

## Why do we need a Long-Term Risk Model?

The Pension Protection Fund (PPF) was set up in April 2005 to pay compensation to members of pension schemes whose employers have gone bust and are unable to fulfil their pension promises.

As more schemes come under our wing, an increasing number of scheme members will start to receive PPF compensation. Therefore, it is vital that we can assure those people that their money is coming from a trusted, viable and – above all – stable source.

This means that we need to be able to work out how much risk we will face over the next few decades and mitigate that risk as much as possible to:

- build long-term sustainability
- set a stable risk-based levy year-on-year, and
- ensure that people continue to get the compensation they are entitled to.

That is why we have produced our unique Long-Term Risk Model. In continuous development for two years, this model helps us calculate the risks we may face in five or even 10 years' time.

## What is the Model?

The Model is based on 'stochastic'<sup>1</sup> modelling methods commonly used by insurance companies to estimate their assets and liabilities as best they can and, therefore, assess how solvent they are.

While insurance companies use this method to predict what would happen to them in times of disaster, such as hurricane or flood, we have adapted it to predict the level of risk we would face in a wide range of economic conditions.

For example, we can predict what might happen to PPF funding if there was a major stock market crash or, alternatively, if there was a stock market boom.

This allows us to work out how many schemes might become eligible for PPF protection in the future and, therefore, calculate our potential liabilities.

A significant benefit of the Model will be to help us set a stable risk-based levy. By understanding what risks we may face in the future, we can plan ahead and set a levy which should represent the real risk we face and be free of extreme fluctuations in future.

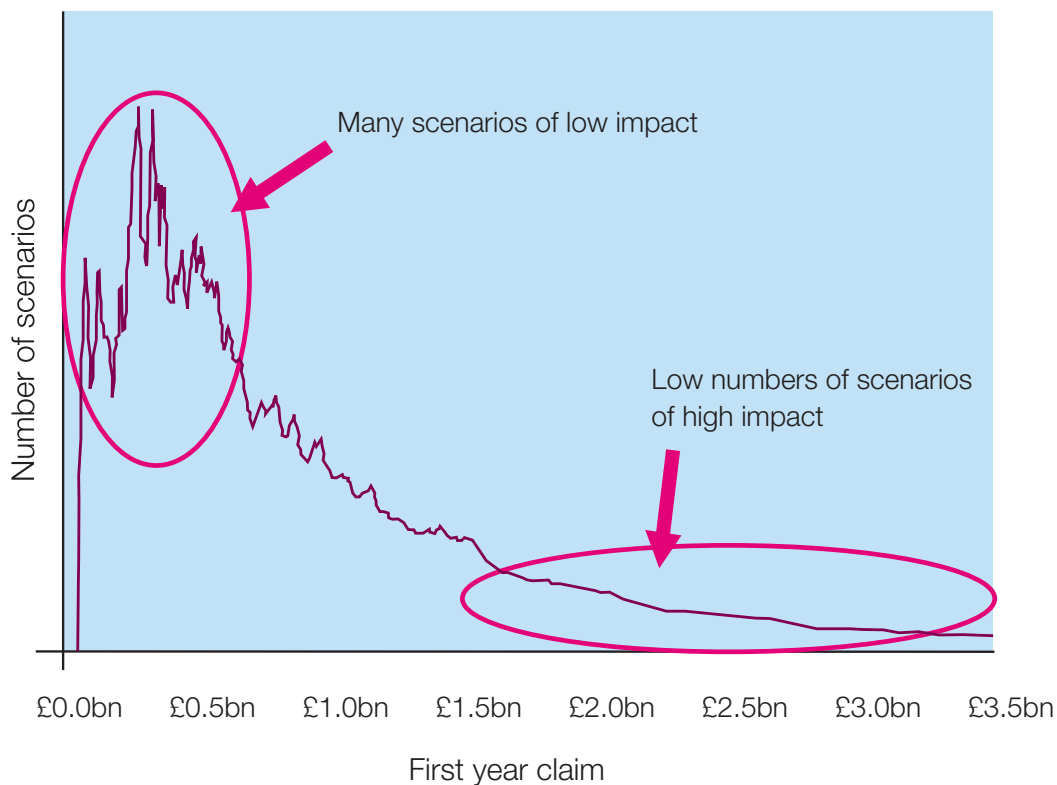
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<sup>1</sup>Stochastic means being, or having, a random variable.

## How does the Model work and what does it tell us?

The Model creates hundreds of thousands of different scenarios, combining different economic conditions with varying patterns of company failure. It then works out what impact these scenarios would have on the level of “claims” on the PPF.<sup>2</sup> Looking at which outcomes arise most often allows us to build up a picture of the likely level of claims on the PPF.

The graph below shows the number of scenarios for each level of first year claim, and it can be seen that there are many scenarios that lead to claims at each point in the £200 million to £600 million range, with gradually fewer scenarios at each point at higher levels of claim.



<sup>2</sup> Claims are measured on a s179 basis – reflecting what it would cost to buy the PPF pension benefits from a commercial provider. In practice the PPF does not buy out benefits but pays pensions itself, as this is cheaper.

- The average first year<sup>3</sup> claim turned out to be £1 billion.
- There is a 75 per cent chance that first year claims will be below £1.3 billion.
- There is a 50 per cent chance they will be below £0.68 billion.

## How will “claims” affect the PPF?

It is important to remember that these “claims” are liabilities that will be spread over many years, as people begin to receive PPF compensation on their retirement – and will not be paid out as a lump sum. This allows the PPF to invest its assets to increase their value. We also save money by paying compensation direct, rather than buying a commercial pension to pay members, so the Model estimated that:

- 1) the PPF would have a surplus in three quarters of all scenarios – and in two thirds of those it would be £1.95 billion or more
- 2) but in 1 in 10 scenarios there would be a deficit of £2.6 billion or more.

## Four example scenarios from the LTRM

Identical outcomes, in terms of overall claim, can happen as a result of very different interactions between economic conditions and levels of insolvency – a large claim on the PPF could be the result of a severe economic downturn or if one or more very large businesses collapse.

Here are four examples drawn from the Long Term Risk Model paper<sup>4</sup>. The outcomes from the first two scenarios in the estimate are outlined above in estimate 1. The outcomes for scenario 3 and 4 are outlined above in estimate 2.

### Scenario 1

#### Economic conditions

- Share prices rise on average 14 per cent over 5 years
- Bond yields are flat at just below 4 per cent
- Insolvency risk is 2.5 times the average for the model

#### Pension scheme experience

High number of small scheme failures but none of the 479 large employers fail

<sup>3</sup>Claims will reduce over a 5 year period to take account of changes in the number of schemes paying the levy.

<sup>4</sup>Further detail is available in the LTRM paper available from the PPF website at [www.pensionprotectionfund.org.uk](http://www.pensionprotectionfund.org.uk). The 4 scenarios are pairs chosen from respectively the median and mean points of the claims distribution.

## Scenario 2

### Economic conditions

- Share prices fall on average 2 per cent
- Bond rates rise gently to 4 per cent
- Insolvency risk is half the average

### Pension scheme experience

Small scheme failures at a fifth of the level in scenario 1, but two large employers fail

### PPF outcome

Scenarios 1 and 2 lead to a surplus. The higher level of scheme failures overall in scenario 1 has been balanced by schemes being better funded and the survival of all large schemes.

## Scenario 3

### Economic conditions

- Share prices are weak – rising 5 per cent per annum
- Bond yields are low – on average 3.6 per cent
- Insolvency risks are 2.5 times the average (very like scenario 1)

### Pension scheme experience

Twenty one large schemes fail, 4 of them schemes with £1 billion plus in assets

## Scenario 4

### Economic conditions

- Shares are weak - rising 3.4 per cent per annum
- Bond yields average 4.8 per cent
- Insolvency risks are a little over 1.5 times the average

### Pension scheme experience

Fifteen large schemes fail, 4 of them schemes with £1bn plus in assets.

## PPF outcome

Scenarios 3 and 4 are adverse scenarios – only 10 per cent of scenarios are as bad for the PPF as this. Scenario 3 resembles scenario 1 very closely in terms of the risk of insolvency – but more big schemes failed and because share prices are lower their pension schemes have larger deficits. In scenario 4 share prices are weaker than in scenario 3 but less employers fail and higher bond yields reduce liabilities.

*All figures quoted in this factsheet are based on the model used to set the Pension protection Levy for 2007/08 at the end of December 2006 and are subject to change in line with economic conditions.*