12

PPF risk developments

This chapter looks at the risks to our funding position and to our ability to deliver on our mission.

Summary

This chapter contains information on our approach to funding and how we manage the risks that could have a material impact on our future funding levels.

In September 2022 we published the outcome of our funding strategy review, which confirmed our approach to financial risk management as we enter a new phase of our funding journey. We are in a strong financial position and our strategic aim will shift from growing our reserves to maintaining our financial resilience. To meet this objective we have defined a set of funding priorities, and the strategic decisions we take will be guided by how our reserves compare to these priorities.

To help us understand how our future funding may evolve, we use a stochastic model which considers how our own funding and that in the universe we protect may change over time. This modelling is then used to help inform our future investment and levy strategy.

Over the last year, there has been a material improvement in our funding position and in that of the schemes we protect. This has increased the likelihood of us meeting our new funding objective of 'Maintaining our Financial Resilience'. However, the general economic environment remains volatile. Our modelling indicates that we are well placed to cope with the uncertainty, and our new funding framework will help guide our strategic decisions as our funding and that of the schemes we protect evolve.

Our approach to risk management

Like other financial institutions, we assess our risks using a comprehensive enterprise risk management framework, so we focus on the risks that could have the most material impact. We seek to understand our financial risks by using modelling, including sensitivity testing, to help us understand the potential impact from changes to those risks in the future.

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

Strategic and Funding: risk from our existing assets and liabilities

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

We will accept risk where it adds value to do so or where the costs of hedging are disproportionate. We hedge our liabilities closely for changes in inflation and interest rates. We also use a bespoke investment strategy which seeks to avoid concentration in the UK economy to which we are exposed via the companies sponsoring the schemes we protect. This strategy takes a conservative level of investment risk to enable us to grow our reserves further over the long term. We accept short-term volatility of our funding level and our response to such volatility is consistent with our long-term funding strategy.

We are willing to accept longevity and other demographic risks. However, we are prepared to transfer these risks to a third party if they are significant and hedging costs are reasonable. Reflecting the importance of longevity in our future cashflows, we use granular estimates of longevity based on socio-economic and geographical factors.

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

External Environment: risk from the schemes we protect

This is the risk that we exist to protect – a scheme being underfunded when its sponsor fails, possibly resulting in a claim. We cannot control these risks so we must accept them. Therefore, we monitor these risks to understand any implications they may have for us both financially and operationally.

TPR monitors funding and sets guidance for DB pension schemes to reduce the risk of scheme underfunding. We liaise with TPR regularly to gain a shared understanding of developments that may change the risk of claims on us. In addition, we monitor key information about employers who sponsor the schemes we protect, including public credit ratings where available. When monitoring claims risk, we consider both the potential size of a claim and the likelihood of it occurring.

The data in *The Purple Book* shows that risk in the universe has reduced over time and that claims on us have been decreasing. That said, some schemes remain very underfunded and therefore the risk of further claims on us remains.

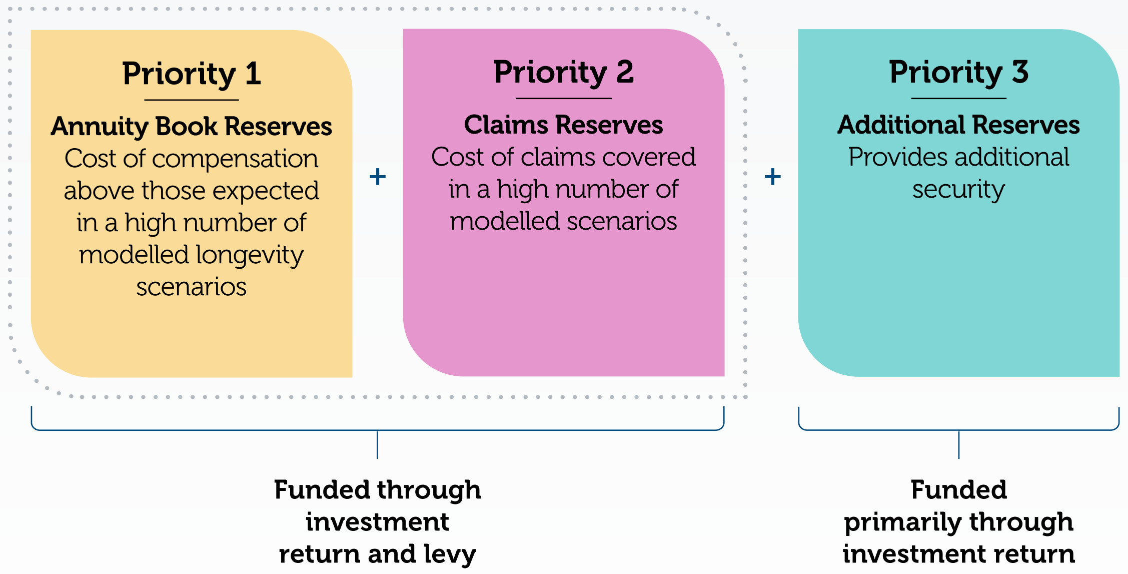
Our funding strategy

Recognising our own financial strength and the changing profile in our universe, we are entering what we have called the maturing phase of our funding journey. During this phase our central expectation is that we will see fewer claims, and that those that do occur will have less impact on our funding.

We confirmed in September 2022 that during this new phase our funding objective will be 'Maintaining our Financial Resilience'. We define Financial Resilience as having a high level of confidence of being able to pay compensation to both our current and future members in full, with no support required from investment returns and levy. The strategic decisions the Board will take will depend on how our reserves compare with the level required to meet the Financial Resilience test.

To help us achieve this objective we have set three main funding priorities, as illustrated in the diagram below. The investment and levy decisions we take will be guided by how our reserves compare to these priorities.

Target reserves during the PPF maturing phase



The Annuity Book Reserves and Claims Reserves are designed to cover all but the worst longevity and claim scenarios. These reserves will be funded through both investment return and levy. Any Additional Reserves built up will be funded primarily through investment return.

Introduction
Overview
Executive summary
The data
Scheme demographics
Scheme funding
Funding sensitivities
Insolvency risk
Asset allocation
Risk reduction
PPF levy 2021/22
Claims and schemes in assessment
PPF compensation 2021/22
PPF risk developments
Appendix
Glossary
Charts and tables

PPF risk developments continued

We consider ourselves Financially Resilient when we have sufficient reserves to cover both Priority 1 and Priority 2 reserves, i.e. longevity reserves for our current members and reserves for future claims. However, our aim is to achieve Priority 3 reserves, i.e. additional reserves above those needed to meet the Financial Resilience test, to provide better protection for both our current and future members. As the universe we protect matures and declines, it will be difficult to raise a material levy. By building additional reserves – through our investment returns – our aim is to reduce the risk of having to go back to ask levy payers to contribute more in the future.

Summary of modelling

To understand the level of protection afforded by our reserves and how likely we are to meet our Financial Resilience test in the future we use the Long-Term Risk Model (LTRM), a Monte Carlo simulation model. This model runs a million different scenarios to project what the future may look like, allowing for future claims, levies, investment returns and changes in economic conditions. Like any complex modelling exercise, the projections are subject to significant uncertainty and our success ultimately depends on some factors outside of our control.

No model can perfectly predict the future, and the LTRM is no exception. The base case projections are based on a series of assumptions, which we continually refine to reflect how experience and expectations develop over time. We assume that our broad approach to levy will not change. Our investment strategy is assumed to remain unchanged in the medium term, and then to gradually de-risk as we move from our maturing phase to our final run-off phase. Schemes are assumed to transition gradually to a low-risk investment strategy, and to keep receiving deficit-reduction contributions (DRCs) if they are underfunded.

The fan chart in figure 12.1 below shows the recent history of our funding level up to 2022, followed by LTRM projections of how it might develop in the future. Projections are shown for the period up to 2035, which is the earliest we expect to move from our current maturing phase to our run-off phase. The chart shows that, based on our current strategy, in most scenarios our funding level is expected to rise as investment returns plus income from levy exceed claims. Also, even in more extreme scenarios, the funding level remains above 110 per cent, which is the amount currently estimated as needed to cover our Priority 1 reserves.

Figure 12.1 | Projections of our funding level

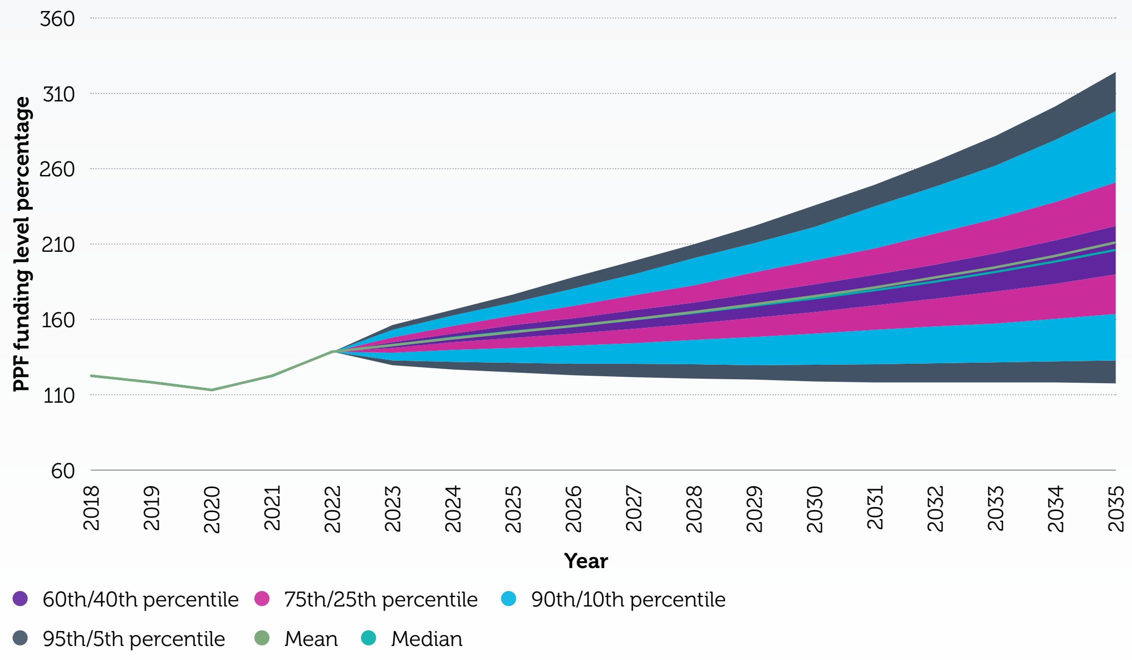
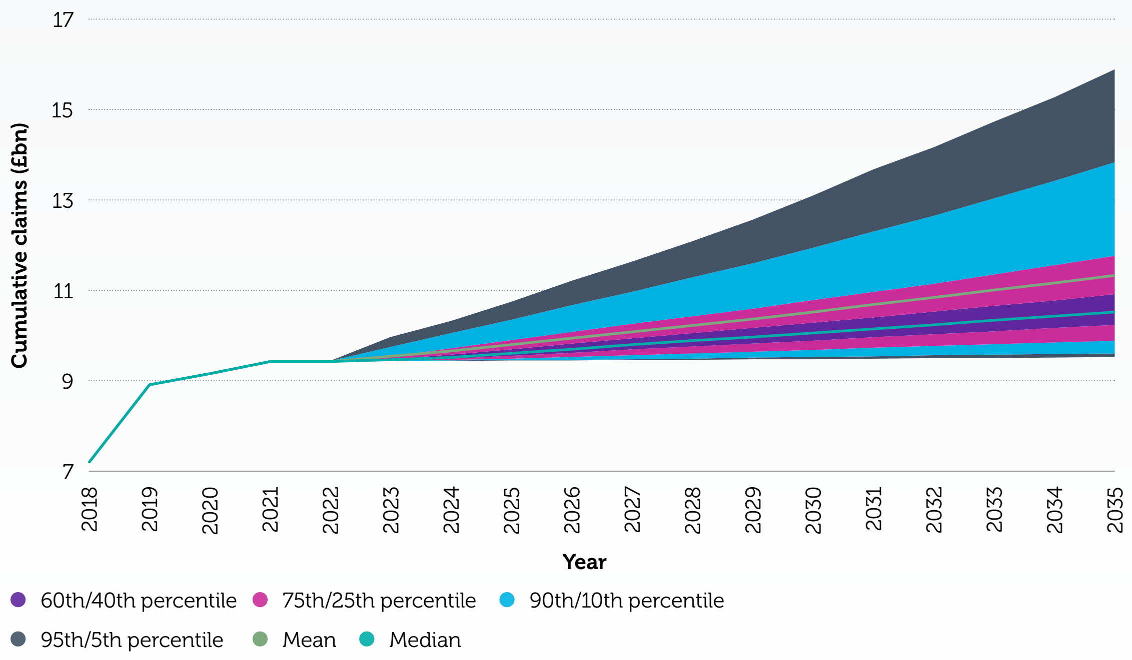


Figure 12.2 below shows the history of claims as well as the distribution of modelled claims on the fund beyond 2022. This is the risk our Priority 2 reserves are designed to protect against. As at 31 March 2022 we were close to having sufficient reserves to meet out Financial Resilience test and have a high likelihood of achieving it by the time of our next planned detailed review in 2025. The chart also shows that in many of our modelled scenarios we can expect modest growth in our cumulative claims, which is a defining feature of the maturing phase. We do still have some scenarios where significant claims occur.

Figure 12.2 | Projections of cumulative claims



Risks not allowed for in our modelling and possible future changes in the risk landscape

Like all financial services institutions, we are exposed to possible changes in the external environment, which could have an impact on our finances but over which we have no or limited influence. At this stage it would not be appropriate to incorporate all such factors into our modelling and our funding targets. The following paragraphs discuss some of the most material risks which we are currently monitoring.

Climate risk: We consider climate change as a systemic risk, which can affect the value of our investments across the short, medium and long term. We have engaged with the Paris Aligned Investment Initiative (PAII) and other initiatives to improve our management of these risks. As a supporter of the Task Force on Climate-related Financial Disclosures (TCFD), we commit to reporting on our climate-related governance, strategy, risk management, and metrics and targets. Our dedicated TCFD Climate Change Report[1] shares this information in-depth. Climate change could, over the medium to long term, have a significant impact on the level of claims we receive. This is due to impacts on the value of scheme asset portfolios and on sponsor insolvency risk. Increased requirements on pension schemes for disclosure are likely to drive changes in approach to investment. Also, longevity risk is potentially affected by climate change, which could impact the reserves we need to meet our Financial Resilience Test. We continue to review and develop approaches to help us understand the potential impact of climate change in our risk exposure.

1 https://www.ppf.co.uk/sites/default/files/2021-09/PPF_ClimateChangeReport2021.pdf

COVID-19 pandemic: Although, so far, we have not experienced an increase in claims attributable to COVID-19, due to government support for businesses, it is possible that longer-term consequences will feed through to higher future claims. Also, the long-term impacts on life expectancies are still unclear at this stage. Our modelling makes no allowance for longer-term expected impacts and assumes no further improvements in life expectancy over the shorter term.

Macro-economic changes to the economy: The current macro-economic environment remains volatile. There are a number of contributing factors which have led to both short-term and structural changes. The ultimate extent of the structural changes is still somewhat uncertain at this stage. Changes to working preferences are affecting the demand for certain types of goods and services. Supply issues are affecting the availability of component parts and labour in certain sectors. The current high inflation environment has been created by supply-demand imbalances, particularly in the energy and food sectors; the medium-term outlook for inflation is still uncertain. These issues may adversely impact the viability of sponsoring employers, which affects our biggest risk. The value of our financial assets may also be affected. The impact of this may however be muted to some extent as a high interest environment will act to improve funding for many schemes. This means that even if insolvency rates do rise, we expect a low proportion to transfer to us.

Buy-out pricing: A material deterioration in buy-out pricing either through supply issues or changes to underlying regulation could see the deficit in the universe we protect increase, hence increasing claims risk. Conversely, increased competition or regulatory change could see pricing become cheaper. This could in theory lead to a faster decline in the DB universe.

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

TPR's consultation on a new DB funding framework: TPR expects the draft code of practice on funding to be published in late 2022. The new framework is expected to be operational from September 2023. Its aim will be to increase the security of the benefits that have been promised to members of DB schemes, which also has the impact of reducing the likelihood and scale of claims on us.

Sensitivities

The LTRM output has been tested for sensitivity to a range of modelling assumptions. The sensitivity tests aim to provide an insight into how the model outputs might be affected if future experience is not as expected relative to the base case, best-estimate assumptions.

A selection of the more significant sensitivity scenarios tested this year are summarised in the table below. Under each of these scenarios, we are comfortable that our current strategic decisions would be unchanged.

The scenario having the most impact was a deterioration in funding by 10 per cent. In this scenario, our Financial Resilience Test may take two funding cycles rather than one to be met. That said, the coverage of future claims in this scenario remains very high.

Worsened funding levels for the schemes we protect	Scheme s179 funding levels reduce by 10 percentage points as a result of a decrease in asset values
Increased insolvency risk	Transition probabilities for all credit rating downgrades are increased by 10 per cent at all future times
Higher inflation and nominal interest rates	Inflation and nominal interest rates increased by one percentage point a year at all future times and all durations
Lower returns on growth assets	Growth asset returns are 0.2 percentage points a year lower at all future times

Introduction
Overview
Executive summary
The data
Scheme demographics
Scheme funding
Funding sensitivities
Insolvency risk
Asset allocation
Risk reduction
PPF levy 2021/22
Claims and schemes in assessment
PPF compensation 2021/22
PPF risk developments
Appendix
Glossary
Charts and tables

Introduction
Overview
Executive summary
The data
Scheme demographics
Scheme funding
Funding sensitivities
Insolvency risk
Asset allocation
Risk reduction
PPF levy 2021/22
Claims and schemes in assessment
PPF compensation 2021/22
PPF risk developments
Appendix
Glossary
Charts and tables

Appendix

Note on historical datasets.

Sources of data

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

1. Scheme returns provided to TPR

Most of the analysis in this year's publication is based on new scheme returns issued in December 2021 and January 2022 and returned by 31 March 2022.

2. Voluntary form reporting

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

3. Sponsor failure scores

From the Levy Year 2021/22, D&B took over from Experian to provide us with scores for calculating the PPF levy using the PPF-specific model. This is a statistical model, developed using observed insolvencies among employers and guarantors of DB pension schemes. More detail on the model can be found on our website[1].

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

The data used in Chapters 9 (PPF levy 2021/22), 10 (Claims and schemes in assessment) and 11 (PPF compensation 2021/22) are derived from the PPF's business operations. The data from Chapter 8 is mostly taken from a variety of public sources, as noted underneath each figure.

The PPF-eligible DB universe and *The Purple Book 2022* dataset

The PPF covers certain DB occupational schemes and DB elements of hybrid schemes. Some DB schemes will be exempt from the PPF, including[2]:

- unfunded public sector schemes;
- some funded public sector schemes, for example, those providing pensions to local government employees;
- schemes to which a Minister of the Crown has given a guarantee;
- schemes with fewer than two members; and
- schemes which began to wind-up, or were completely wound-up, before 6 April 2005.

Scheme funding

As in previous *Purple Books*, the bulk of our analysis uses funding estimates on an s179 basis. This is, broadly speaking, what would have to be paid to an insurance company to take on PPF levels of compensation, and estimates of this are what we use in the calculation of scheme-based levies. The analysis in Chapter 4 (Scheme funding) uses s179 data submitted by schemes on TPR's Exchange system by 31 March 2022 and we roll these asset and s179 liability values forward to 31 March 2022 in the following way:

- The asset values are rolled forward using the asset split information submitted on Exchange by schemes and the change in benchmark asset indices over the period. This roll forward methodology will only allow for unfunded LDI arrangements such as interest rate swaps to the extent that the exposure is reflected in the asset split information submitted. DRCs that have been submitted by schemes for levy purposes[3] have been added to the asset values submitted in s179 valuations. These DRCs represent the contributions made by the sponsoring employer between the s179 valuation date and 31 March 2022 after allowing for deductions for items such as additional benefit accrual and benefit augmentations. No allowance is made for membership movements over the period, for benefits paid out or the cost of new benefit accrual.
- The s179 liability values are rolled forward to 31 March 2022 using the s179 data submitted by schemes and converted to version A10 of the s179 assumptions that came into effect on 1 May 2021. No allowance is made for membership movements over the period, for benefits paid out or the cost of new benefit accrual.

As in previous years, PPF actuaries have also produced full buy-out estimates (i.e. based on original scheme levels of compensation) of the funding position for *The Purple Book 2022* dataset. These estimates are calculated in the same way as described above except an approximate allowance is made for the difference between the compensation we would pay members and the benefit levels paid by schemes based on the scheme benefits data submitted on Exchange.

Historical datasets

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

- *Purple Books 2006* and *2007* – extended dataset
- *Purple Books 2008* to *2021* – original dataset

Scheme status

Scheme status in this *Purple Book* is split between:

- open schemes, where new members can join the DB section of the scheme and accrue benefits;
- schemes closed to new members, in which existing members continue to accrue benefits;
- schemes closed to future benefit accrual, where existing members can no longer accrue new years of service; and
- schemes that are winding up.

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

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

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

1 For more information see: https://www.ppf.co.uk/current-levy-rules
2 For a more comprehensive list see 'eligible schemes' on our website.
3 For more information see the 2021/22 DRC appendix and guidance on our website. 2021/22 levy year | Pension Protection Fund (ppf.co.uk)

Introduction
Overview
Executive summary
The data
Scheme demographics
Scheme funding
Funding sensitivities
Insolvency risk
Asset allocation
Risk reduction
PPF levy 2021/22
Claims and schemes in assessment
PPF compensation 2021/22
PPF risk developments
Appendix
Glossary
Charts and tables

Glossary

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

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

Assessment period
The time when a scheme is being assessed to see if the 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.

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

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

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

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

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

Dead company
A company that is dissolved.

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

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

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

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

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

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

Dun and Bradstreet (D&B)
A provider of insolvency scores used by us for PPF levy calculations.

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

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

Financial Resilience
Defined by us to mean having a high level of confidence of being able to pay compensation to both our current and future members in full, with no support required from investment returns and levy.

Full buy-out
The cost of insuring a pension scheme in the private market. The discount rate applied to liabilities would generally be more prudent than the discount rate applied to section 179 valuations. The benefit assumed in private insurance is usually non-capped and thus could be greater than PPF coverage.

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

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

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

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

Glossary continued

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

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

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

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

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

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

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

LTRM
Long Term Risk Model

Maturing phase
This is the second stage in the PPF's journey (after the growth phase). Once we have reached a certain size, the impact of new claims reduces and our liabilities stabilise.

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

ONS
Office for National Statistics

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

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

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

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

Pp
Percentage points

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

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

Responsible investment
An investment strategy that incorporates environmental, social and governance factors in investment decisions and asset ownership.

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

Run-off phase
This will be the final stage of the PPF's journey. This will be the phase in which our liabilities fall as our membership matures.

Scheme-based levy
See PPF levy. Calculated on the basis of section 179 liabilities and the number of members in the pension scheme.

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

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

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

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

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

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

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

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

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

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

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

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

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

Introduction
Overview
Executive summary
The data
Scheme demographics
Scheme funding
Funding sensitivities
Insolvency risk
Asset allocation
Risk reduction
PPF levy 2021/22
Claims and schemes in assessment
PPF compensation 2021/22
PPF risk developments
Appendix
Glossary
Charts and tables

Charts and tables

Chapter 2:

Figure 2.1 | Distribution of schemes excluding those in assessment by size of scheme membership

Figure 2.2 | Distribution of assets, s179 liabilities and members in *The Purple Book 2022* dataset as at 31 March 2022

Figure 2.3 | *The Purple Book* datasets

Chapter 3:

Figure 3.1 | Distribution of schemes by scheme status

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

Figure 3.3 | Distribution of schemes by scheme status and year

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

Figure 3.5 | Distribution of members by scheme status

Figure 3.6 | Distribution of members by scheme status and year

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

Figure 3.8 | Number and distribution of members by member type and scheme status, as at 31 March 2022

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

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

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

Figure 3.12 | Distribution of schemes by asset size

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

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

Chapter 4:

Figure 4.1 | Key funding statistics as at 31 March 2022

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

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

Figure 4.4 | s179 funding ratios by size of scheme membership as at 31 March 2022

Figure 4.5 | Distribution of s179 funding ratios by size of scheme membership as at 31 March 2022

Figure 4.6 | Estimated full buy-out levels by size of scheme membership as at 31 March 2022

Figure 4.7 | Distribution of estimated full buy-out funding ratios by size of scheme membership as at 31 March 2022

Figure 4.8 | Analysis of s179 funding ratios by scheme maturity as at 31 March 2022

Figure 4.9 | Distribution of funding ratios on an s179 basis by scheme maturity as at 31 March 2022

Figure 4.10 | Analysis of s179 funding ratios by scheme status as at 31 March 2022

Figure 4.11 | Distribution of schemes by s179 funding ratios within scheme status groups as at 31 March 2022

Figure 4.12 | Analysis of estimated full buy-out funding ratios by scheme status as at 31 March 2022

Figure 4.13 | Distribution of schemes by estimated full buy-out funding ratios within scheme status groups as at 31 March 2022

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

Chapter 5:

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

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

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

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

Figure 5.5 | Movements in gilt yields

Figure 5.6 | Movements in equity indices

Figure 5.7 | Impact of changes in gilt yields and equity prices on s179 funding positions from a base net funding position of £193.0 billion as at 31 March 2022

Figure 5.8 | Impact of changes in gilt yields and equity prices on assets from a base of 100 as at 31 March 2022

Figure 5.9 | Impact of changes in gilt yields on s179 liabilities as at 31 March 2022

Figure 5.10 | Impact of changes in nominal or real gilt yields on s179 liabilities as at 31 March 2022 (base = £1,473.9 billion)

Figure 5.11 | Impact of changes in life expectancy assumptions on s179 liabilities as at 31 March 2022 (base = £1,473.9 billion)

Chapter 6:

Figure 6.1 | Annual insolvency rates

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

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

Chapter 7:

Figure 7.1 | Distribution of schemes by asset allocation date

Figure 7.2 | Weighted average asset allocation in total assets

Figure 7.3 | Asset allocation: simple averages

Figure 7.4 | Bond splits

Figure 7.5 | Equity splits

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

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

Figure 7.8 | Weighted average asset allocation by s179 funding ratio

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

Chapter 8:

Figure 8.1 | Contingent assets by type

Figure 8.2 | Planned recovery plan payments until 2032 by asset size

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

Figure 8.4 | Value of risk transfer deals since 2007

Figure 8.5 | Number of risk transfer deals since 2010

Figure 8.6 | Value of risk transfer deals since H2 2013

Charts and tables continued

Chapter 9:

Figure 9.1 | Total levy

Figure 9.2 | Distribution of levy by largest levy payers in 2021/22

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

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

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

Figure 9.6 | Levy distribution by levy band

Figure 9.7 | s179 aggregate stressed smoothed liabilities by levy band

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

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

Figure 9.10 | Percentage of total levy that is scheme-based by funding ratio (on a stressed and smoothed basis, excluding bespoke asset stress submissions)

Figure 9.11 | Number of sponsoring employers in each D&B scorecard

Figure 9.12 | Levy invoiced in respect of schemes with sponsoring employers in each D&B scorecard

Figure 9.13 | Number of schemes with sponsoring employers in each D&B scorecard

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

Chapter 10:

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

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

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

Figure 10.4 | Percentage of schemes and percentage of s179 liabilities grouped by size of liabilities for schemes in assessment, as at 31 March 2022

Figure 10.5 | Proportion of schemes in assessment by membership size

Figure 10.6 | Maturity of schemes in assessment by membership size

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

Chapter 11:

Figure 11.1 | Total compensation and number of members' records

Figure 11.2 | Gender of members in the PPF

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

Figure 11.4 | Distribution of deferred members by annualised compensation level

Figure 11.5 | Status of members receiving compensation

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

Figure 11.7 | Annualised compensation by UK region

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

Chapter 12:

Figure 12.1 | Projections of our funding level

Figure 12.2 | Projections of cumulative claims

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