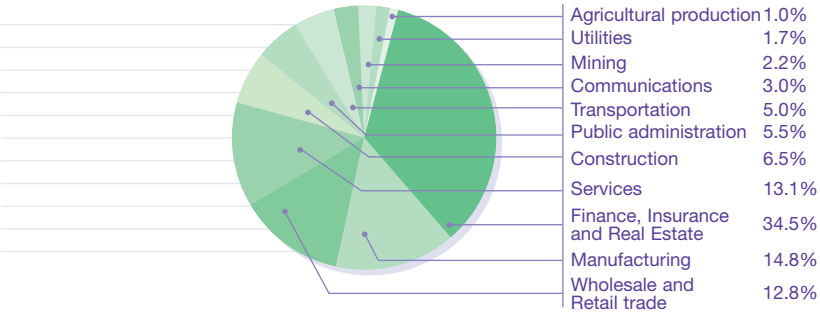


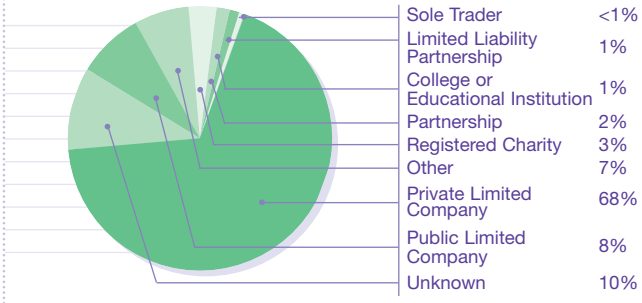
Chart 3.8
Proportion of GDP by industry



Sponsor type

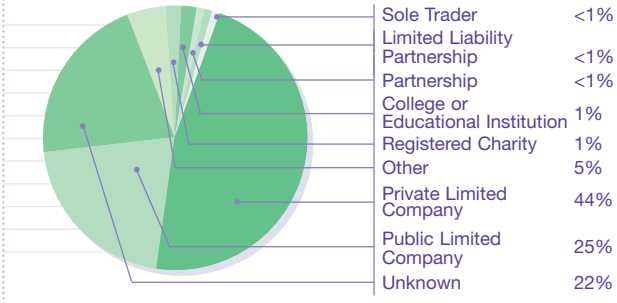
The majority of companies in the sample were private limited companies. These support just under 68% of schemes by number, comprising 45% of scheme assets. Many of the schemes have a parent company which is not a Public Limited Company (PLC), but which is in turn owned by another company which is a PLC. Therefore a much higher percentage of the schemes in the sample can be said to be *connected* to a PLC. While public limited companies support just over 8% of schemes by number, these schemes represent just under 25% of scheme asset values.

Chart 3.9
Proportion of company types in sample



Company type data derived from 5,736 schemes where suitable data was supplied.

Chart 3.10
Sum of estimated assets by company type



Company type data derived from 5,736 schemes where suitable data was supplied.

3.4 The move to DC

There is significant evidence of a trend for sponsors of DB pension schemes to reduce their exposure to defined benefit pension risk by reducing the level, or changing the nature of, benefits offered to employees. These changes have been highlighted through company announcements or by reports in the media. This section provides some data on these changes.

Forms of change

The extent to which sponsors of DB schemes have sought to reduce pension risk has varied. For example:

- Sponsors have changed pension benefits for new employees only, or for both new and existing employees.
- Future only or both future and past service benefits have been changed. One of the few ways the cost of past service benefits can be reduced is by removing the link to earnings at retirement.
- Benefits have been either reduced or replaced (for example with defined contribution benefits).
- Contributions required from employees have been increased, and in a few cases the future level of employees' contributions has been linked to future experience (eg actual compared with assumed pensioner longevity).

Trends

The charts below evidence some of the trends for sponsors to reduce or change benefits in DB schemes.

DB scheme closure

Chart 3.11 shows the number of DB schemes in the sample closing by year. The trend shows a material increase in the number of schemes closing from 2000. The annual number of closures has, however, declined significantly since 2003. The marked decline shown in the scheme return data may be due to a fall in the urgency or pace for remaining schemes to consider closing.

The rate of closures increased significantly during 2001. At this time, equity markets had started to fall and the first disclosures under FRS 17 highlighted the impact that reductions in real bond yields had on the measured cost of providing defined benefits.

Chart 3.11
Number of schemes in sample closing by year

Note: chart only includes schemes that are completely closed. It excludes around 600 schemes in the scheme return that are part closed. The return provides insufficient information to establish year of part closure and whether it is closed to DB or DC.

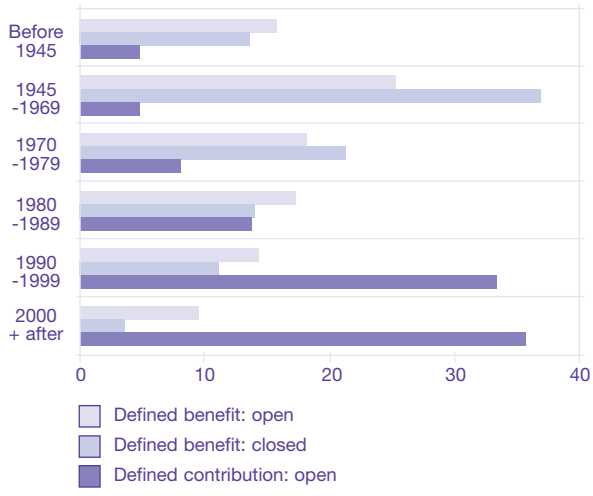
Membership of DB schemes

Statistics produced by the Office for National Statistics (ONS) show that the number of active members of private sector occupational defined benefit schemes has decreased as a percentage of the total workforce. In 1997, 34% of the active workforce participated in a defined benefit scheme. By 2005 this had fallen to 19%.

Based on research by ONS, there has been a sustained reduction in the percentage of employees that are members of private sector DB pension schemes. The percentage of employees has fallen from 46% in 1997 when records began to 35% in 2005. It is interesting to note that ONS data appears to indicate an increase in the rate of decline from 2003.

This is reflected in a long term decline in the establishment of DB schemes:

Chart 3.12
Foundation dates of private sector occupational pension schemes[1] by status and benefit structure[2]



[1] Schemes with 12 or more members only.
[2] Data for closed defined contribution schemes are not considered reliable enough to publish.

Source: ONS Pensions Trends Survey 2005

Reductions in DB pensions

While it appears from changes in active memberships that DC arrangements are forming a greater proportion of benefits provided to active employees, there is also evidence of benefit reductions or increases in member contributions for existing members of DB schemes. Table 3.1 opposite shows changes to defined benefits by membership.

The change that has impacted the greatest number of defined benefit members who are still in DB schemes is an increase in their contribution rate. This indicates a willingness on the part of a number of sponsors to continue to provide such pensions if members contribute more to the cost.

Table 3.1
Changes to DB schemes, by percentage of total active employee membership of DB schemes

	2000 to 2004	2004 to 2005
Changes to the definition of pensionable earnings or final pensionable earnings	16	7
Contributions increased (either for all active members, or optionally to maintain the previous level of benefit)	12	Data presentation changed
Increases in rate of contribution from the members	Data presentation changed	16
Active employee members have been given the choice of a reduced accrual rate, or the same accrual rate but with increased member contributions	Data presentation changed	4
Reductions in accrual rates	7	3
Normal pension age increased	3	1
Move to career average or 'salary sacrifice' arrangements	1	1

Source: Occupational Pension Schemes Survey 2004 and 2005, Government Actuary's Department

4 Scheme funding

4.1 Introduction

This section sets out an analysis of the funding level of defined benefit schemes drawing on the scheme return data set. 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 prudently on the basis that the scheme remain supported by an ongoing employer. As the adoption of this new regime is only required for valuations with effective dates on or after 22 September 2005, little data is yet available on this basis. Over time, information on funding levels under Part 3 of the Pensions Act 2004 will become available. This will provide a measure of current funding relative to trustees' estimates of the level of assets they believe it appropriate to hold to meet the liabilities of their schemes.

A measure of pension liabilities on a common basis that is currently available is that calculated under section 179 of the Pensions Act for Pension Protection Fund levy purposes. Chapter 2 explains how we have derived this data. This measure has the advantage of being close to the liability that the Pension Protection Fund would expect to assume in the event of a scheme entering the fund, hence enabling quantification of the fund's overall risk exposure. The Pensions Regulator has, however, stated that it will use the s179 valuation (alongside FRS17) as one of its triggers for considering whether a scheme's Part 3 valuation merits examination by the regulator.

Section 179 liability measures have some characteristics which mean that care should be taken in drawing conclusions on levels of scheme funding. In particular, the liabilities exclude any indexation of benefits accrued before April 1997; also, liabilities in respect of scheme members below Pension Protection Fund pensionable age are reduced by 10% and possibly subject to a cap, to reflect the basis on which the fund pays compensation. On the other hand, the basis for valuing these 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 estimated figures 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 on an approximate basis to allow for the valuation of full scheme benefits rather than the levels of PPF compensation. Approximate figures under the FRS17 accounting standard have also been calculated using a similar approach.

Measures of funding levels are subject to variation over time depending on market conditions and demographic expectations (notably predicted longevity). An analysis of the impact of past and potential future market conditions is therefore included in the next chapter. This analysis includes trend data relating to funding calculated under the FRS17 accounting standard (or IAS19 equivalent) that is required for most corporate accounting. This data too has its limitations as the underlying assumptions are chosen by the directors of the companies concerned and can therefore vary between companies. Furthermore, it is not always possible, for various reasons, to link the disclosed figures to individual schemes. And little data is readily available for companies outside the FTSE 350, although the Pensions Regulator will be collecting this data for a wider range of companies.

4.2 Analysis of funding levels

Overall funding level

Aggregate estimated s179 deficits were £33.8bn at 31 March 2006 for all schemes in the data set. This contrasts with aggregate deficits of approximately £88.6bn on an FRS17 basis and £440.4bn on a full buy-out basis as estimated from the s179 data. Total s179 deficits for schemes that were in deficit at this date were £76.3bn, as shown in table 4.1 below.

Table 4.1
Overall funding levels

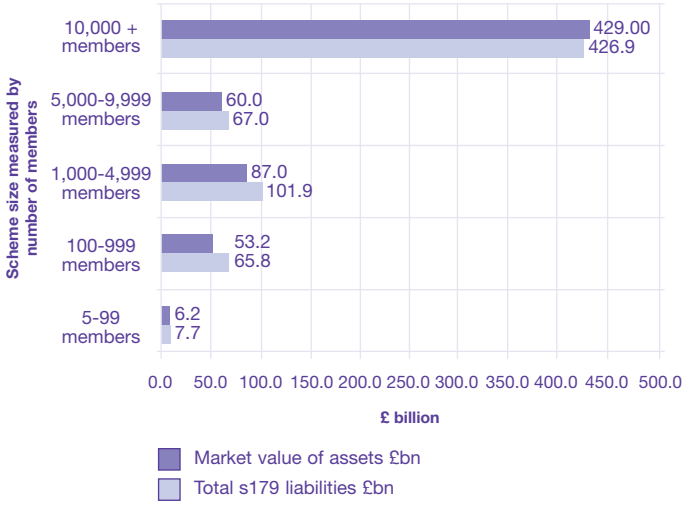
	s179	FRS17	Full buy-out
Total schemes	5,772	5,772	5,772
Total assets £bn	635.5	635.5	635.5
Total liabilities £bn	669.2	724	1,075.8
Aggregate deficits £bn	-33.8	-88.6	-440.4
Total deficits for schemes in deficit £bn	-76.3	-110.6	-440.6
Total surpluses for schemes in surplus £bn	42.6	22.1	0.3

We estimate that schemes in the sample comprise over 85% of private sector defined benefit schemes by membership.[2] However, in general schemes not included in the data set are smaller than those included in the data set. Analysis suggests that smaller schemes generally have lower funding levels.

Analysis by size of scheme membership

Schemes with larger memberships tend to have higher funding levels. Schemes with more than 10,000 members comprise 64% (£426.9bn) of liabilities. They make up 43% (£32.9bn) of deficits on a s179 basis out of total deficits of £76.3bn, while comprising 82% (£34.9bn) of surpluses out of total surpluses of £42.6bn.

Chart 4.1
Distribution of s179 assets and liabilities at 31 March 2006 by size of scheme membership



[2] Extrapolating the data to the population suggests that total scheme assets are approximately £749bn and corresponding s179 deficits around £39bn.

Average funding levels (calculated as the value of assets divided by the value of liabilities) fall from 96% for schemes with more than 10,000 members to 78% for schemes with between 100 and 999 members. Schemes with fewer than 100 members are slightly better funded, with assets of 81% of liabilities on average.

Table 4.2
s179 funding levels at
31 March 2006 by scheme size

Scheme size measured by number of members	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Surplus /deficit £bn	Aggregate funding level	Average funding level
5 to 99 members	1,812	6.2	7.7	-1.4	81%	81%
100 to 999 members	2,799	53.2	65.8	-12.6	81%	78%
1,000 to 4,999 members	756	87.0	101.9	-14.9	85%	83%
5,000 to 9,999 members	175	60.0	67.0	-7.0	90%	89%
10,000+ members	230	429.0	426.9	2.1	100%	96%
Total	**5,772**	**635.5**	**669.2**	**-33.8**	**95%**	**80%**

Note: the data above is based on GAD estimates of scheme assets and liabilities based on MFR data for a majority of the schemes in the sample.

Chart 4.2 shows the distribution of funding level bands by scheme size. This indicates that for smaller schemes, the averages in table 4.1 above are influenced by a significant minority of schemes with very low funding levels (less than 50% of liabilities).

The data reflects funding relative to the Pension Protection Fund level of benefits, and is an indicator of the fund's exposure to risk. This will differ from members' exposure to the level of funding relative to their total benefits.

Chart 4.2
Distribution of s179 funding levels at
31 March 2006 by size of scheme membership

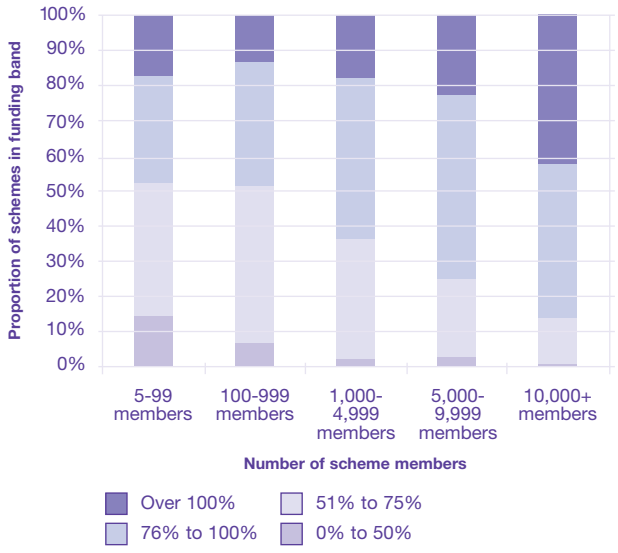
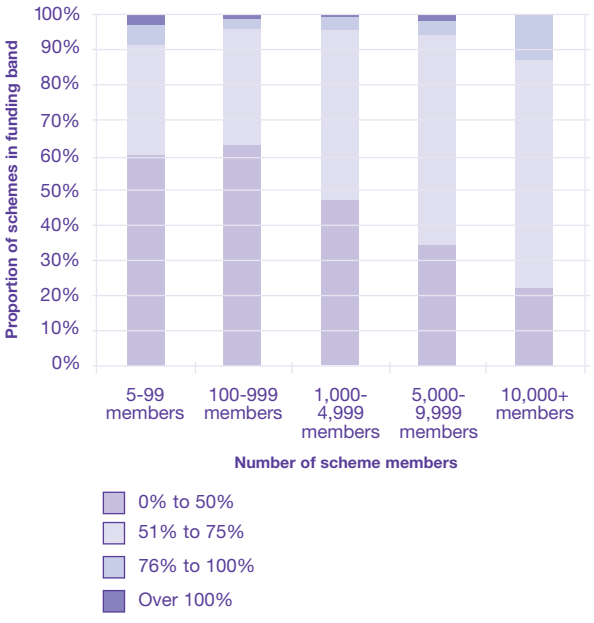


Table 4.3 below shows estimated funding levels for the above schemes using the approximate cost of buying out the benefits for schemes in the data set with an insurer. Just under 60% of schemes are less than 50% funded on a buy-out basis.

Table 4.3
Estimated full buy-out funding levels at 31 March 2006

Scheme size measured by number of members	Schemes in sample	Market value of assets £bn	Total buy-out liabilities £bn	Surplus /deficit £bn	Aggregate funding level	Average funding level
5 to 99 members	1,812	6.2	12.4	-6.2	50%	50%
100 to 999 members	2,799	53.2	106.6	-53.4	50%	48%
1,000 to 4,999 members	756	87	164.5	-77.5	53%	52%
5,000 to 9,999 members	175	60.0	108.3	-48.3	55%	55%
10,000+ members	230	429.0	684.0	-255.0	63%	60%
Total	**5,772**	**635.5**	**1,075.8**	**-440.4**	**59%**	**50%**

Chart 4.3
Distribution of buy-out funding levels at 31 March 2006 by size of scheme membership



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. Total assets exceed total liabilities for schemes where more than 50% of liabilities are pensions in payment. For these schemes, total surpluses for schemes in surplus is £26.3bn, whilst the total deficit for those in deficit is £8.4bn.

As a proportion of liabilities, average funding levels fall from 116% for schemes where 75% to 100% of liabilities relate to pensions in payment to 72% for schemes where less than 25% of liabilities relate to pensions in payment.

Chart 4.4
Distribution of s179 assets and liabilities at 31 March 2006 by scheme maturity

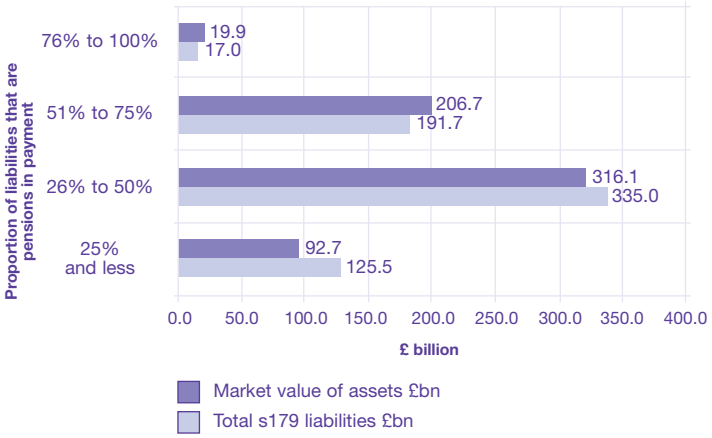


Table 4.4
Analysis of s179 funding levels at 31 March 2006 by scheme maturity

Proportion of liabilities that pensions in payment	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Surplus /deficit £bn	Aggregate funding level	Average funding level
25% and less	3,339	92.7	125.5	-32.8	74%	72%
26% to 50%	1,836	316.1	335.0	-19	94%	89%
51% to 75%	515	206.7	191.7	15	108%	103%
76% to 100%	82	19.9	17	2.9	117%	116%
Total	**5,772**	**635.5**	**669.2**	**-33.8**	**95%**	**80%**

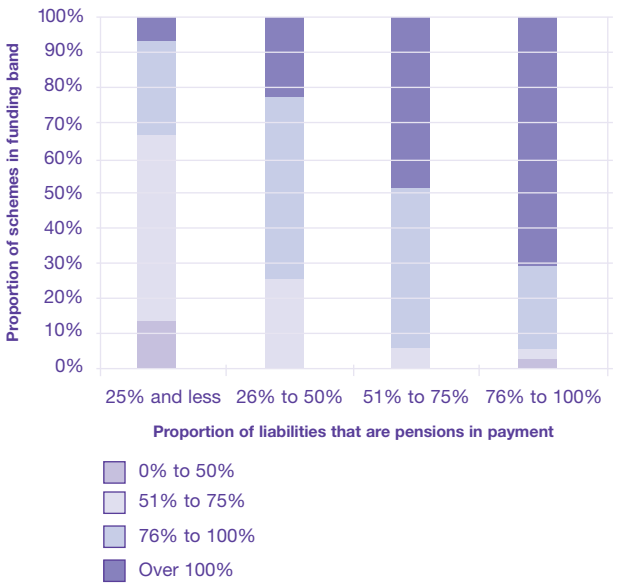
Note: the data above is based on GAD estimates of scheme assets and liabilities based on MFR data for a majority of the schemes in the sample.

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 pensioners above normal pensionable age receiving 100% of benefits while non-pensioners receive 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 Pension Protection Fund does not provide indexation on payment as compensation for pre-1997 pensions, these schemes may display better than average levels of funding. In addition, the buy-out basis used for assessing Pension Protection Fund 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 4.5 shows the distribution of funding levels for schemes in each maturity band. The chart shows the significantly greater proportion of immature schemes (where less than 25% of liabilities are pensions in payment) that have low funding levels. 65% of these schemes have funding levels below 75% on a s179 basis. This might be expected for the reasons given above.

Chart 4.5
Distribution of s179 funding levels at 31 March 2006 by scheme maturity



Analysis by scheme status

The further a scheme is along the lifecycle towards wind-up, the lower the s179 funding level. This might be expected as employers are more likely to close schemes to new members and new accruals where they are struggling to maintain funding of the scheme.

As a proportion of liabilities, average funding levels fall from 83% for open schemes to 79% for schemes that are winding up.

Chart 4.6
Distribution of s179 assets and liabilities at 31 March 2006 by scheme status

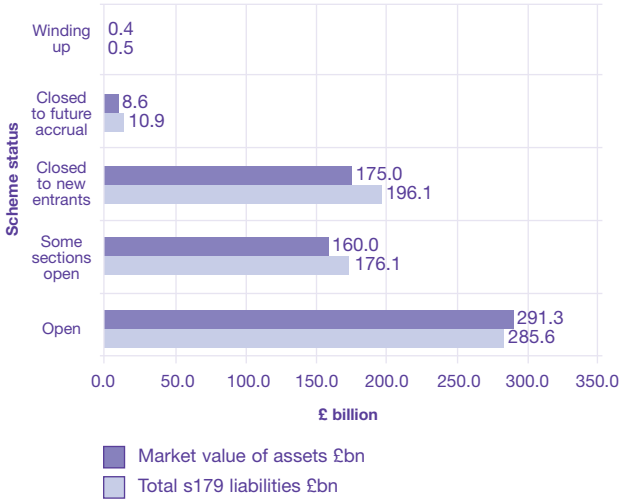


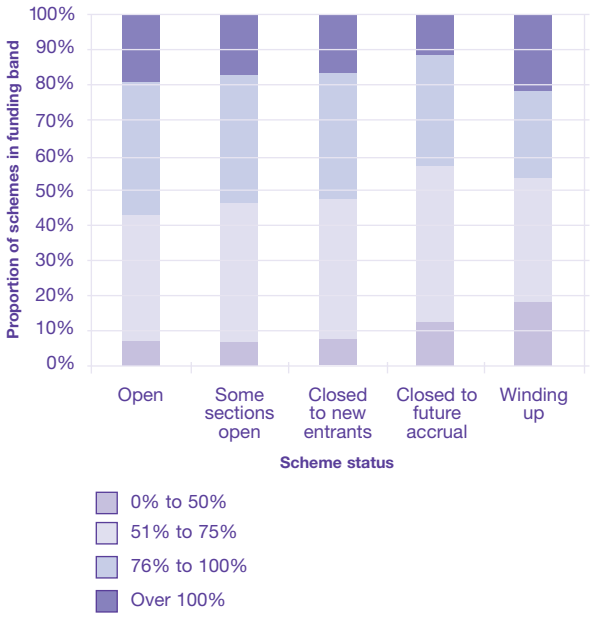
Table 4.5
Analysis of s179 funding levels at 31 March 2006 by scheme status

Scheme status	Schemes in sample	Market value of assets £bn	Total s179 liabilities £bn	Surplus /deficit £bn	Aggregate funding level	Average funding level
Open	1,808	291.3	285.6	5.7	102%	83%
Some sections open	641	160.0	176.1	-16.1	91%	80%
Closed to new entrants	2,617	175.0	196.1	-21.1	89%	80%
Closed to future accrual	674	8.6	10.9	-2.3	79%	77%
Winding up	32	0.4	0.5	-0.1	86%	79%
Total	**5,772**	**635.5**	**669.2**	**-33.8**	**95%**	**80%**

Note: the data above is based on GAD estimates of scheme assets and liabilities based on MFR data for a majority of the schemes in the sample.

Chart 4.7 below shows the distribution of funding levels by scheme status. A minority of open schemes are significantly underfunded (ie less than 50% funded on a s179 basis). Just over 50% of schemes that are in the process of winding up are less than 75% funded on a s179 basis.

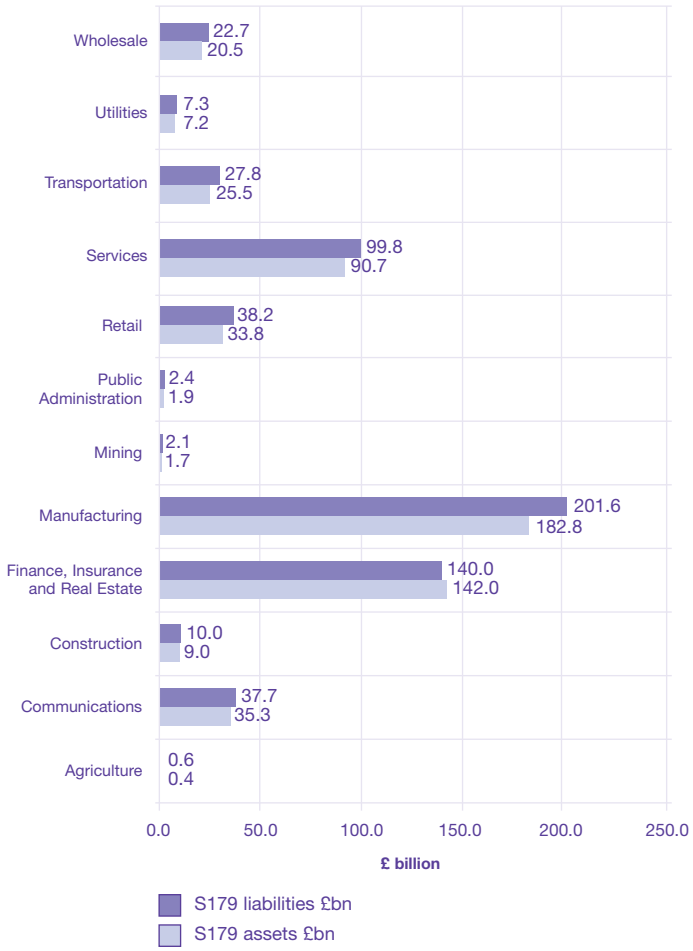
Chart 4.7
Distribution of s179 funding levels at 31 March 2006 by scheme status



Analysis by employer industry

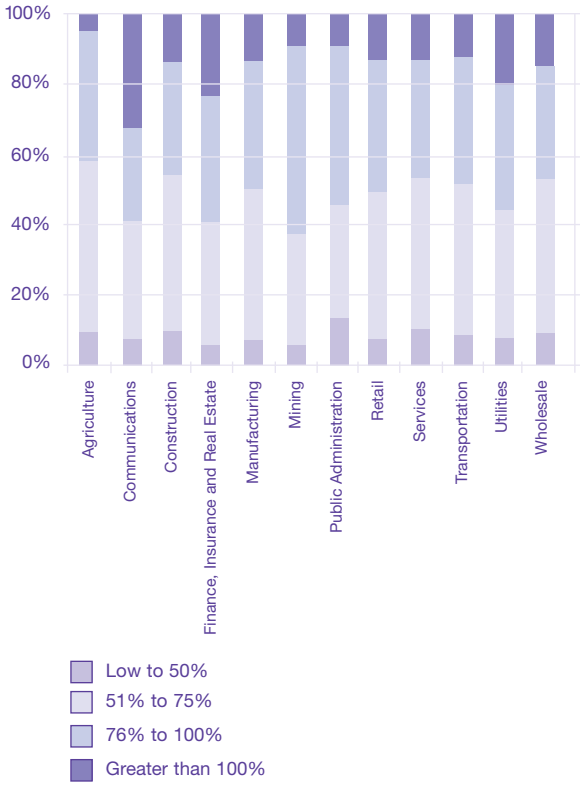
Scheme liabilities and assets are concentrated in three broad industry groups: manufacturing, services and the financial sector. The manufacturing sector has the largest number of schemes (1,945), the highest level of liabilities (£201.6bn), and also the highest overall deficit (£18.8bn).

Chart 4.8
Distribution of s179 assets and liabilities at 31 March 2006 by employer industry



The distribution of funding levels and the unweighted average funding level (79%) across the manufacturing sector is similar to the majority of other industries.

Chart 4.9
Distribution of s179 funding levels at 31 March 2006 by industry



5 Funding sensitivities

The analyses of funding set out in Chapter 4 provide a snapshot at a point in time. In practice, funding levels are inherently volatile and are susceptible to change in line with:

- employers making substantial deficit correction payments;
- 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;
- changes in assumptions of expected mortality; and
- changes in benefits.

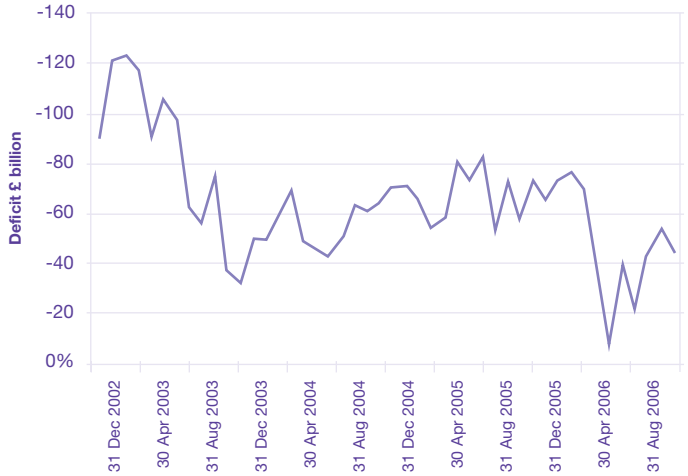
5.1 Deficit reduction payments

Schemes in the sample had certified approximately £9.8bn of special contributions to reduce deficits by 7 April 2006. These contributions were certified to the Pension Protection Fund for the purpose of enabling a more up-to-date assessment to be made of the scheme funding position, with the extra contributions increasing the scheme assets and so reducing the risk-based levy. The deficit reduction contributions were not just paid by the companies sponsoring the largest schemes; some 45% of the £9.8bn was paid by employers sponsoring schemes with under 10,000 members.

5.2 Movements in asset values and discount rates

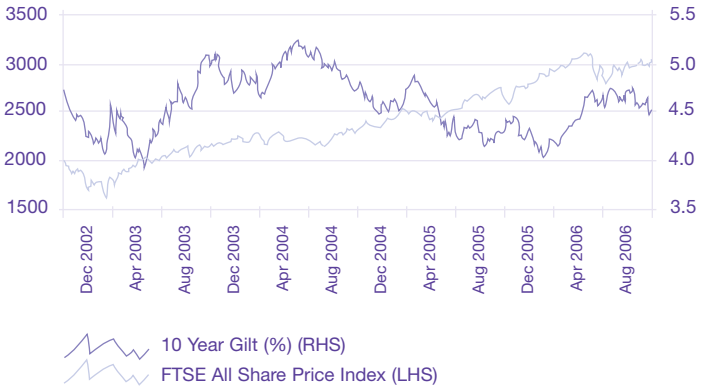
The changes in market conditions since the end of 2002 have had the effect of causing the aggregate deficits measured on a s179 basis to vary by around £116bn (see chart 5.1), with a peak of £126bn in early 2003 and a low point of £10bn in April 2006. (Although the aggregate deficit in April was relatively modest, those schemes in deficit would still have had total deficits of around £60bn.) These figures, shown below, are based on adjusting the aggregate 31 March 2006 deficit of £33.8bn 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 outgo, changes in contributions paid or actual scheme experience, or changes in mortality assumptions.

Chart 5.1
Estimated aggregate assets less aggregate liabilities of pension schemes in the data set



Source: the Pension Protection Fund
Note: the assets and liabilities have been adjusted for changes in market conditions only. Any deficit reduction contributions have been included throughout the period shown.

Chart 5.2
Movements in stock markets and gilt yields

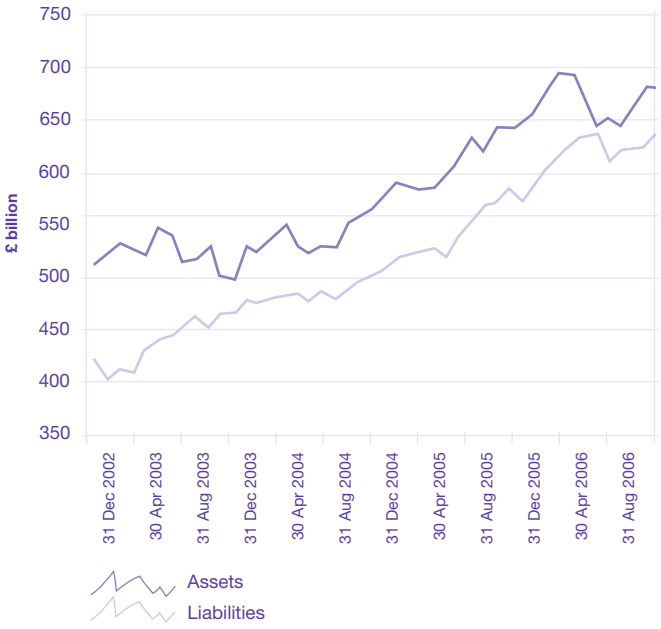


Source: Bloomberg

The major trends in market conditions underlying the variation can be seen in chart 5.2, while chart 5.3 below shows the movements in 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 April 2006, rising equity values combined with sharply rising gilt yields resulted in a significant fall in the aggregate deficit. There was some reversal after the correction in equity values at the end of May and by September the aggregate deficit was £45bn (£50bn at end November).

Chart 5.3
Movement in s179 assets and liabilities of schemes in data sample

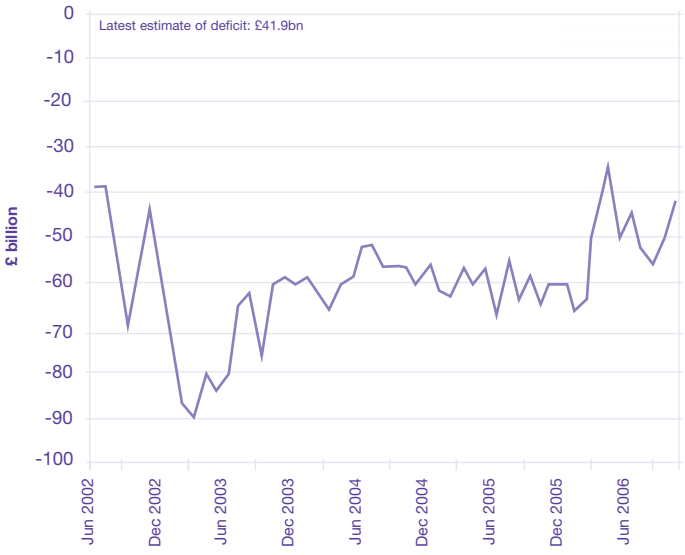


Source: the Pension Protection Fund and the Pensions Regulator
Note: the assets and liabilities have been adjusted for changes in market conditions only. Any deficit reduction contributions have been included throughout the period shown.

It would appear that taking account of the other factors that affect DB deficits does not greatly change the position illustrated above. The trend in actual deficits (as reported in company accounts on the FRS17/IAS19 accounting basis) looks fairly similar to the estimated s179 figures shown above. This is illustrated by figures relating to the FTSE 350 companies collated by Watson Wyatt shown in chart 5.4 below. (Because of the way in which Watson Wyatt collect the data, these figures tend to lag behind the s179 figures by several months.)

The Watson Wyatt figures indicate that FRS17/IAS19 tends in aggregate to produce higher values for liabilities, and hence net deficits, than s179. This suggests that currently the impact on liabilities of stripping out those elements not covered by Pension Protection Fund compensation outweighs the impact of the lower discount rate (at least 0.5% below gilts) used for s179 calculations compared with the AA corporate bond discount rate (currently around 0.4% above gilts) used for FRS17/IAS189. Some of the difference may also be explained by the fact that the Watson Wyatt figures relate to the global obligations of the FTSE companies, ie those an investor would focus on.[3]

Chart 5.4
Aggregate FRS17 deficit, FTSE350



Source: Watson Wyatt Pension Deficit Index, October 2006

[3] For instance the FRS17/IAS19 deficit for the FTSE 350 alone averaged around £75bn between 2004 and 2006, compared with around £50bn during the same period for the schemes in our sample covering 87% of scheme assets. In the short term the differential is likely to increase further with changes to the methodology for collating s179 figures introduced in September 2006. In the longer term, however, the differential may shrink as schemes become more mature and hence members become eligible for higher levels of Pension Protection Fund compensation

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% increase or reduction in gilt yields increases or reduces aggregate scheme funding by around £13bn.
- A 2.5% increase or reduction in equity prices increases or reduces aggregate scheme funding by around £11bn. This is based on our data which shows that 61% of assets are invested in equities.

These changes may be combined: for example, a 7.5% increase in equities coupled with 0.3% increase in gilt yields would deliver an aggregate surplus (all else being equal) of £37bn. An equivalent worsening in markets would more than treble the deficit to £108bn. Both these eventualities fall well within the bounds of recent experience, and more extreme movements could easily be imagined. (A 7.5% fall in the FTSE 100 from the 31 March level would be equivalent to a drop of around 450 points in the index.)

Table 5.1
Analysis of expected movement in s179 funding levels from a base aggregate deficit of £34bn at 31 March 2006

Assets less liabilities £bn	Gilt yields						
	-0.3%	-0.2%	-0.1%	0.0%	0.1%	0.2%	0.3%
Equity markets							
7.5%	(42)	(27)	(14)	(0)	12	25	37
5.0%	(53)	(39)	(25)	(12)	1	14	26
2.5%	(64)	(50)	(36)	(23)	(10)	3	15
0.0%	(75)	(61)	(47)	(34)	(21)	(8)	4
-2.5%	(86)	(72)	(58)	(45)	(32)	(20)	(8)
-5.0%	(97)	(83)	(69)	(56)	(43)	(31)	(19)
-7.5%	(108)	(94)	(80)	(67)	(54)	(42)	(30)

Source: the Pension Protection Fund

Tables 5.2 and 5.3 below show the equivalent sensitivity of section 179 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 31 March 2006

Assets relative levels £bn	Gilt yields						
	-0.3%	-0.2%	-0.1%	0.0%	0.1%	0.2%	0.3%
Equity markets 7.5%	106	106	105	105	105	105	105
5.0%	104	104	104	103	103	103	103
2.5%	102	102	102	102	102	101	101
0.0%	101	100	100	100	100	100	99
-2.5%	99	99	98	98	98	98	98
-5.0%	97	97	97	97	96	96	96
-7.5%	95	95	95	95	95	94	94

Source: the Pension Protection Fund

Table 5.3
Analysis of expected movement in s179 funding levels from a base of 100 at 31 March 2006

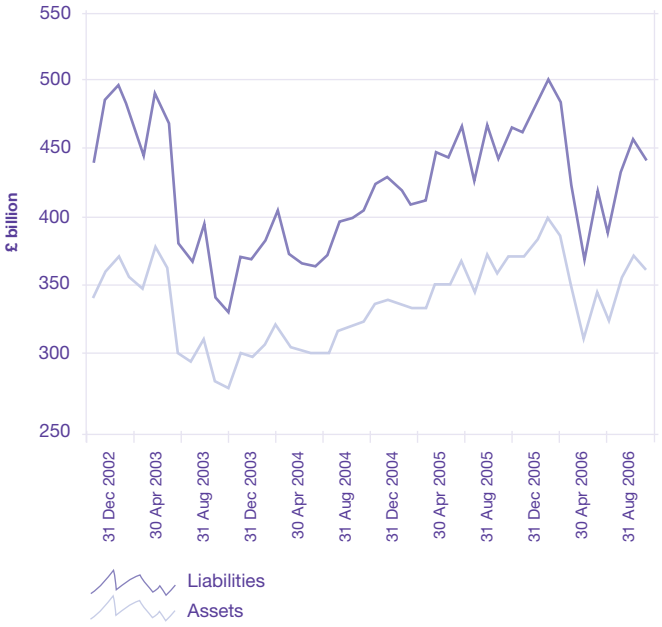
Change in gilt yields	-0.3%	-0.2%	-0.1%	0.0%	0.1%	0.2%	0.3%
Liabilities relative to 31 March level (=100)	106.8	104.4	102.2	100.0	97.9	95.8	93.8

Source: the Pension Protection Fund

Sensitivity analysis for schemes in deficit on a s179 basis

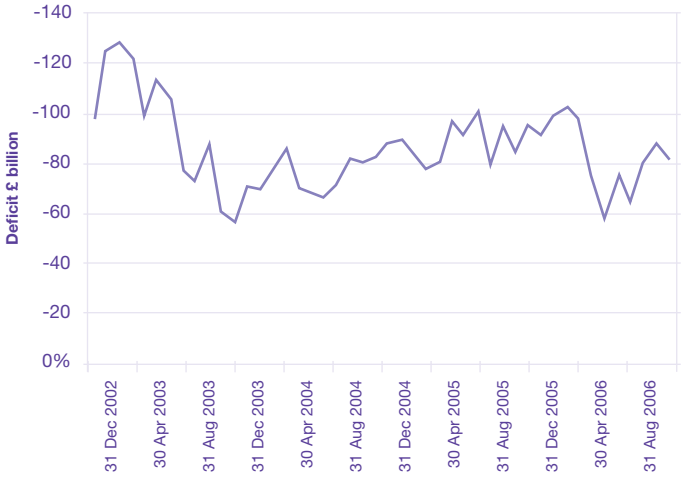
The same analysis has been performed for schemes in deficit only, as at 31 March 2006. The picture is broadly the same. The largest total deficit of £130bn occurred in early 2003 and the smallest in early 2006 at £60bn. The difference between the largest and smallest deficits is narrower than in the case of all schemes because financial market conditions can swing schemes from surplus to deficit, or deficit to surplus. In early 2003, for example, there would have been 5,450 schemes in deficit on a s179 basis compared with 4,470 in April 2006.

Chart 5.5
Movement in s179 assets and liabilities of schemes in data sample (excluding schemes in surplus)



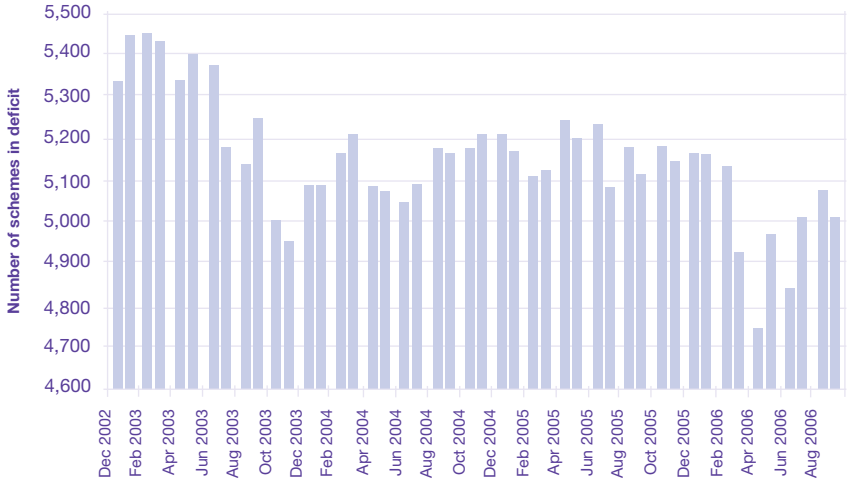
Source: the Pension Protection Fund

Chart 5.6
Estimated aggregate assets less aggregate liabilities of pension schemes in data sample (excluding schemes in surplus)



Source: the Pension Protection Fund

Chart 5.7
Estimated number of schemes in deficit each month



Source: the Pension Protection Fund

Table 5.4
Analysis of expected movement in s179 funding levels from a base total deficit of £76bn as at 31 March 2006 (excluding schemes in surplus)

Assets less liabilities £bn	Gilt yields						
	-0.3%	-0.2%	-0.1%	0.0%	0.1%	0.2%	0.3%
Equity markets 7.5%	(85)	(76)	(67)	(59)	(51)	(44)	(38)
5.0%	(92)	(82)	(73)	(64)	(56)	(49)	(42)
2.5%	(98)	(88)	(79)	(70)	(61)	(54)	(46)
0.0%	(105)	(95)	(85)	(76)	(67)	(59)	(52)
-2.5%	(113)	(102)	(91)	(82)	(73)	(65)	(57)
-5.0%	(120)	(109)	(98)	(88)	(79)	(71)	(63)
-7.5%	(128)	(116)	(106)	(95)	(86)	(77)	(69)

Source: the Pension Protection Fund

Table 5.4 shows how the underfunding position of schemes in deficit varies with gilt yields and equity markets. It can be seen that if gilt yields rose by 0.3 percentage points and equity markets by 7.5% then the deficit of these schemes would fall to £38bn. If gilt yields fell by 0.3 percentage points and equity markets by 7.5% then the total deficit would rise to £128bn.

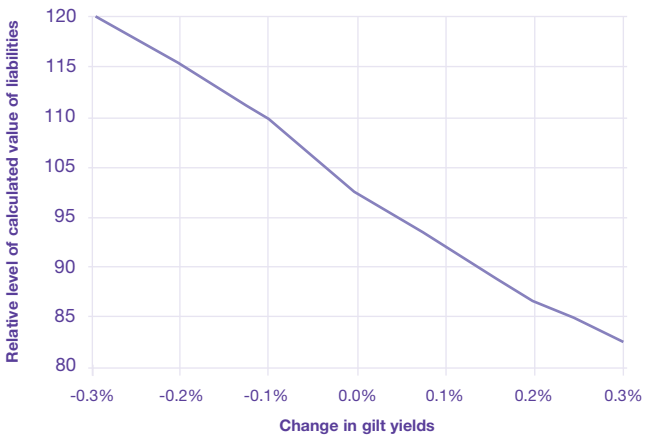
It can be seen from table 5.5 that as equity markets fall the assets of schemes in deficit rise. For example, a fall in equity markets of 7.5% results in a 31% increase in the level of assets. This is because the fall in equity markets results in an increase in the number of schemes in deficit which causes 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 31 March 2006 (excluding schemes in surplus)

Assets Relative levels	Gilt yields						
	-0.3%	-0.2%	-0.1%	0.0%	0.1%	0.2%	0.3%
Equity markets							
7.5%	108	100	96	91	85	78	70
5.0%	111	105	98	94	89	84	73
2.5%	114	110	103	97	92	87	82
0.0%	116	112	107	100	95	90	86
-2.5%	120	114	109	104	98	93	88
-5.0%	126	118	112	106	102	96	93
-7.5%	131	119	116	110	104	100	95

Source: the Pension Protection Fund

Chart 5.8
Sensitivity of liabilities to gilt yields (excluding schemes in surplus)



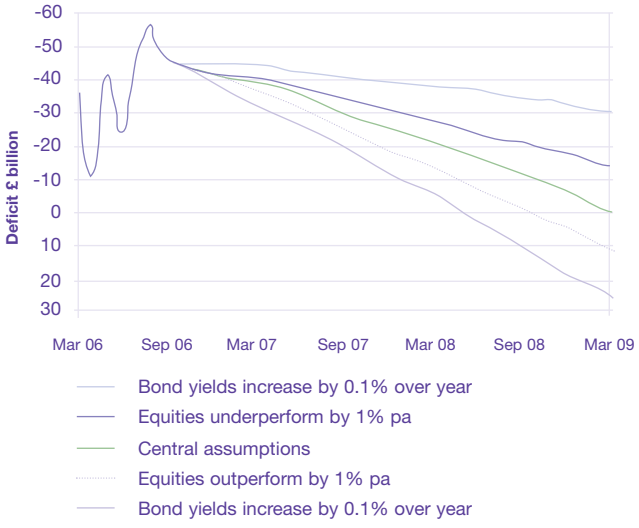
Source: the Pension Protection Fund

Forward looking illustration of sensitivities

A sensitivity analysis has also been conducted on the aggregate deficit level (chart 5.9). The base scenario takes the funding position as at 31 March 2006 then models asset performance according to actual market conditions between March 2006 and September 2006 with liability values based on actual bond yields. Thereafter, bond yields and bank rates are assumed to remain constant at September 2006 levels and equities are assumed to return 4% over bank rates. This is the assumption made in the Pension Protection Fund's Long Term Risk Model where in the long term the equity return over gilts is around 3%. (There is considerable uncertainty and debate over the value of the 'equity risk premium'). The following scenarios have been modelled to illustrate sensitivity:

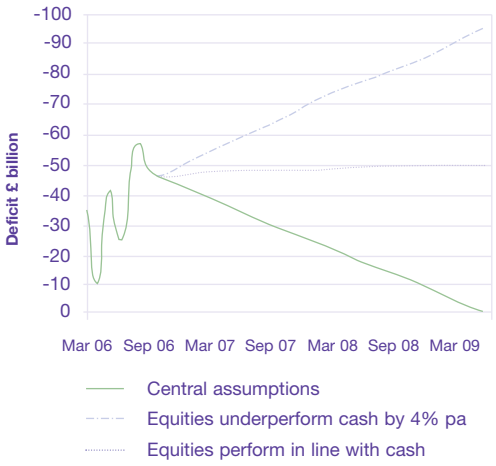
- Bond yields gradually increase at the rate of 0.1% (10 basis points) per year.
- Bond yields gradually decrease at the rate of 0.1% (10 basis points) per year.
- Equities outperform our central assumption by 1% per year.
- Equities underperform our central assumption by 1% per year.

Chart 5.9
Effect on aggregate deficit of changes in asset returns



Source: the Pension Protection Fund and the Pensions Regulator

Chart 5.10
Different assumptions on equity returns



Source: the Pension Protection Fund and the Pensions Regulator

The base scenario implies that deficits will narrow over the forecast horizon, mainly reflecting equity outperformance. However, a decrease in equity returns of 1% and a fall in bond yields of 0.1% together will reverse this trend. The scenarios in chart 5.9 make no allowance for the impact of other factors such as changes in specific scheme funding, deficit reduction contributions or mortality assumptions.

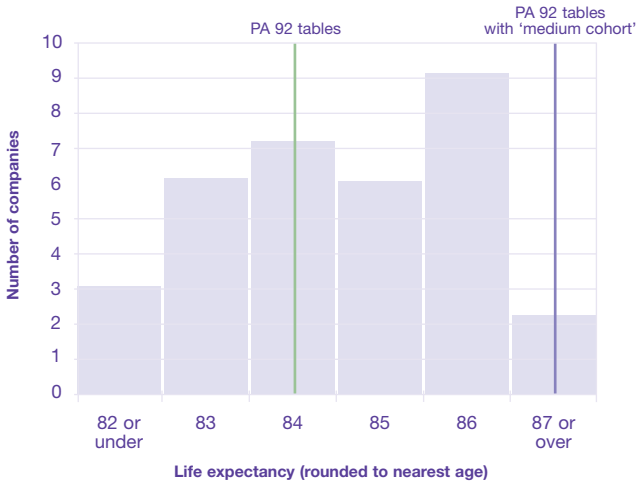
Chart 5.10 shows what would happen making different assumptions about equity returns in the base scenario. If equities returned the same as cash then the aggregate deficit would drift higher. If equities returned 4% less than cash then the deficit would expand to almost £100bn by March 2009.

5.3 Impact of changes in expected longevity

The Pension Protection Fund's s179 basis uses the same mortality assumptions for all schemes, namely the PA92 'medium cohort' assumptions prepared by the Continuous Mortality Investigation Board (CMIB) of the Institute and Faculty of Actuaries.[4] The medium cohort assumptions take into account the observation that the biggest improvements in mortality in recent years have occurred for those born between around 1925 and around 1945. The PA92 assumptions used by the Pension Protection Fund are at the top of the range of the life expectancy assumptions given by those FTSE 100 companies that disclosed their longevity assumptions in 2005 in their company accounts (although this is not necessarily what is assumed for the pension scheme's actual funding).

[4] PMA92 (for males) and PFA92 (for females), applicable to each individual scheme member's year of birth allowing for mortality improvements in line with the medium cohort improvement rates.

Chart 5.11
Life expectancy assumptions used by FTSE 100 companies

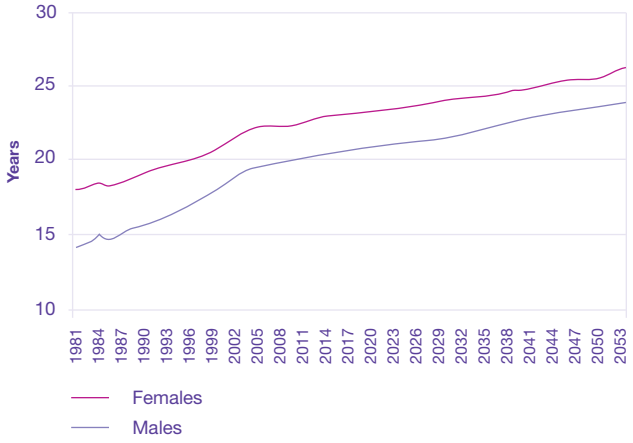


Source: Lane Clark & Peacock

For many years there has been evidence that people are living longer. There is current debate over the strength of the trend (the rate of longevity improvement) and whether or not the trend will continue at the current rate and for how long. So it may be that the medium cohort projections take sufficient account of life expectancy improvements or indeed that the 'long cohort' projections, which cover a 40-year cohort period and which assume greater life expectancy, prove to be a better set of mortality improvement assumptions. The PA92 longevity assumptions referred to earlier are based on the experience of insurance companies rather than that of occupational pension schemes, and assumptions by individual schemes which fall short of these assumptions may be appropriate and prudent. The key issue for pension schemes is that estimating future trends in life expectancy is uncertain. If pension scheme members live for a longer or shorter time than expected it will have an impact on the cost of pension liabilities.

Chart 5.12 below shows estimates of future life expectancy based on the principal projections of the Government Actuary's Department. In these estimates, average life expectancy at age 65 for males has risen from 14.0 years in 1981 to 19.5 years in 2006. This is expected to increase to 21.3 by 2025 and 23.9 by 2054.

Chart 5.12
United Kingdom cohort life expectancy for males and females at 65



Source: GAD

Table 5.6 below from the Prudential illustrates the cost of getting mortality assumptions wrong. If more money is put into a pension scheme now it will reduce the chance that more may unexpectedly have to be put in later.

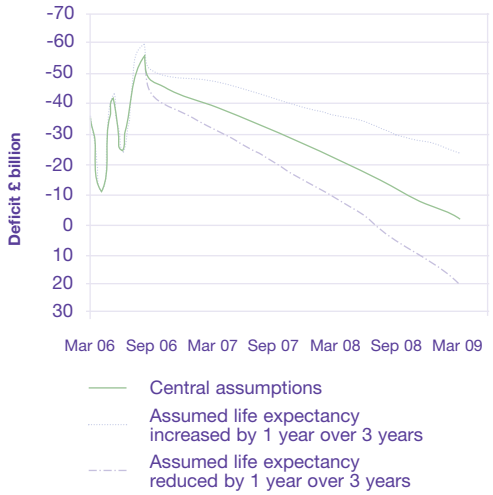
Table 5.6
Increase in cost of securing liabilities for incorrect mortality assumptions

		If mortality assumptions are wrong by		
For each scheme member aged as shown, cost of securing liabilities would increase by:		1 year	3 years	5 years
	65	3%	8%	13%
	70	4%	11%	–
	75	5%	–	–

Source: Prudential
Note: the table has been built on the assumption that the case is for a level annuity commencing in 2006 payable in advance. Mortality as per 100% PMA92c2004 with 100% of medium cohort improvements thereafter, discounting by 5% per annum. Figures shown are the increase in reserve commensurate with reducing the flat all-age mortality percentage from 100% to a level yielding 1, 3 and 5 years of extra life expectancy relative to base case.

Chart 5.13 below illustrates the sensitivity of the projected aggregate deficit level to changes in the assumption for longevity underlying the value of liabilities. The base scenario is the same as in chart 5.12 above. The assumption for future longevity has then been adjusted to allow for assumed life expectancy either to increase or to decrease by one year over the three-year period from 31 March 2006. The impact is to increase or decrease the estimated projected total aggregate deficit by around £20bn at 31 March 2009.

Chart 5.13
Effect on deficit of changes in mortality assumptions



Source: the Pension Protection Fund and the Pensions Regulator

5.4 Benefits and inflation effects

The final sensitivity considered in this chapter is the impact of higher inflation. If the assumed rate of inflation increases by 0.1%, then s179 liabilities for the schemes in our sample increase by approximately 1.4% or £9.4bn. 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 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 1.4% or £9.4bn. If it is assumed that real yields are constant, so that nominal yields fall as inflation declines, then liabilities increase by around 0.7% as result of a 0.1% decrease in inflation; the lower benefit levels compared with the base case are more than offset by the impact of the lower yield as a discount factor.

6 Insolvency risk

6.1 Summary

- The Pension Protection Fund obtains its assessment of insolvency probabilities based on the historical financial and payment data of individual sponsoring employers through Dun & Bradstreet (D&B).
- There appears to be a negative correlation between insolvency probabilities and funding levels of schemes and, to a limited extent, scheme size. It also emerges that more traditional industries such as manufacturing have higher insolvency probabilities.
- Economy wide, insolvency rates are currently at a 25-year low.

6.2 Introduction

This chapter looks at insolvency risk for the sponsoring companies of the defined benefit schemes in our sample. It first outlines the various credit assessment methodologies available and then concentrates on Dun & Bradstreet's methodology. D&B provide the insolvency probabilities to the Pension Protection Fund for use in calculation of the risk-based levy. The chapter then uses the D&B data to provide a snapshot of insolvency probabilities for our sample as at 31 March 2006. Finally, it looks at trends in insolvency rates as shown by data from the Insolvency Service.

6.3 Credit quality assessment

Default/insolvency assessment methods can be classified into three broad categories:

1. by informal judgement based on company visits and accounting information;
2. by formal quantitative analysis based on market indicators; and
3. by quantitative analysis of accounting information and other disclosures.

Ratings agencies such as Standard & Poor's (S&P), Moody's and Fitch perform an analysis along the lines of the first method. A company typically chooses to become rated and pays the rating agency for this service. An official rating from one of the rating agencies allows the company to access the traded bond markets. The number of companies that rating agencies cover in this way is limited because of this self-selection.

A Merton-based approach such as that used by Moody's KMV fits into the second paradigm. Merton (1974) showed that the probability of a company defaulting can be inferred from the market valuation of the company. A company can be considered to be in default when the market value of its assets falls below the book value of its liabilities. The disadvantage of this approach is that the equity of a company has to be publicly traded to calculate the value of its assets.

Dun & Bradstreet (D&B), who have been retained by the Pension Protection Fund to provide insolvency risk analysis, use the third approach.[5]

6.4 Dun & Bradstreet insolvency assessment methodology

Dun & Bradstreet assign each company a 'failure score' which is designed to predict the likelihood that the company will cease operations without paying all creditors in the next 12 months. The failure score is created using a statistical modelling technique that looks at the D&B databases to determine which data characteristics are common to failing companies and successful companies, then uses this knowledge to build a scoring algorithm. The data used by D&B to populate its model includes descriptive information about the company such as parent company information and years in business, trade payment information such as PAYDEX data,[6] and financial information such as profit margins and cash flow data.[7]

[5] Whereas the rating agencies focus on default risk (the risk that the company will not pay its debt), D&B focuses on insolvency risk (the risk that the company will involuntarily have to close business). The probability of default will usually be higher than the probability of insolvency for any company, as companies can be rescued after a default.

[6] PAYDEX stands for 'Payment Index' and is based on past payment behaviour as reported to D&B.

[7] The following overrides which are normally applied by D&B are removed by the Pension Protection Fund when applying D&B scores:

(a) The 'Negative Net Worth override' rule whereby D&B normally limits the maximum failure score obtainable by any company which has a negative tangible net worth;

(b) The 'Parent at Severe Risk – ZP4 override' rule whereby D&B normally limits the maximum failure score obtainable by a company where it is a subsidiary of another company and that parent company is regarded as being at severe risk of insolvency; and

(c) The rule whereby D&B normally limits the maximum failure score obtainable by any company which files its accounts in a currency other than sterling.

D&B have also provided a mapping of failure scores to probabilities of failure which are then incorporated by the Pension Protection Fund into the calculation of the risk-based levy. The probability of failure is distributed as shown in chart 6.1 below.

Chart 6.1
D&B's insolvency probability from failure scores

Source: Dun & Bradstreet

For multi-employer schemes, the Pension Protection Fund needs to adapt the D&B probabilities to make its own calculations of insolvency risk allowing for the structure of the scheme's employers. For the levy invoice calculation in 2006/7 it calculates a weighted average[8] by the number of scheme members of each employer, compares this with the insolvency probability of the employer with the most members, and uses whichever is the lower.

More information on the D&B insolvency probabilities is given in the notes at the end of this chapter.

[8] A more in-depth description of the process is detailed in The Pension Protection Levy Consultation Document, update October 2005.

6.5 Snapshot of Dun & Bradstreet data

This section looks at whether high insolvency probabilities of sponsoring companies are associated with certain characteristics of their pension schemes using the 31 March 2006 data snapshot. All the calculated insolvency probabilities used in this section are unweighted averages.

Insolvency probability and size

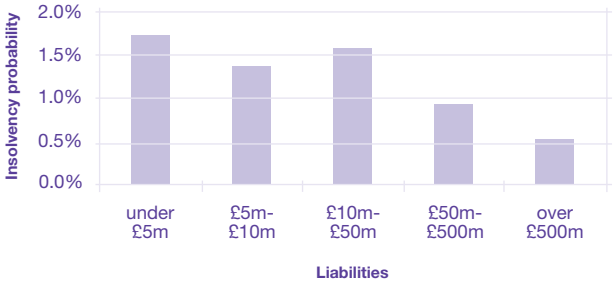
There is a broad tendency for large schemes (by scheme members and liabilities) to be associated with low insolvency probabilities (charts 6.2 and 6.3). Large schemes tend to be associated with large companies, and large companies tend to have lower insolvency probabilities. Insolvency probabilities 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 6.4).

There is also a relationship between funding position and insolvency probability. Chart 6.4 illustrates that for each liability band, the insolvency probability is lower for schemes in surplus than for those in deficit.

Chart 6.2
Insolvency probability by scheme size

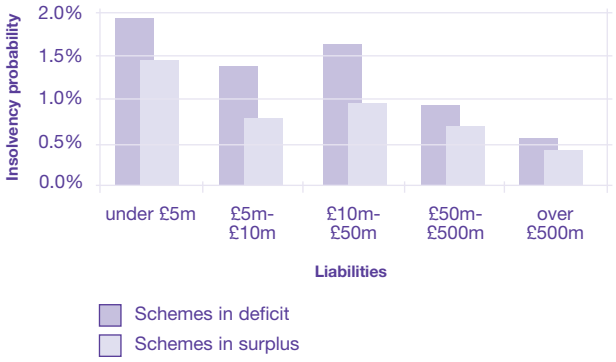
Source: the Pension Protection Fund and the Pensions Regulator

Chart 6.3
Insolvency probability by liability level (all schemes)



Source: the Pension Protection Fund and the Pensions Regulator

Chart 6.4
Insolvency probability by liability level
(schemes in deficit and schemes in surplus)

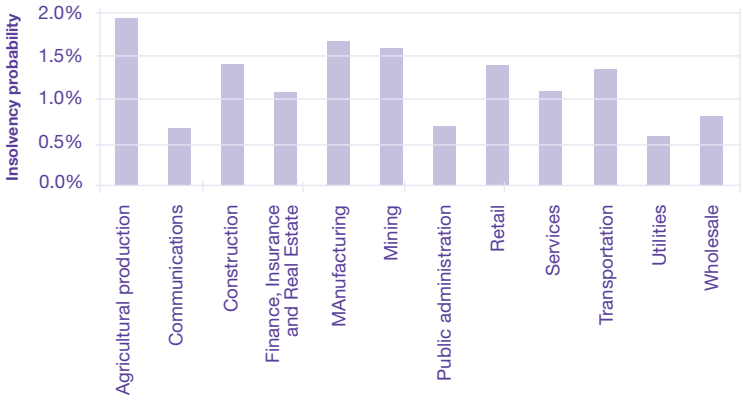


Source: the Pension Protection Fund and the Pensions Regulator

Insolvency probability by industry

The 1972 US Standard Industry Classification (SIC) codes have been used to group the employers by industry. Chart 6.5 below shows that the industries with the highest probability of failure are agriculture, manufacturing, mining, retail trade and transportation.

Chart 6.5
Insolvency probability by industry



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

6.6 Other indicators of company failure

Other agencies also provide credit scores on a commercial basis. The Pensions Regulator makes use of a range of different sources, including D&B, according to circumstances. A default can be thought of as an earlier credit event than an insolvency. Chart 6.6 shows historic default rates for S&P rated companies across the credit rating spectrum. The further into the future, the larger the rate of default for a given credit rating.

Chart 6.6
S&P historic default rates

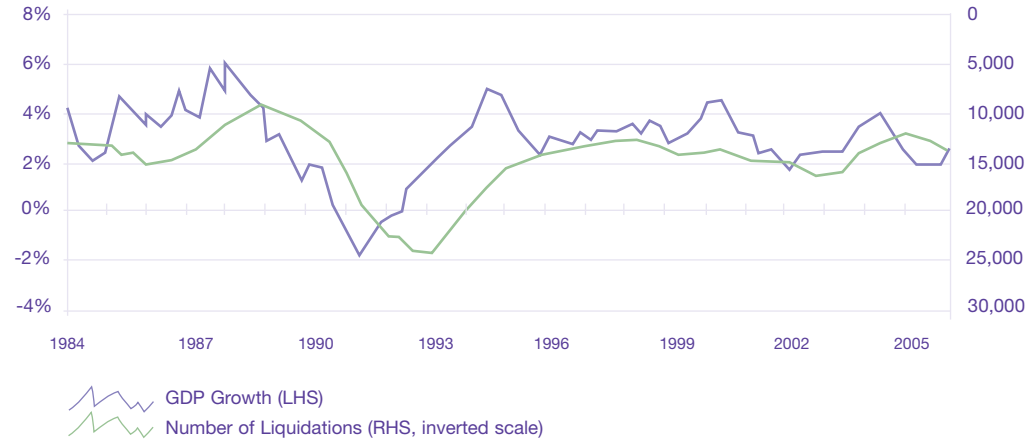
Source: Standard & Poor's CreditPro®7.50

6.7 Economy wide insolvencies

In order to put the current insolvency risk for our database in context, this section looks at the history of insolvencies as indicated by the figures from the Insolvency Service.[9] Although our sample is much smaller than the Insolvency Service database (which covers 2.8m companies) and is more skewed to larger and older companies, data from the Insolvency Service allows us to observe developments over time.

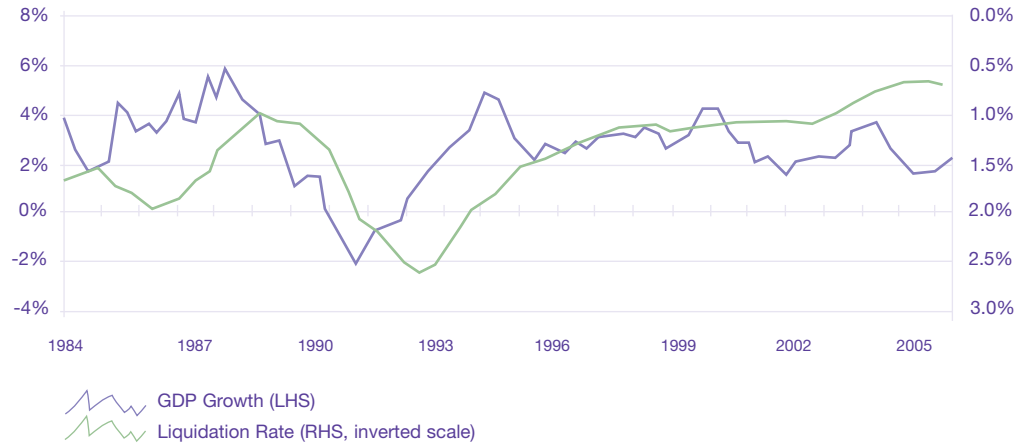
[9] Unfortunately the Insolvency Service does not provide data on the size of companies that have undergone liquidation and so we are unable to analyse a size-weighted liquidation index.

Chart 6.7
Insolvencies and GDP growth[10]



Source: The Insolvency Service, Pension Protection Fund calculations. Based on quarterly data

Chart 6.8
Insolvencies and GDP growth[10]

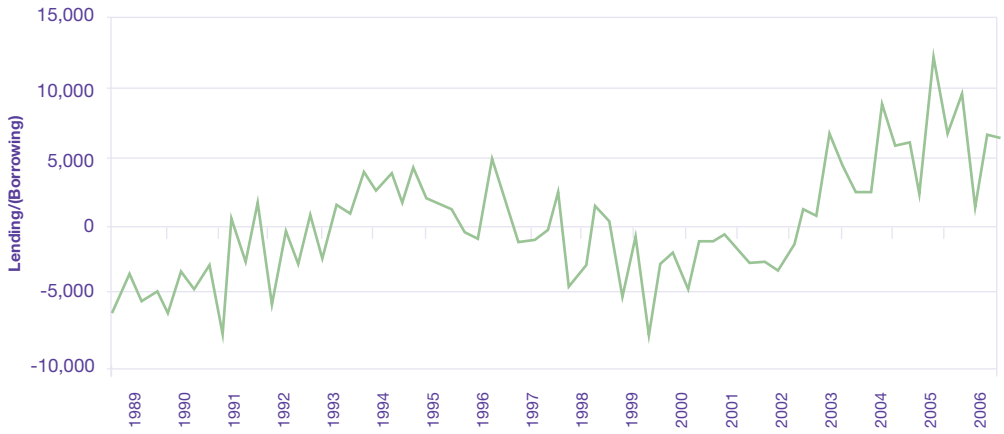


Source: The Insolvency Service, Pension Protection Fund calculations. Based on quarterly data

The rate of corporate insolvencies in Great Britain is at its lowest level for 25 years, according to figures produced by the Insolvency Service. Only 0.7% of active companies went into liquidation in the 12 months ending in Q3 2006. This compares to an average over the past 10 years of 1.0% and a record high of 2.6% in Q4 1992. The low level of liquidations is not entirely surprising given that the economy has experienced such a long period of sustained GDP growth (charts 6.7 and 6.8) while company finances are in good shape as illustrated in charts 6.9 and 6.10 (with non-financial companies in financial surplus and with high levels of profitability).

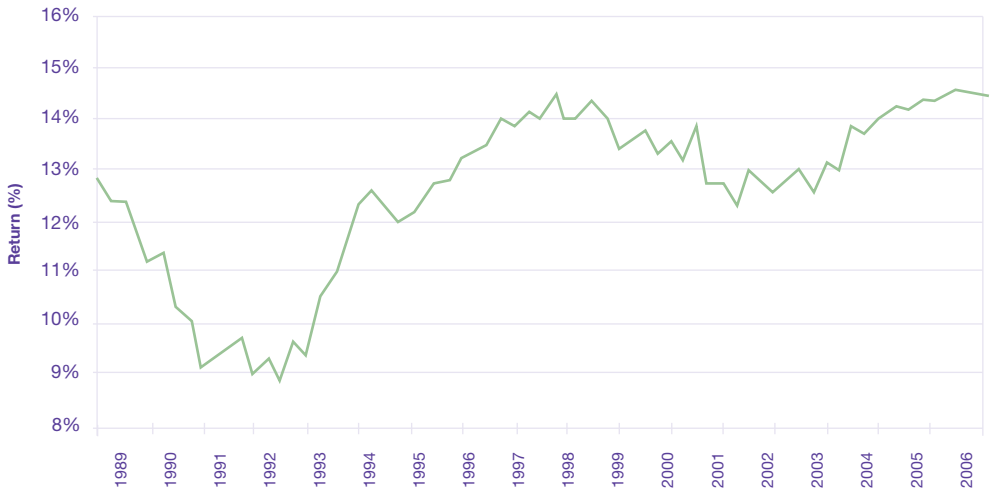
[10] Liquidation data in charts 6.7 and 6.8 includes compulsory liquidations and creditor voluntary liquidations. It does not include companies in administration (which the Pension Protection Fund also considers as insolvent).

Chart 6.9
Non-financial corporations' net borrowing/lending[11]



Source: ONS

Chart 6.10
Non-financial corporations' net rate of return (profit)[12]



Source: ONS

GDP growth seems to be a good leading indicator of insolvencies although the lead period seems to vary (charts 6.7 and 6.8). For example in the late 1980s the peak in GDP growth was followed by a trough in liquidations with approximately a one-year lag. Similarly the trough in the recession in early 1990s was followed by a peak in liquidations with around a two-year lag. The relationship between the insolvency rate and GDP breaks down somewhat in the most recent years, possibly reflecting a structural change as well as data reclassification.

[11] Net of depreciation
[12] Net of depreciation

The Bank of England noted in its Financial Stability Review of December 2005 that the reduction in insolvencies since the 1990s, particularly in the latest two years, had been greater than that implied in their models based on the relationship between companies' debt, profitability and the macroeconomic environment.

Charts 6.7 and 6.8 do indeed support this observation: the rate of liquidations (ratio of liquidations to number of active companies) is far lower than GDP growth would suggest. The reasons that the Bank of England has cited for this apparent improvement in insolvency are:

- An improvement in the management of risk. Institutions have improved their monitoring of loans, enabling them to take early steps to address any weaknesses.
- Financial innovation. Institutions can distribute and diversify risk (including trading of distressed debt), lowering its cost.

Some factors affecting the classification of data include:

- The 2002 Enterprise Act, which introduced additional routes into administration. This Act diverts some companies from insolvency into administration.[13]
- A possible migration of sole traders and partnerships to company status, particularly in professional areas such IT and accountancy. It is possible that such professionals experience a lower frequency of insolvency. Therefore, the increase in transition from non-company status to company status increases the denominator in the ratio without a proportionate increase in the numerator.

[13] The Pension Protection Fund covers companies that have gone into administration as well as liquidation, but charts 6.7 and 6.8 only show involuntary liquidations and creditor voluntary liquidations.

6.8 Further notes on the D&B scores

The D&B score is the pure statistical output from the scoring model. It is available as:

- the D&B raw score: a granular measure of risk used in global scoring systems. The score spectrum ranges from 1,001 to 1,745; and
- the D&B failure score (percentile score): a relative measure of risk, where 1 represents businesses that have the highest probability of failure and 100 the lowest.

The D&B failure score is assigned to the entire UK database so that 1% of all businesses have the same score. This means that the score shows where a business ranks among all scored businesses in the D&B database.

For example, if a business has a score of 85:

- 1% of the entire database has the same level of risk of failure;
- 84% of the database has a higher level of risk of failure (ie these businesses are more likely to fail); and
- 15% has a lower risk of failure.

7 Asset allocation

7.1 Summary

- The scheme returns show that two assets dominate: equities (61%) and gilts and fixed interest (28%).
- The proportion held in gilts and fixed interest assets increases as scheme maturity increases. The proportion of gilts and fixed interest also increases, to a lesser extent, as scheme size and funding level rise.
- ONS data shows that the proportion in UK equities has fallen sharply since the mid-1990s, while there was a sharp increase in the proportion in UK gilts until 2000, and the proportion in corporate bonds increased from 2000 onwards.

7.2 Introduction

This section looks at asset allocation of private sector defined benefit schemes using the data obtained from the 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 recent trends in asset allocation, in particular the decline in the percentage of assets held in equities and the rise in the percentage held in bonds.

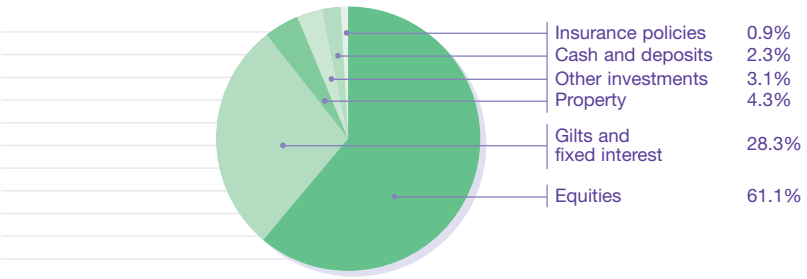
Taking the sample as a whole, by far the largest proportion is in equities (61.1%) followed by gilts and fixed interest (28.3%). The scheme return forms split assets into the six categories shown in table 7.1 below.

Table 7.1
Average asset allocation for all schemes in the sample

Asset class	Proportion of total assets (%)
Equities	61.1
Gilts and fixed interest	28.3
Insurance policies	0.9
Cash and deposits	2.3
Property	4.3
Other investments	3.1

Source: the Pension Protection Fund and the Pensions Regulator

Chart 7.1
Average asset allocation for all schemes

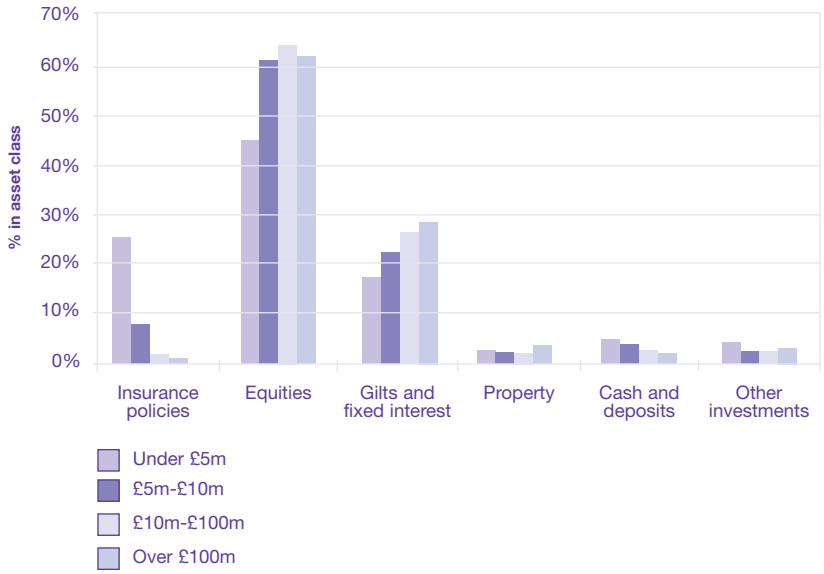


Source: the Pension Protection Fund and the Pensions Regulator

7.3 Scheme size

Chart 7.2 below shows asset allocation by scheme size according to the value of assets. Apart from the smallest schemes, the equity share remains constant across the size groups. There is some tendency for the gilt and fixed income share to rise with scheme size as the use of insurance policies decreases.

Chart 7.2
Average asset allocation of schemes arranged by scheme size according to level of assets



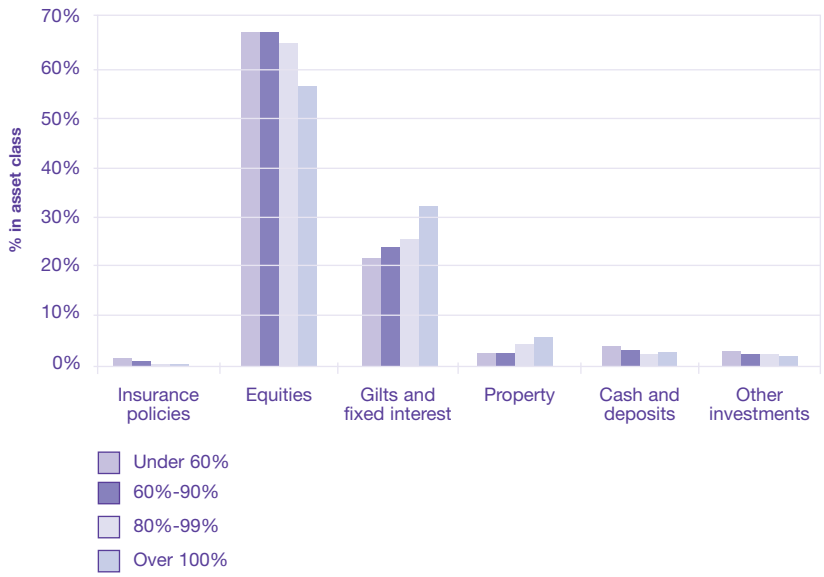
Source: the Pension Protection Fund and the Pensions Regulator

Some schemes in the data are wholly insured schemes. These are defined in regulations, and have no investments other than qualifying insurance policies specified in the regulations. There are 626 of these schemes in the data set and they have been excluded from the analysis in the remainder of this section.

7.4 Funding level

There is a tendency for the proportion of gilts and fixed interest assets to increase with the level of funding, calculated as assets divided by liabilities (see chart 7.3). Also, there is a slight tendency for better funded schemes to have a smaller proportion held in equities.

Chart 7.3
Weighted average asset allocation by funding level

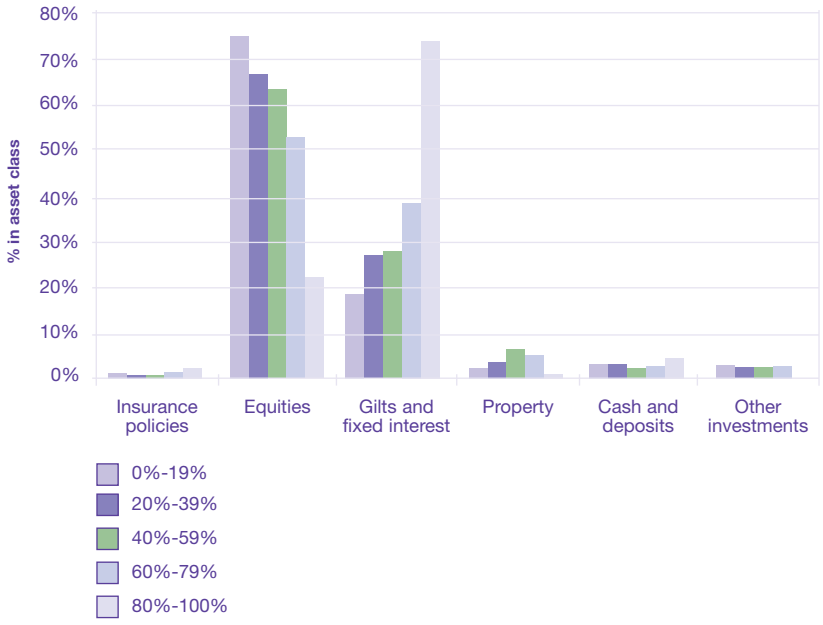


Source: the Pension Protection Fund and the Pensions Regulator

7.5 Scheme maturity

Chart 7.4 illustrates asset allocation according to current pensioner liabilities as a proportion of total liabilities, which has been used as an approximation for scheme maturity. It is expected that as schemes mature, the asset allocation to gilts, fixed interest and cash will increase, reflecting the need to match more closely pension payment profiles. The data supports this expectation, showing a correlation between increased scheme maturity and an increased asset allocation to gilts and fixed interest, and to cash.

Chart 7.4
Weighted average asset allocation of schemes by current pensioner liabilities as a percentage of total liabilities[14]



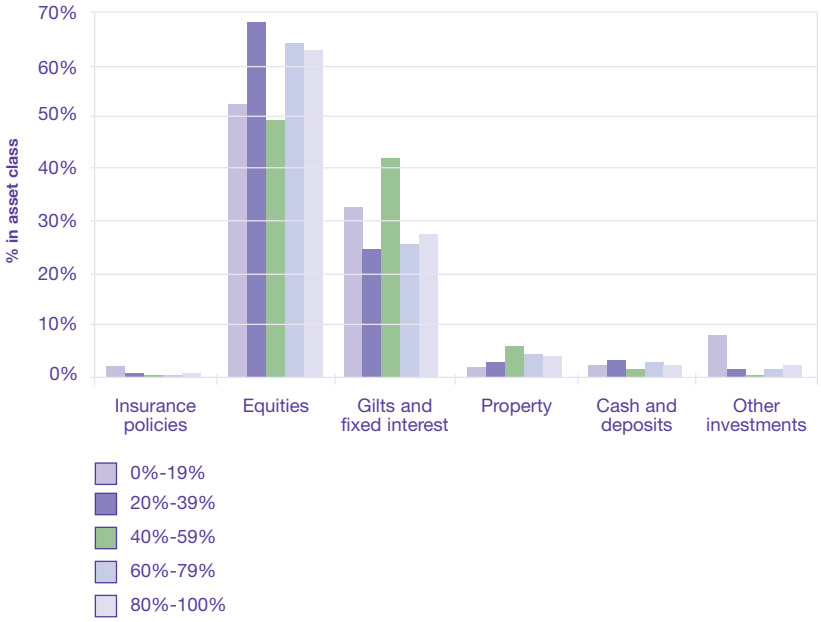
Source: the Pension Protection Fund and the Pensions Regulator

[14] In the most mature group, there is one scheme that makes up 75% of the liabilities. This scheme has 77% in gilts and fixed interest assets. Excluding this scheme reduces the gilts share to 57% and increases the equities share to 30%.

7.6 Insolvency probability

There seems to be no direct correlation between the asset allocation of schemes in the database and their insolvency probabilities using Dun & Bradstreet insolvency scores (chart 7.5).

Chart 7.5
Weighted average asset allocation of schemes arranged by insolvency score[15]



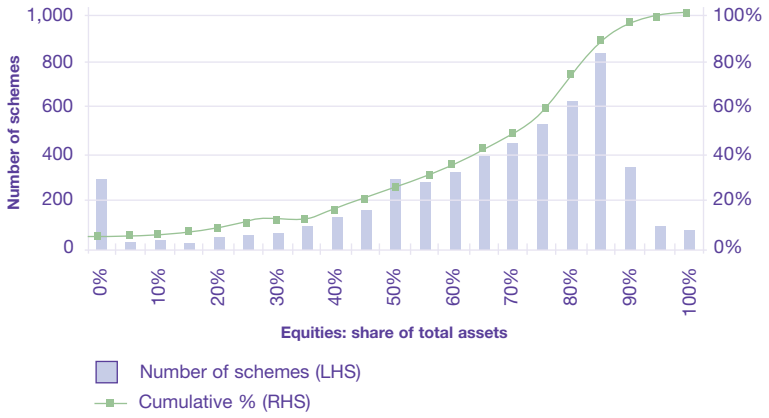
Source: the Pension Protection Fund and the Pensions Regulator

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. Average asset allocation in respect of property, cash and deposits, and other investments is small for the majority of schemes, with an insignificant number holding substantial investments in these assets. Chart 7.6 shows that roughly 6% of schemes do not have any equities in their portfolio at all (299 out of 5,206). A quarter of all schemes have a share of equities that is between 80% and 90%. Over 55% of schemes hold over 65% of their assets in equities.

[15] In the insolvency group 40-59, one scheme makes up half the liabilities of the group. This scheme has 51% invested in gilts and fixed interest assets, which causes the group to have an unusually high share in this asset class.

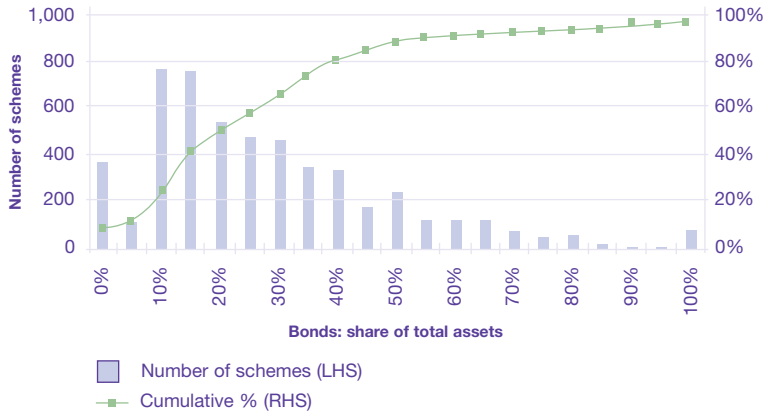
Chart 7.6
Histogram of equities and cumulative percentage



Source: the Pension Protection Fund and the Pensions Regulator

There are 383 (7%) schemes that do not have any funds invested in gilts and fixed interest securities. Also, about a quarter of schemes hold between 10% and 20% in bonds. Less than 10% of schemes hold more than half of their funds in gilts and fixed interest assets.

Chart 7.7
Histogram of gilts & fixed income assets and cumulative percentage



Source: the Pension Protection Fund and the Pensions Regulator

7.8 Recent trends

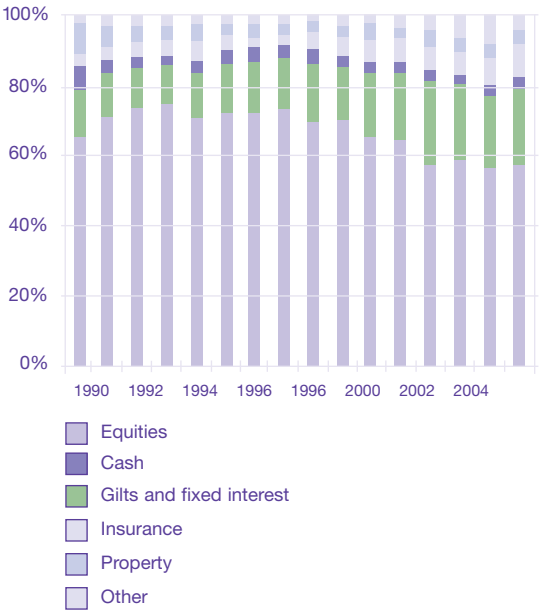
Interpreting trends in asset allocation can be difficult. The percentage taken by each asset class can be affected by flows of funds between asset types, changes in asset prices or a combination of the two. To try to overcome the problem of distinguishing between active and passive asset allocation changes we have looked at the flows into various asset classes as well as the share of total assets that they take, using data from the Office for National Statistics (ONS).[16]

Chart 7.8 shows how asset allocation has changed over time, and indicates that from around 1997 there has been a shift away from equities towards gilts and fixed interest assets. During the mid-1990s the proportion of equities was relatively stable at around 73%, but this had fallen to just 57% by the end of 2005. Gilts and fixed interest assets on the other hand have seen an increase from 15% in 1997 to 21% of total assets in 2005. The shift from the mid-1990s may have reflected increasing scheme maturity to some extent.

Chart 7.9 shows how from the late 1990s the proportion held in 'other' assets has increased, implying that schemes have been diversifying their portfolios over the period. Chart 7.10 compares asset allocation in 1997 and 2005.

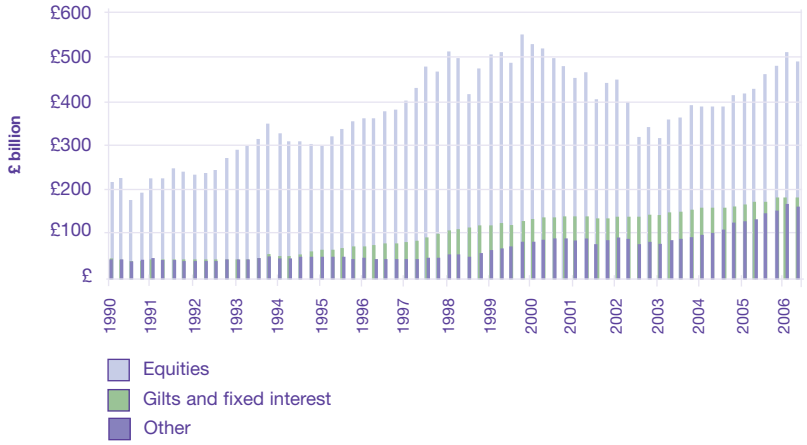
[16] The data from the ONS MQ5 enquiry is based on a sample of 350 pension schemes. 100 of these are local authorities and the other 250 contain public and private corporations (the Pension Protection Fund database excludes local authorities and public corporations). The sample has total assets of £800bn, which is nearly as big as the Pension Protection Fund 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. The key advantage of this data is that it gives investment flows as well as the levels of asset holdings.

Chart 7.8
Percentage of total assets allocated to each asset class



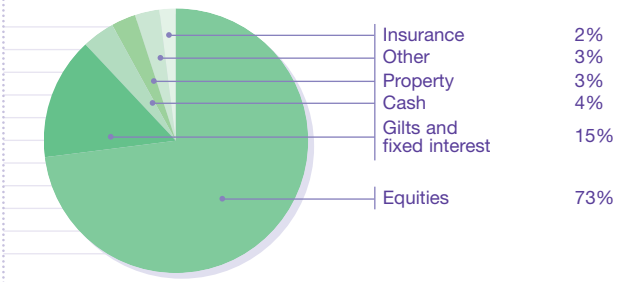
Source: ONS

Chart 7.9
Total value of assets allocated to each asset per quarter

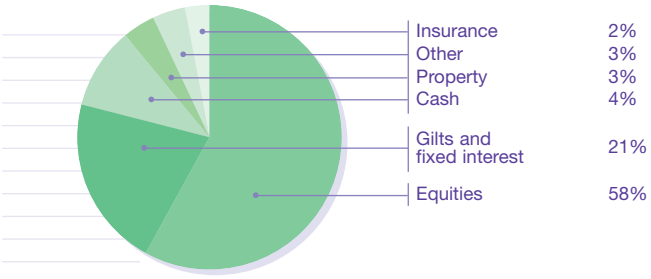


Source: ONS
Note: there is no quarterly data for cash, so 'Other' category includes property, insurance and other investments only.

Chart 7.10
Asset allocation in 1997 compared with 2005:
percentage of total assets allocated to each asset class[17]



Asset allocation in 1997
Source: ONS

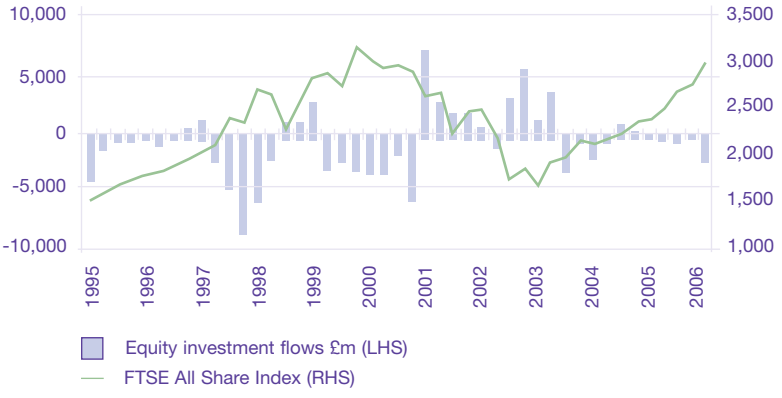


Asset allocation in 2005
Source: ONS

Pension fund net investment in equities since 1995 can be broken down into a number of phases, as shown in chart 7.11. Until 1997, net investment flows were small, then between 1997 and the end of 2000 there were large outflows when the stock market was rising. Between 2001 and mid-2003 there were significant inflows into equities, when stock markets were falling, and after this period there were modest net outflows.

Looking at the period 2001 to mid-2003 more closely, pension fund holdings of equities fell by roughly 20% despite the continued net investments (around 6% of the 2001 value of equities) throughout the period. The falling proportion of equities during this period was largely because of the poor equity performance, with the FTSE All Share index falling by roughly 30%. In fact, pension fund net outflows of £17,678m over the whole period equates to 4.8% of the 1995 value of equities. Those net investments explain about a quarter of the fall in the share of equities in total assets. There was no attempt by the schemes to return their equity share to the mid-1990s level.

Chart 7.11
Net investments per quarter in equities and the FTSE All Share index

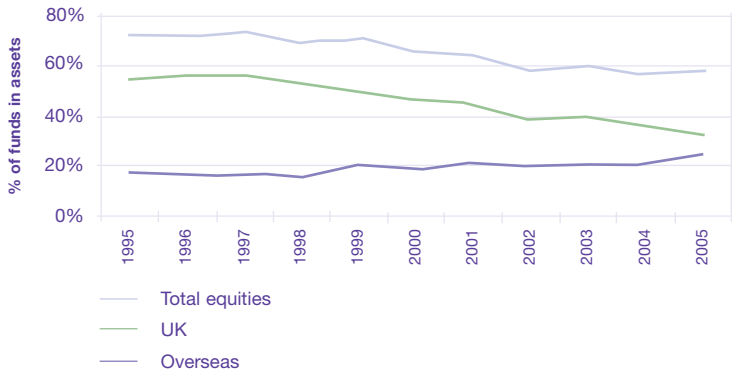


Source: ONS

[17] 'Insurance' here relates to insurance managed funds, not insurance policies. The asset allocation approximated from ONS data on insurance company investments is 60% equities, 16% bonds, 12% cash, 6% property and 6% other investments.

Chart 7.12 indicates that, within equities, there has been a big shift in asset allocation away from UK and towards overseas equities. In 2005, just one third of all pension scheme funds were held in UK equities compared with 55% in 1995. Meanwhile, the overseas equity share rose from 16% to 24%. Net investments have been negative for UK equities and positive for overseas equities over the period, implying active diversification of the equity portfolio.

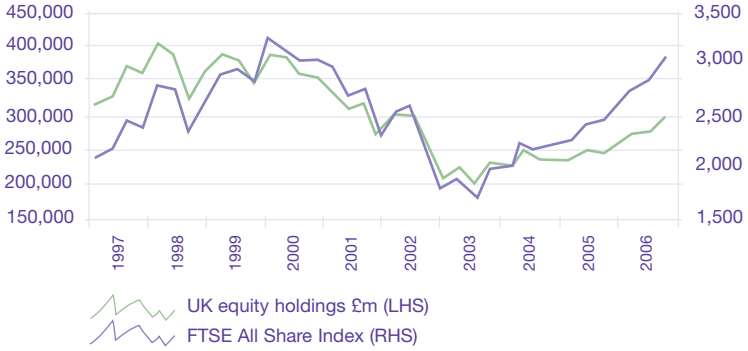
Chart 7.12
Percentage of UK and overseas equities as a proportion of total assets



Source: ONS

Chart 7.13 shows the pension fund holdings of UK equities between 1997 and 2006 against the FTSE All Share Index. Over the period, the value of equity holdings fell more than the FTSE All Share, representing the flows away from UK equities. Regression analysis indicates that about 60% of the variation in pension fund equity holdings can be explained by changes in the FTSE All Share Index.

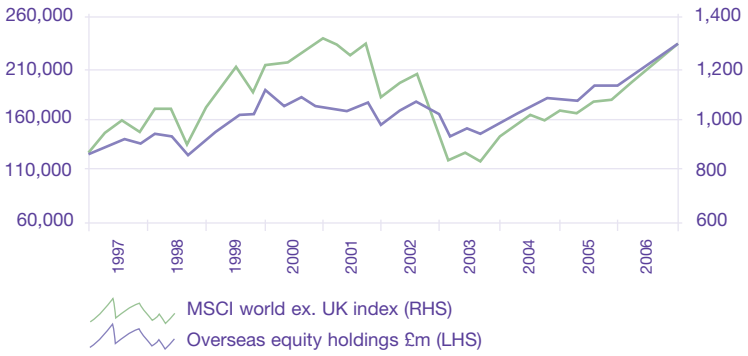
Chart 7.13
Value of pension scheme holdings in UK equities compared to FTSE All Share Index



Source: ONS

The impact that market movements had on the size of assets held in overseas equities was equally significant but offset by investment flows, as seen in chart 7.14. In particular, from 2001 to mid-2003 the MSCI World (excluding UK) Index fell by over 30% whereas the total value held in overseas equities was barely affected. During this period there were consistently high positive net investments which totalled 25% of the value held in overseas equities.

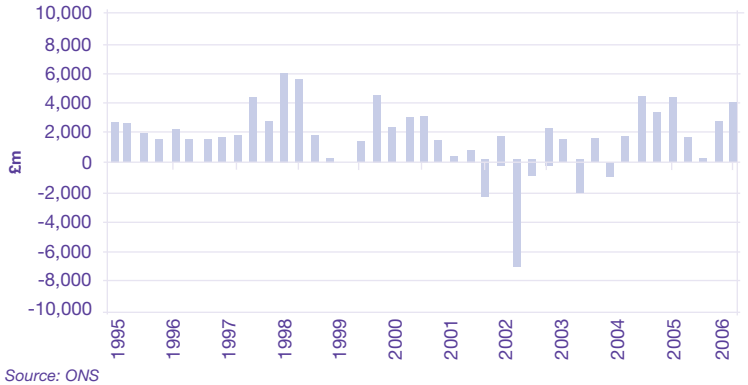
Chart 7.14
Value of pension schemes' overseas equities compared to MSCI World (excluding UK) Index



Source: ONS

As there were flows, albeit small, away from equities as a whole over the period, the new pension contributions must have been going somewhere else. Indeed, there was considerable investment into gilts and fixed interest assets over the period as a whole, nearly 115% of the 1995 value, which can partly explain the increase in the size of bonds as an asset type. The other source of the increase in the gilt and fixed interest proportion came from rising bond markets and falling yields between 1995 and 1999. The double impact of increased investment and rising bond markets caused the proportion of total assets held in gilts and fixed interest assets to increase substantially in the late 1990s.

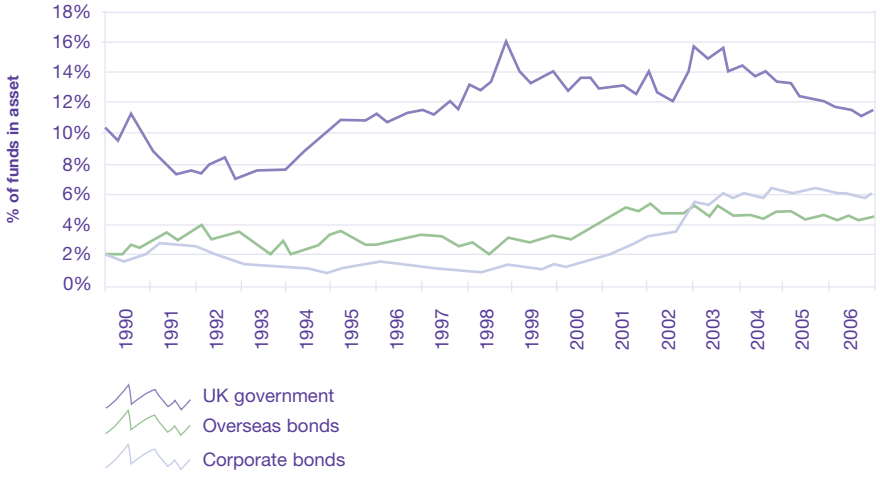
Chart 7.15
Quarterly net investments into gilts and fixed interest assets



Source: ONS

Chart 7.16 splits gilts and fixed interest assets into their subclasses. The increase in the bonds proportion reflected a rising gilt proportion in the mid to late 1990s. The gilts proportion was broadly flat between 1998 and 2003 but then fell back so that by 2006 the proportion was back to the 1996 level. At the beginning of the century the proportion in overseas bonds rose. Also from 2000 to 2003 the proportion of UK corporate bonds increased.

Chart 7.16
Percentage of UK government, corporate and overseas bonds as a proportion of total assets



Source: ONS

The proportion of total assets held in the 'other' assets category rose from 14% in 1995 to 21% in 2006. 'Other' assets cover insurance, cash and deposits, property and other investments. The main component that has caused this shift is the increase in schemes' holdings of insurance managed funds, which may include significant equity holdings. The proportion held in property fell over the period 1995 to 2005 despite having relatively high returns (13% annualised returns over the past ten years).

In recent years there has been a trend for pension schemes to use liability driven investment strategies. Schemes can either use long-dated bonds to try to match the duration of their assets to their liabilities, which are assumed to have bond-like characteristics, or can continue investing in assets with high returns whilst hedging unintended risks by the use of swaps.

8

Short term risk concentration

8.1 Summary

- Insolvency and underfunding risk can be combined for each underfunded scheme to give a snapshot of relative risk as at 31 March 2006. This is done by multiplying each scheme's deficit by the probability of the sponsoring company becoming insolvent over the next 12 months.
- Looking at combined risk in this way shows that most of the immediate risk to scheme members and to the Pension Protection Fund arises from schemes with weak sponsors. For instance, some 41% arises from fewer than 2% of schemes, whose sponsors we have categorised as having the highest likelihood of insolvency with an average insolvency probability of 35%.
- Around 33% of combined risk is in the groups with the lowest probability of insolvency, however, because of the large number of such schemes (around 76% of the total) and the extent of underfunding.

8.2 Introduction

Two aspects of risk - insolvency and underfunding - contribute to the overall risk that scheme members will lose some of their benefits and that calls will be made on the Pension Protection Fund. They are used in calculating the distribution of the Pension Protection Fund's risk-based levy for eligible DB schemes and also inform the way that the Pensions Regulator assesses risk in individual schemes so as to target its regulatory response. However, to determine the aggregate levy, the Pension Protection Fund uses a Long Term Risk Model (LTRM). This ensures that the Pension Protection Fund adjusts for short term volatility and uncertainty by taking a longer term time horizon. The LTRM generates a probability distribution of claims on the Pension Protection Fund on different longer term horizons from 5 to 20 years, taking into account a very large number of possible economic and financial market outcomes.

Chapter 4 considered the funding position of the schemes in our sample, while Chapter 6 analysed the insolvency risk faced by sponsoring companies. In this chapter, we bring together the two aspects of risk into a risk index. 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), as follows:

Risk index for underfunded scheme A = deficit in scheme A (in £s) x insolvency probability of sponsoring company

This is done only for the 83% of schemes in our database which are underfunded.

8.3 Insolvency and underfunding groups

The Pension Protection Fund uses 100 insolvency probability bands for the sponsoring company 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 funding levels have been grouped together.

- The insolvency probabilities have been grouped into 10 categories (see table 8.1) rather than 100. Insolvency Group 1 covers the sponsoring companies with the lowest probabilities of insolvency (less than 0.2%) while Group 10 covers those with the highest probabilities (greater than 13%).
- 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 8.2. Those with the best funding position (funding ratio 75-100%) are in Group 1 and the worst (funding ratio less than 50%) in Group 3. Schemes with a funding ratio in excess of 100% have been excluded from our analysis of risk exposure.

The lowest risk schemes are then those in funding group 1 whose sponsor is in insolvency group 1, while the highest risk are in funding group 3 and whose sponsor is in insolvency group 10.

Table 8.1
Insolvency groups

Insolvency group	Assumed probabilities of insolvency included in the group
1	Less than 0.2010%
2	0.2010% to 0.9830%
3	0.9830% to 1.5182%
4	1.5182% to 1.9967%
5	1.9967% to 2.8732%
6	2.8732% to 4.0363%
7	4.0363% to 5.8221%
8	5.8221% to 7.7493%
9	7.7493% to 13.0293%
10	More than 13.0293%

Source: the Pension Protection Fund and the Pensions Regulator

Table 8.2
Underfunding groups

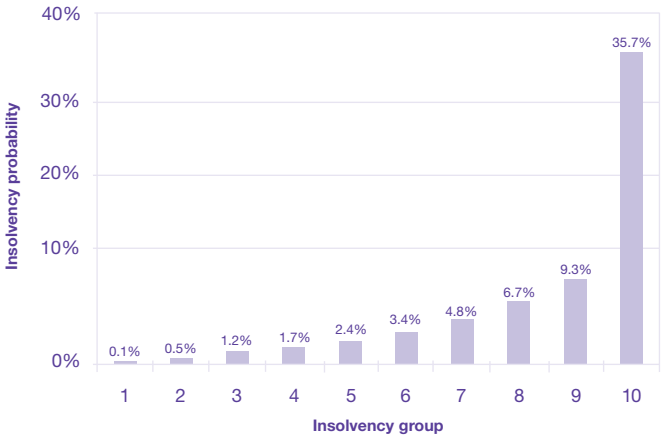
Underfunding group	Ratio of assets to liabilities
1	75%-100%
2	50% up to 75%
3	Less than 50%

Source: the Pension Protection Fund and the Pensions Regulator

8.4 Insolvency risks of schemes in the sample[18]

Looking at our overall sample, there is a relatively high probability (35.7%) that companies falling within insolvency Group 10 will become insolvent within 12 months, while the average probability of insolvency in the other nine groups is under 10% (see chart 8.1). As the maximum probability of insolvency within Group 10 is 37%, the average insolvency of 35.7% means almost all are at the maximum. By contrast, the average insolvency probability in Group 1, the lowest insolvency risk group, is 0.1%. The average insolvency ratio on an unweighted basis for the sample as a whole is 1.2%, and 0.7% on a weighted basis.

Chart 8.1
Average implied insolvency probability by insolvency group

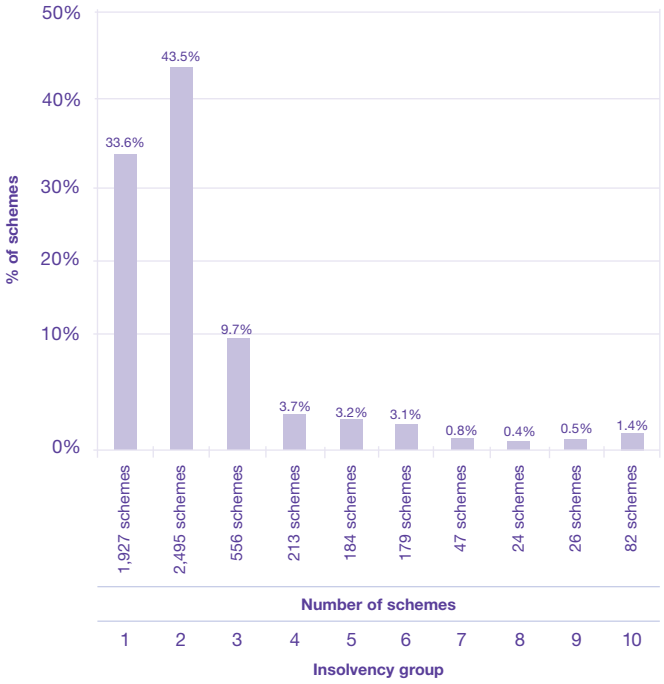


Source: the Pension Protection Fund and the Pensions Regulator

Some 77% of the total number of schemes in our sample have sponsors in insolvency Groups 1 and 2, while 91% have sponsors in the four lowest risk groups, that is with a risk of insolvency of under 2% (see chart 8.2).

[18] It should be noted that the sample in this chapter is a little lower than that in chapters 1, 2, 3, 4 and 7 because of the fact that 39 schemes were in assessment as of 31 March 2006.

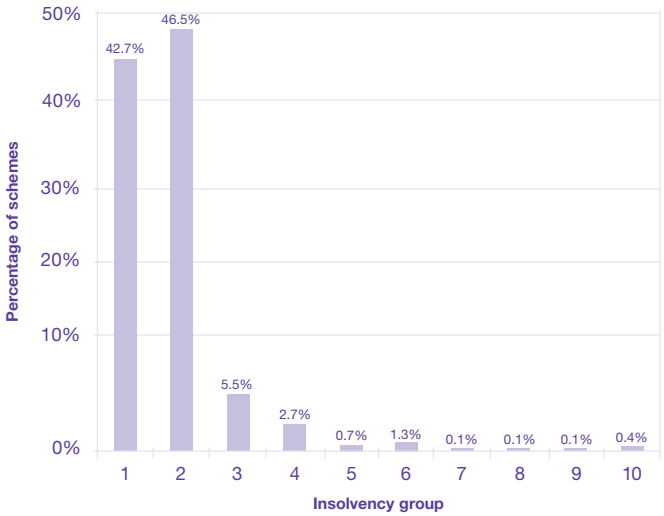
Chart 8.2
Percentage of schemes by insolvency group



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 8.3 shows, 89% of s179 liabilities are in Groups 1 and 2, and 97% of the liabilities fall within the lowest four risk groups (those with a risk of insolvency of under 2%).

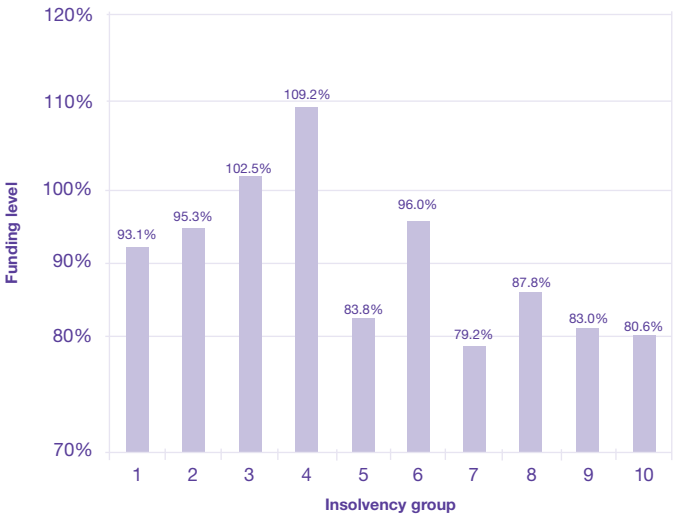
Chart 8.3
Percentage of total scheme s179 liabilities by insolvency group



Source: the Pension Protection Fund and the Pensions Regulator

Perhaps unsurprisingly, the funding position, measured by the ratio of assets to liabilities, of schemes in the worst insolvency groups is weaker than in the higher groups (chart 8.4). Interestingly, the best funded schemes, on average, are to be found in insolvency Groups 3 and 4 which are on average in surplus. This may suggest that trustees of schemes with a weaker covenant have already taken steps to improve funding where the sponsor can afford it, but that improvements have proved challenging for the schemes with the weakest employers. The schemes with sponsors in Groups 1 and 2 have a worse funding position than those with sponsors in Groups 3 and 4, perhaps reflecting the fact that trustees for the former feel under little pressure to reduce deficits given the strength of the sponsors.

Chart 8.4
Funding position on s179 basis by insolvency group



Source: the Pension Protection Fund and the Pensions Regulator

8.5 Risk concentration by numbers of schemes and membership

The following tables break down risk using the ten insolvency groups and three funding groups (on a s179 basis). An overview of all schemes (table 8.3) shows that schemes are concentrated in the lower risk areas, with only 110 schemes in the high insolvency risk groups (groups 7-10) and funding below 75%.

Table 8.3
Funding by insolvency matrix (schemes)

Count of Schemes	Funding group				
Insolvency risk group	**Up to 50%**	**50% up to 75%**	**75% to 100%**	**Above 100%**	**Grand total**
1 and 2	320	1,720	1,600	785	4,425
3 and 4	80	305	275	115	675
5 and 6	30	135	145	55	365
7 and 8	10	30	30	15	85
9 and 10	20	50	35	10	115
Grand total	**460**	**2,240**	**2,085**	**980**	

Source: the Pension Protection Fund and the Pensions Regulator
Note: figures are rounded up to the nearest 5

Membership levels cluster in the same categories - the higher risk quadrant with 110 schemes mentioned above has only 0.2% of the total number of members:

Table 8.4
s179 funding by insolvency matrix (membership in thousands)

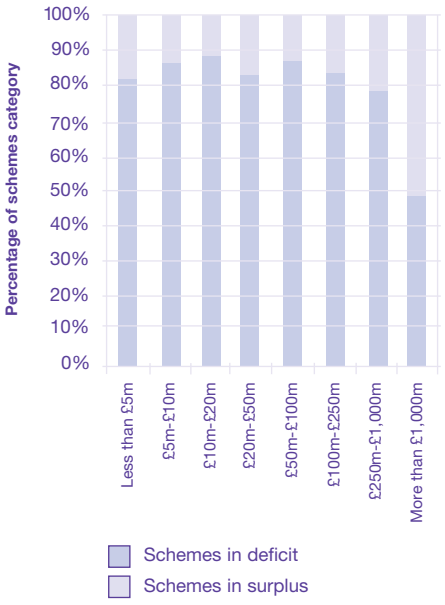
Count of Schemes	Funding group				
Insolvency risk group	**Up to 50%**	**50% up to 75%**	**75% to 100%**	**Above 100%**	**Grand total**
1 and 2	118.6	2,059.2	4,798.8	4,167.75	11,144.3
3 and 4	7.8	195.0	376.8	561.1	1,140.7
5 and 6	3.4	44.2	76.7	103.1	227.4
7 and 8	1.3	6.0	5.4	4.3	17.0
9 and 10	3.2	13.2	58.7	2.9	77.9
Grand total	**134.2**	**2,317.6**	**5,316.4**	**4,839.1**	**12,607.2**

Source: the Pension Protection Fund and the Pensions Regulator

8.6 Schemes in deficit

The focus in the remainder of this chapter will be on the schemes in deficit, since they represent the main risks to scheme members and to the Pension Protection Fund. In addition we have removed 39 schemes which were in the Pension Protection Fund's assessment period as at 31 March on the grounds that the risks associated with these were already taken into account in the Pension Protection Fund's Annual Accounts and are of limited interest to the Pensions Regulator.

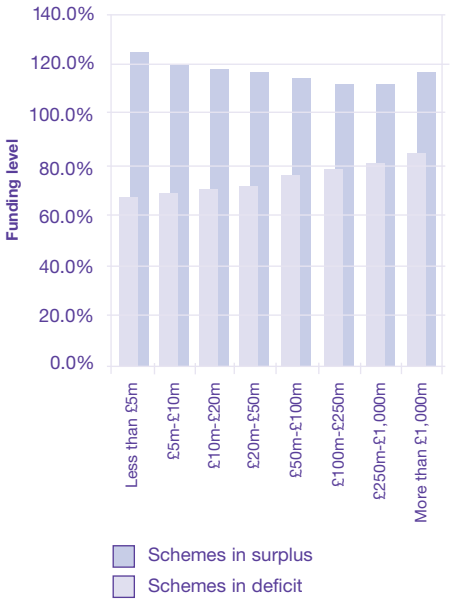
Chart 8.5
Percentage of schemes in surplus and deficit on s179 basis by asset size



The total deficit on a s179 basis for underfunded schemes was £76bn as at 31 March 2006 while the overall ratio of assets to liabilities was 80.6%. The ratio of schemes in deficit to the number in each size category declines with size (chart 8.5) while the ratio of assets to liabilities rises (chart 8.6). Deficits in the largest size category represent 34% of the total deficit (chart 8.7).

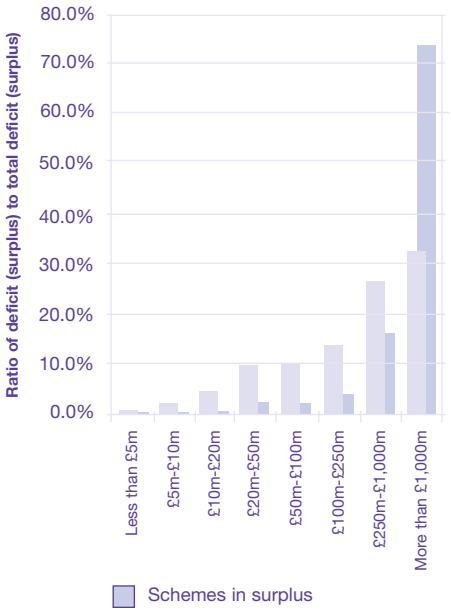
Source for charts 8.5, 8.6 and 8.7:
the Pension Protection Fund and the Pensions Regulator

Chart 8.6
s179 funding position by asset group



In our sample, there are some 975 schemes in surplus on a s179 basis, 17% of the total. The total s179 surplus for these schemes is £42.6bn with the ratio of assets to liabilities of 116%. 75% of surpluses are in the largest size category - over £1bn (chart 8.7).

Chart 8.7
Share of surplus and deficit by asset group



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 £546m for the sample, excluding schemes in assessment, as at 31 March 2006 (table 8.5). In this analysis we have only focused on those schemes in deficit because the Pension Protection Fund's risk exposure is not reduced by pension fund surpluses; its risk exposure is asymmetric.

Table 8.5 shows the combined risk figure for each underfunding group and insolvency group. For example, the deficit x insolvency probability for those schemes in funding Group 3 and with a sponsor in insolvency Group 10 is £31m.

Table 8.5
Combined risk by insolvency and underfunding group

Deficit x insolvency probability (£m)	Underfunding group			
Insolvency group	**1 75%-100%**	**2 50% up to 75%**	**3 Less than 50%**	**Grand total**
1	19.0	15.3	1.5	35.8
2	48.8	86.9	9.0	144.6
3	18.7	34.3	2.5	55.5
4	7.3	8.8	0.7	16.8
5	7.1	10.3	1.1	18.5
6	14.3	12.2	2.4	28.9
7	1.3	3.9	0.5	5.7
8	1.7	3.2	0.7	5.6
9	3.5	3.5	1.8	8.9
10	117.6	177.1	31.4	226.2
Grand total	**239.3**	**255.6**	**51.5**	**546.4**

Source: the Pension Protection Fund and the Pensions Regulator

Table 8.6 shows the combined risk for each underfunding and insolvency group as a percentage of the total, whilst chart 8.8 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.

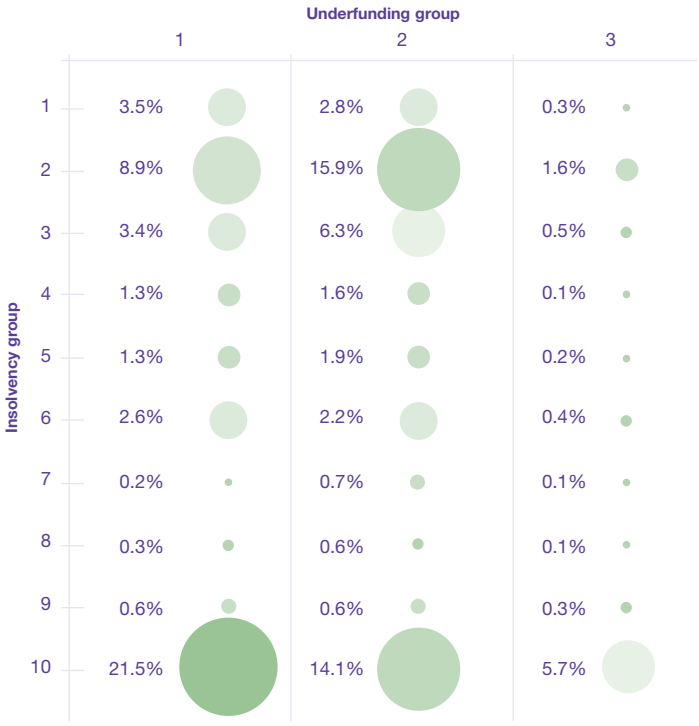
Table 8.6
Deficit v insolvency probability as percentage of total

Sum of deficit x insolvency probability (£m)	Underfunding group			
Insolvency group	**1 75%-100%**	**2 50% up to 75%**	**3 Less than 50%**	**Grand total**
1	3.5%	2.8%	0.3%	6.6%
2	8.9%	15.9%	1.6%	26.5%
3	3.4%	6.3%	0.5%	10.1%
4	1.3%	1.6%	0.1%	3.1%
5	1.3%	1.9%	0.2%	3.4%
6	2.6%	2.2%	0.4%	5.3%
7	0.2%	0.7%	0.1%	1.1%
8	0.3%	0.6%	0.1%	1.0%
9	0.6%	0.6%	0.3%	1.6%
10	21.5%	14.1%	5.7%	41.4%
Grand total	**43.8%**	**46.8%**	**9.4%**	**100.0%**

Source: the Pension Protection Fund and the Pensions Regulator

*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 x insolvency probability for funding Group 3 and insolvency probability Group 10 referred to above represents 5.7% (31.4/546.4*100) of the overall funding x insolvency probability for all schemes.*

Chart 8.8
s179 deficits x insolvency probability as a percentage of total



Source: the Pension Protection Fund and the Pensions Regulator

There are three points which stand out from chart 8.8 and tables 8.5 and 8.6:

- A large proportion of combined risk is concentrated in the highest insolvency Group 10, the group with an average probability of failure of 36%. Indeed, over 40% of the total of deficit x insolvency probability 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 1.4% of schemes are in this insolvency group so the overall risk reflects the very high average risk for each scheme. The average combined risk per scheme in insolvency Group 10 is £3m, some nine times greater than the average in the next group, Group 9 (see table 8.7).
- However, around 33% of combined risk is in the best two insolvency groups given the large number of schemes in the group (around 76% of the total) and the extent of underfunding.
- It can be seen from table 8.6 that while the more underfunded schemes (those with less than 75% funding levels) represent around 56% of the total risk, the remaining 43% arises from relatively better funded schemes.

Table 8.7
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%	82.5%	35.8	1,585	0.02
2	0.4%	79.1%	144.6	2,052	0.07
3	1.2%	77.5%	55.5	473	0.12
4	1.7%	82.3%	16.8	181	0.09
5	2.3%	78.3%	18.5	160	0.12
6	3.5%	76.7%	28.9	148	0.20
7	4.8%	72.8%	5.7	38	0.15
8	6,8%	74.9%	5.6	21	0.27
9	9.0%	82.7%	8.9	25	0.35
10	37.1%	77.8%	226.2	75	3.02
Totals			**546.4**	**4,758**	**0.11**

Source: the Pension Protection Fund and the Pensions Regulator

Short term risk concentration by industry

It is important 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 the manufacturing sector's share of total economic activity.

Chart 8.9
Combined risk by industry

Source: the Pension Protection Fund and the Pensions Regulator

Chart 8.9 (which excludes schemes in surplus) illustrates that the largest risk exposure for the Pension Protection Fund lies with schemes whose sponsors are in the manufacturing and financial sectors. Given the details on funding positions and insolvency probabilities by industry (in Chapters 4 and 6), the position of the manufacturing sector is not surprising.

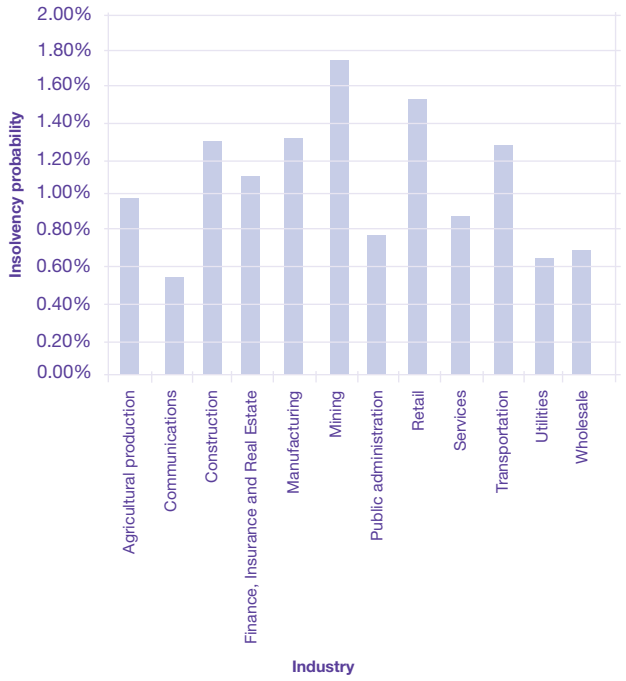
The high combined risk of the financial sector, which may seem surprising at first, can be explained by the relatively high deficit sizes for schemes in deficit (chart 8.10) and moderately high insolvency probabilities (chart 8.11).[19] Although there are several sectors with higher average deficits, these sectors are generally smaller.

[19] Charts used in Chapters 4 and 6 showed similar data and looked at schemes both in surplus and in deficit.

Chart 8.10
Average s179 deficits by industry[20] (for schemes in deficit)[21]

Source: the Pension Protection Fund and the Pensions Regulator

Chart 8.11
Average insolvency probability by industry (for schemes in deficit)



Source: the Pension Protection Fund and the Pensions Regulator

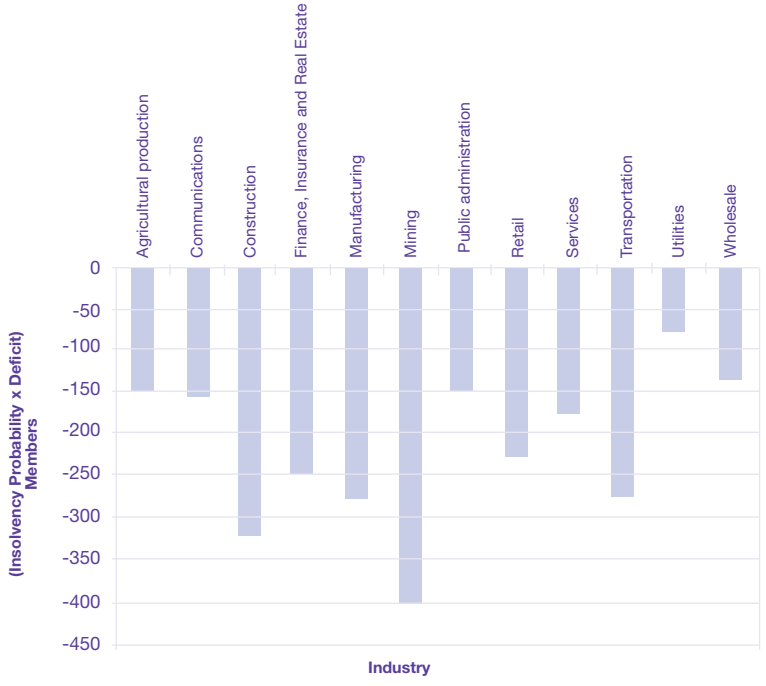
[20] The number of schemes is smaller because not all schemes can be classified by industry.
[21] Public administration includes foreign embassies, port authorities and other non-domestic pseudo-governmental organisations.

Chart 8.12
Average combined risk per scheme by industry

Source: the Pension Protection Fund and the Pensions Regulator

The average combined risk per scheme for the financial sector is fairly large, reflecting the size of schemes (measured by number of members) in this sector (chart 8.12). However, the combined risk per member remains smaller in the financial sector than the manufacturing sector given the bigger schemes (in terms of membership) in the financial sector, as shown in chart 8.13.

Chart 8.13
Average combined risk per member by industry



Source: the Pension Protection Fund and the Pensions Regulator

Glossary

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

Administration
See *Company: trading status*.

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

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

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

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

Company: business types
- Limited liability partnerships
  These are an alternative corporate business vehicle that gives the benefits of limited liability but allows its members the flexibility of organising their internal structure as a traditional partnership.
- Partnership
  The relationship that exists between individuals who run a business together with a view to making a profit. The rights of each partner are governed by a partnership agreement or the Partnership Act 1980.
- Private company
  A company registered under the Companies Act 1985 that is not a public limited company. A private company may be registered as a limited or unlimited liability company. It must have at least one member and at least one director. There is no minimum share capital requirement.

- Public limited company
  A company registered under the Companies Act 1985. It must have at least two members and two directors and a share capital that complies with the authorised minimum amounts. It can offer its shares to the public and may be among the public companies that trade on the Stock Exchange.
- Registered charity
  An institution (corporate or not) which is established for exclusively charitable purposes and which is registered with the Charity Commission.
- Sole trader
  An individual who carries on a business on his or her own account. The individual is fully liable for any losses of the business and pays income tax on any taxable profits of the business.

Company: trading status

- Active/currently trading
  The company is continuing to trade.
- Administration
  One of the main corporate insolvency rescue procedures. It can be a precursor to a company voluntary arrangement under which the company is restructured and passed back to its directors. In an administration, the insolvency practitioner, as officer of the court, takes over powers of management of the business (but is able to delegate these back to management) with the objective of rescuing the company or (if that is not possible, or if the result would be better for creditors) rescuing the business as a going concern and providing protection from actions by creditors while doing so. A partnership can also be subject to administration as a prelude to a partnership voluntary arrangement.
- Dissolved
  The company has ceased trading. All assets of the company have been disposed of and/or it has been taken off the register at Companies House.
- Dormant
  The company is not currently trading but remains a corporate entity and/or remains on the register at Companies House.

- In liquidation
  Either a creditor or the company can apply to the courts to put the company into liquidation. It is the process which eventually brings a company's existence to an end after distributing its assets to creditors/shareholders.
- Liquidated
  Following the liquidation process, the company has ceased trading. All assets of the company have been disposed of and/or it has been taken off the register at Companies House.
- Receivership
  (Also known as administrative receivership or Law of Property Act (LPA) 1925 receivership.) Non-court procedure whereby an insolvency practitioner takes control of the whole of a company's assets under the terms of a charge or mortgage.

Date of commencement of winding up

The date when the wind-up of the scheme begins is usually determined by the scheme rules. Occasionally overriding legislation will determine the date.

Default risk

The risk that the borrower will be unable to satisfy the terms of its borrowing obligations with respect to the timely payment of interest and repayment of the amount borrowed.

Deferred member

In relation to an occupational pension scheme, a person (other than an active or pensioner member) who has accrued rights under the scheme.

Deficit reduction contribution

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

Defined benefit

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

Defined contribution

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

Dun & Bradstreet (D&B)

A provider of insolvency scores.

FRS17

In November 2000, the UK Accounting Standards Board released a new financial reporting standard, numbered 17 ('FRS17'). This sets out the accounting treatment for retirement benefits such as pensions and medical care during retirement. It replaces SSAP 24 ('Accounting for pension costs') and UITF Abstract 6 ('Accounting for post-retirement benefits other than pensions').

Full buy-out

The cost of insuring a pension scheme in the private market. The discount rate applied to liabilities would be more prudent in general than the discount rate applied to *section 179* and *MFR* valuations. The benefit assumed in private insurance is usually non-capped and thus could be greater than Pension Protection Fund coverage.

GAD

Government Actuary's Department. This department assisted in formulating and calculating the *MFR roll-forward*.

Gilt yield

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

Hybrid scheme or partial defined benefit scheme

A scheme that can provide *defined benefits* and *defined contribution* benefits. A scheme providing benefits on a defined contribution basis but that is or was contracted out of the state scheme on either a GMP or Reference Scheme test basis is a common example of a hybrid scheme.

IAS19

An international accounting standard equivalent of *FRS17*.

Insolvency events

These are the insolvency triggers set out in the Pension Protection Fund legislation.

Insolvency risk

The risk that a borrower will have to close business due to its inability to service either the principal or interest of its debt. This is a more extreme event than a default. See also *Insolvency events*.

Insurance company

Insurance companies provide a range of services to pension schemes, including:

- asset investment;
- asset management;
- investment advice and expertise;
- custodian facilities; and
- scheme administration services.

Insurance managed funds

A unitised fund invested in multiple investment categories managed by an insurance company.

Insurance policy

Investment class: an annuity or a deposit administration contract purchased from an insurance company.

LTRM

The Pension Protection Fund's *Long Term Risk Model*, which is based on stochastic simulations of economic scenarios and their respective impacts on assets and liabilities of pension schemes under coverage and the credit quality of the sponsoring employers.

MFR roll-forward

Estimate of a *section 179* liability derived from a *Minimum Funding Requirement* (MFR) calculation.

Minimum funding requirement/valuation (MFR)

The MFR valuation was introduced to provide a uniform funding floor for *defined benefit* schemes. Schemes are required to be funded to a given level or, if they are not already at that level, to achieve it within a set period. This valuation is required to be carried out every three years.

Open

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

PA92 medium cohort

Mortality assumptions prepared by the Continuous Mortality Investigation Board (CMIB) of the Institute and Faculty of Actuaries. The 'medium cohort' takes into consideration the fact that the biggest improvements in mortality in recent years have occurred for those born between around 1925 and around 1945.

Paid up (or frozen)

All contributions to the scheme have stopped and no further pensionable service accrues. Members' benefits for earlier service continue to be held and invested in the scheme.

Participating employer

An employer that has some (or all) employees who can join an occupational pension scheme. This term is usually used where there is more than one employer participating in a single scheme.

Pensioner member

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

Pension Protection Fund

A statutory fund run by the Board of the Pension Protection Fund, a statutory corporation established under the Pensions Act 2004.

Pension protection levy

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

the Pensions Regulator

The UK regulator of work-based pension schemes, an executive non-departmental public body established under the Pensions Act 2004.

Personal or group personal pension/stakeholder pension

Personal pensions are provided by insurance companies to enable individuals to save for a private retirement income. Similarly, a group personal pension is a scheme where multiple members accrue benefits in separate accounts. These types of scheme are usually provided by employers to allow their employees to save towards their retirement. The benefits from personal pension schemes are set up in the name of the individual. A stakeholder pension scheme is a particular type of personal pension scheme.

Principal employer

The employer named in the trust deed and rules of the scheme which usually has powers such as those to appoint trustees, amend the scheme rules or wind the scheme up. This is often the employer who set up the scheme, or its successor in business.

Risk-based levy

See *pension protection levy*. Calculated on the basis of a pension scheme's *deficit* and *insolvency risk* of the sponsoring employer.

Scheme actuary

The named actuary appointed by the trustees of a *defined benefit* occupational pension scheme to carry out specific duties set out in the Pensions Act 1995.

Section 179 (s179) valuation

To calculate the risk-based *pension protection levy* the Pension Protection Fund Board must take account of scheme underfunding. To obtain a consistent basis for determining underfunding, schemes can complete a Pension Protection Fund valuation (section 179). This valuation will be based on the level of assets and liabilities for the scheme. The liabilities will be based on the scheme benefits taking into account key features of the levels of compensation paid by the Board of the Pension Protection Fund as set out in Schedule 7 of the Pensions Act.

Scheme-based levy

See *pension protection levy*. Calculated on the basis of *section 179* liabilities and the number of members participating the pension scheme.

Scheme funding position

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

Scheme funding valuation

New legislation on scheme funding came into force on 30 December 2005. The new requirements, introduced by the Pensions Act 2004, replace the minimum funding requirement and apply to occupational pension schemes providing *defined benefits*.

Scheme member

In relation to an occupational pension scheme, a scheme member is any person who:

- is an active member;
- is a deferred member;
- is a pensioner member;
- has rights due to transfer credits under the scheme; or
- has pension credit rights under the scheme.

This includes scheme members whose only entitlements are equivalent pension benefits (EPBs) as those rights were earned through pensionable employment.

Members (for occupational and personal schemes) do not include dependants of members. Those whose only entitlements are lump sum benefits payable on death are also not included.

Scheme return notice

The Pensions Act 2004 set out the requirement to send occupational pension schemes a scheme return to complete. The information collected in the scheme return will further enable the regulator to perform its new role and responsibilities. The scheme return notice is issued to schemes to inform them that it is time to complete a scheme return.

Sectionalised scheme

A multi-employer scheme which is divided into two or more sections where:

- any contributions payable to the scheme by an employer in relation to the scheme, or by an employee of that employer, are allocated to that employer's section; and
- a specified proportion of the assets of the scheme is attributable to each section of the scheme and cannot be used for the purposes of any other section.

Some sections open/some sections closed

A scheme that has sections with different status types. For example the scheme may have a *defined benefit* section closed to new entrants, and a *defined contribution* section open to new entrants.

Swap

A contract calling for the exchange of payments over time. Often one payment is fixed in advance and the other is floating based upon the realisation of a price or interest rate.

Total deficit

Sum of *scheme deficits*, or sum of *scheme funding positions* for schemes in deficit only.

Trustees

- Corporate trustee (non-professional)
  A company usually related to the employer (or the employer itself) set up to act as trustee for a scheme or a series of related or associated schemes.
- Member-nominated trustee (MNT)
  A person nominated by the members (and sometimes elected) to be a trustee of the scheme. A MNT may be a member of the scheme. A MNT is appointed in accordance with sections 16-21 of the Pensions Act 1995.
- Pensioneer trustee
  A pensioneer trustee is an individual or a company recognised by HMRC (Inland Revenue) as having pensions expertise.
- Professional trustee (including corporate)
  A professional trustee not connected with the employer and not a scheme member. The trustee could be a corporate trustee company or an individual. A professional trustee provides trusteeship and trustee services to a number of unrelated and non-associated pension schemes.
- Statutory independent trustee
  A trustee appointed to a scheme where an insolvency practitioner has been appointed over an employer in accordance with sections 22-26 of the Pensions Act 1995.

Voluntary form reporting

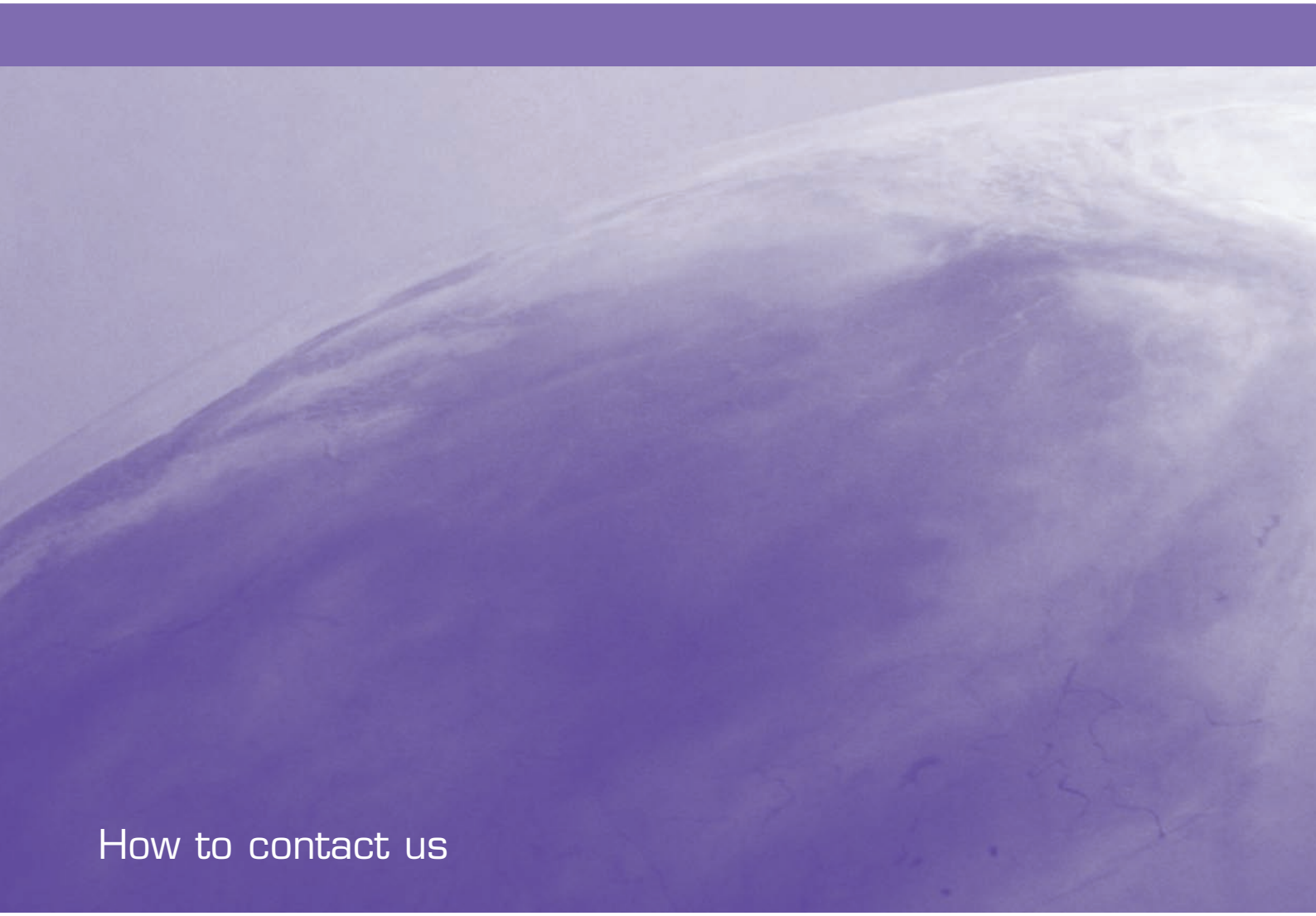
Electronic forms are available on the Pension Protection Fund's website for pension schemes to provide data regarding sectionalised schemes, contingent assets, participating employers, scheme structure, estimates of pension fund deficits on a *section 179* basis, deficit reduction contributions and block transfers.

Winding up/wound up

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

- transferring pension values to another pension arrangement;
- buying immediate or deferred annuities; or
- transferring the assets and liabilities of the scheme to another pension scheme.

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



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