HYMANS ROBERTSON

Oxfordshire Pension Fund

Funding risk update & 2025 valuation planning

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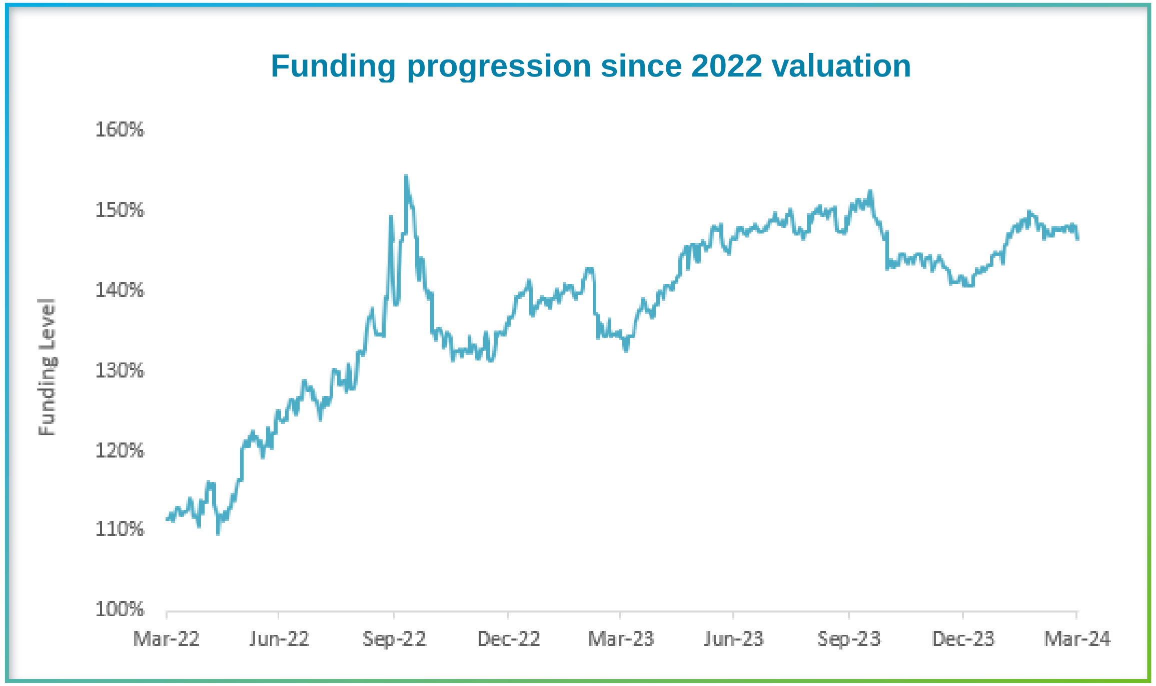
Executive summary

To help manage risk, the Fund carries out regular funding and risk monitoring between valuations. Since the 2022 valuation there has been a significant shift in the economic environment meaning the LGPS is now facing new risks and opportunities which increases the importance of robust risk management. This report has been prepared for Oxfordshire County Council as Administering Authority to the Oxfordshire Pension Fund (the Fund) to help its stakeholders understand how changes in the funding environment has impacted the Fund and to aid funding strategy planning discussions in preparation for the 2025 formal valuation.

- The funding position of the whole fund at 31 March 2024 is now 146% (compared to 111% at the 2022 valuation). The likelihood of the fund achieving the required future investment returns needed to be fully funded has also risen to 89% (from 77%).
- This improvement has been largely driven by an improved investment outlook due to a sharp rise in global interest rates.
- Employer funding positions have seen similar improvements. This is potentially very meaningful, for any employers approaching exit, however for many employers, having stable contributions over the longer term may be a more important objective.
- Short term inflation has been high since 2022, with pension increases of 10.1% (2023) and 6.7% (2024). While longer term inflation is expected to fall there remains uncertainty over future forecasts.
- Whilst the improved funding position is good news for the Fund, there remains uncertainty in financial markets, and material risks facing LGPS funds. Early planning for the 2025 valuation will be important to help the Fund manage any changes to its funding and investment strategy in the current environment.



It is important for the Fund to consider the impact of risks within the current environment and start planning for the 2025 valuation

Changes in the funding environment

Investment outlook

Investment returns since the 2022 valuation have been positive, with the Fund achieving a return of c.7.3% over the period from 31 March 2022 to 31 March 2024. This is slightly lower than the Fund's investment return assumption (at the valuation) of 4.6% pa.

However, as shown in the chart, expectations of *future* investment returns are now higher than at the 2022 valuation for all asset classes, largely due to the sharp rise in global interest rates (which had previously been at historic lows). In the case of the UK, the Bank of England base rate has increased from 0.75% at March 2022 to 5.25% at March 2024. If investors can get a higher return on cash and other lower-risk assets, it follows that the return on riskier assets, such as equities, should also increase. This is the approach within our Economic Scenario Service model (Appendix 4).

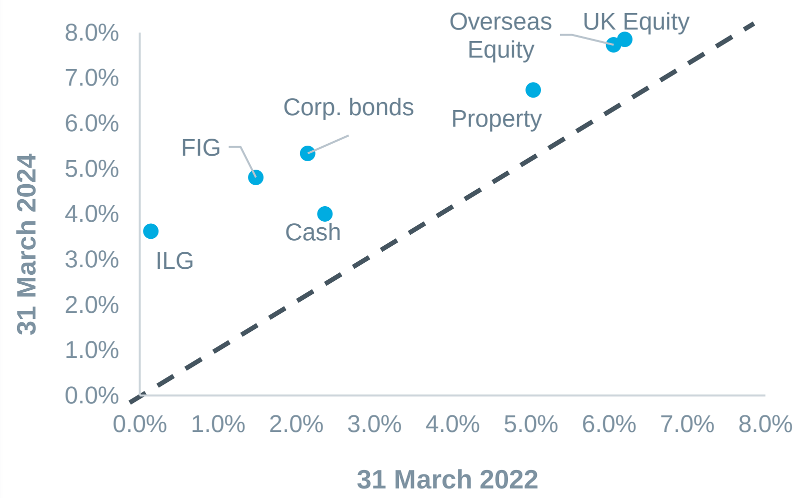
To put this into context, at 31 March 2022 we estimated that the Fund's investments would return 4.6% pa with a 70% likelihood of success. At 31 March 2024, we now estimate that the Fund will achieve a much higher investment return of 6.6% pa with the same 70% likelihood.

Higher future expected investment returns lead to a lower value being placed on the Fund's liabilities. In other words, this means that the improved funding level is reliant on higher income from future investment returns, which may be a reason to be cautious when setting contribution rates at the 2025 valuation.

What can the Fund do to manage investment risk?

- Consider the Fund's beliefs about the investment outlook and whether it should increase the level of prudence adopted in the future expected investment return assumption at the 2025 valuation to manage increased future uncertainty.
- Explore different combinations of investment strategy to understand what they mean for the likelihood of the Fund requiring additional future contributions.
- Investigate whether a single investment strategy for the whole Fund is still fit for purpose and consider carrying out exploratory work into the implementation of individual employer investment strategies.

20 year expected annual returns – 2024 vs 2022



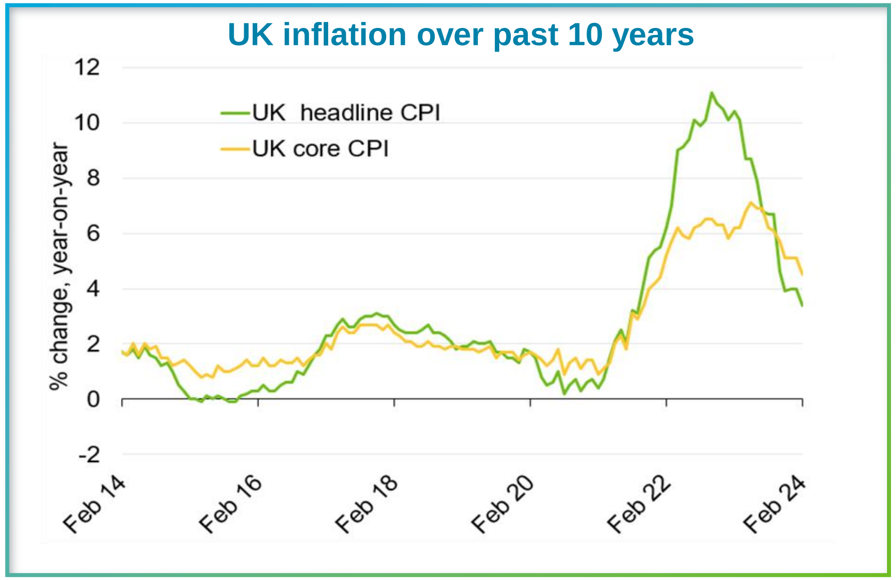
The improvement in funding level is being driven by the promise of greater *future* investment returns rather than investment returns actually earned by the Fund.

High inflation

Inflation is a key risk for pension funds to manage. Higher inflation increases the cost of benefits, which increases longer term funding costs but also has an immediate impact on shorter term cash flow (pensions in payment). Since the 2022 valuation, inflation has risen sharply, with pensions increasing by 10.1% (in 2023) and 6.7% (in 2024) which has increased liabilities (in isolation). However, this has been more than offset by central bank reaction to increase interest rates - which has led to higher expected future investment returns, reducing liabilities.

Recent inflation trends & forecasts

- Set against a weaker economic backdrop, headline year-on-year CPI inflation in the UK continued easing – albeit at a slower pace – in January and February to 3.4%.
- Core inflation, which excludes volatile energy and food prices, remained unchanged at 5.1% in January and fell to 4.5% in February. Not only is UK core inflation still more than double the Bank of England's target, but elevated services and wage inflation, both running at 6.1% year on year, highlight persistence in underlying price pressures.
- Latest consensus forecasts see inflation falling further, and even dipping below the BoE's 2% target in mid-2024, before rising above it in the second half of 2024.
- Medium-to-long-term consensus expectations are for UK inflation to stay slightly above the BoE's target. Forecasters point to a range of plausible reasons why inflation, and interest rates, might be higher over the medium term. These include expectations of more persistent labour shortages, a greater prevalence of supply shocks, diminishing returns from globalisation, the transition to net zero, and looser fiscal policy than in the period after the global financial crisis.



Source: Datastream

Although the expectation is for inflation to fall, it remains uncertain. Persistently higher inflation is a risk for pension funds. For example, if the long-term pension increase assumption was 1% pa higher, this will reduce the funding level by around 20%

What can the Fund do to manage inflation risk?

- Regular monitoring of inflation during periods of volatility is important. The Fund should consider both the short and longer-term impacts on their funding and investment strategies.
- If the strong funding position persists at the 2025 valuation, the Fund may choose to retain a funding cushion to help manage uncertainty surrounding inflation forecasts.
- Consider the Fund's beliefs about future inflation and carry out modelling to understand the impact of inflation risks on funding and cashflow.

Funding update

What has happened since the 2022 valuation?

The Fund's past service funding level has significantly improved since the 2022 valuation, rising to 146% (from 111% at 2022). The Fund now has a surplus of around £1.1bn at 31 March 2024 (compared to a surplus £329m at 31 March 2022), which has been driven by significant changes in the financial markets.

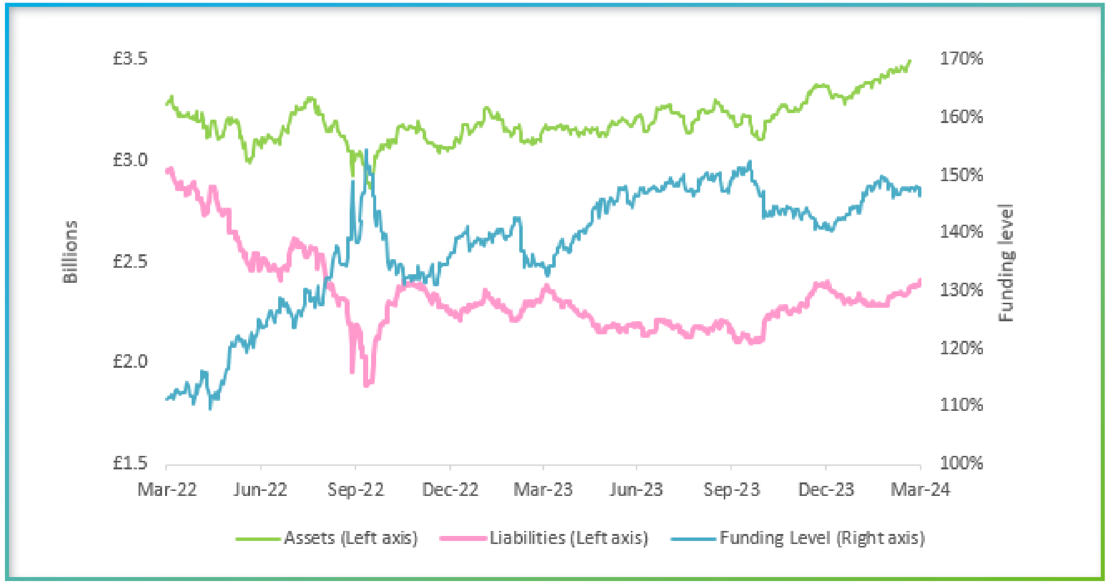
How have assets changed?

The Fund's asset value has remained relatively stable since the 2022 valuation, although there continues to be volatility (see **green line** in chart). Investment markets have seen headwinds leading to lower-than-expected returns on the Fund's investments to 30 September 2023. However, investment returns have been positive over the last few months, so the Fund is now holding slightly more assets than it did at the 2022 valuation.

How have liabilities changed?

Asset return expectations have risen since the 2022 valuation, in part due to the rise in global interest rates, which has led to the liability reduction (pink line) observed since the 2022 valuation. This effect has been offset, partially, by the effect of inflation being higher than expected at the 2022 valuation.

The improvement in funding level (blue line) is being driven by the expectation of higher future investment returns, despite inflationary pressures and dampened investment returns since the 2022 valuation



Being over 100% funded is generally good news, however there are limitations to the usefulness of the funding level metric because it is based on a single set of assumptions about the future and asset values at a single point in time. It also only recognises benefits earned to date ("past service") and not the cost of future benefits. The Fund therefore needs to consider the risk inherent in their funding strategy and their beliefs about the outlook for investment returns before taking action to manage any surplus.

The sharp increase in headline funding level will inevitably lead to various stakeholders seeking to understand what it may mean to them.

Funding level versus investment return assumption

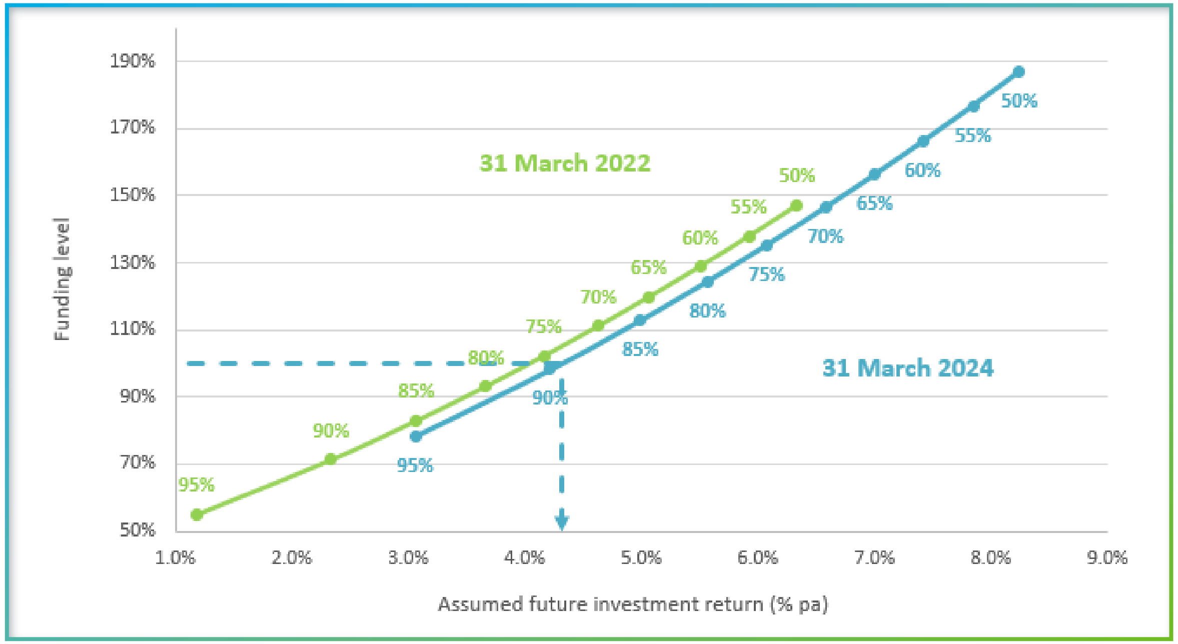
The Fund's funding level of 146% as at 31 March 2024 has been calculated using a future investment return assumption which has a **70%** likelihood of being achieved. This is in line with the Fund's Funding Strategy Statement, allowing for updated market conditions). However, this reported funding level is extremely sensitive to the return assumption adopted.

The chart shows how the Fund's funding level varies with the future investment return assumption adopted, comparing the position at 31 March 2022 (**green line**) with the updated position at 31 December 2023 (**blue line**). The percentages next to each point on the chart show the likelihood of the Fund's investment strategy achieving that return. From the chart we can see that:

- The future investment return required to be 100% funded has increased to 4.3% pa, compared to 4.0% pa at the 2022 valuation. In effect, we now require the Fund's investments to return more than we did at 2022.
- The likelihood of achieving any given future investment return is higher than it was at the 2022 valuation. For example, there is now a 89% chance of the Fund achieving the investment returns needed to be 100% funded, compared to 77% at the 2022 valuation.

This highlights that the improvement in funding position is not a result of the Fund holding more assets today. Rather, this has been driven by higher expected future investment returns due to the change in economic environment since the last valuation.

The effect of market volatility may lead to reductions in asset return expectations in the short term. To reflect any concerns about market volatility, additional prudence may be factored into funding plans via the level of assumed future investment return, which all else being equal would reduce the level of surplus in the Fund.



Required return of 4.4% p.a. has a 88% likelihood of being achieved

The Fund is now more likely to have sufficient assets to meet earned benefit payments than at the previous valuation. However, this is due to higher return expectations, not because the Fund holds more assets.

Employer funding and contributions

The Fund is composed of around 160 active employers. Each of these employers will have its own funding objective depending on the type of employer and their participation.

Given this diversity of employers it is important to understand and monitor employer risks. At 31 March 2024 the funding position has improved for all employers. This change in funding will be different for each employer depending on their membership (but similar to the Fund improvement for most).

The majority of employers are now fully funded (>100%) on the Fund's ongoing basis. Whilst this is good news for the Fund (and employers), this is not the endgame for employers who continue to participate and accrue benefits in an open scheme

Higher risk employers

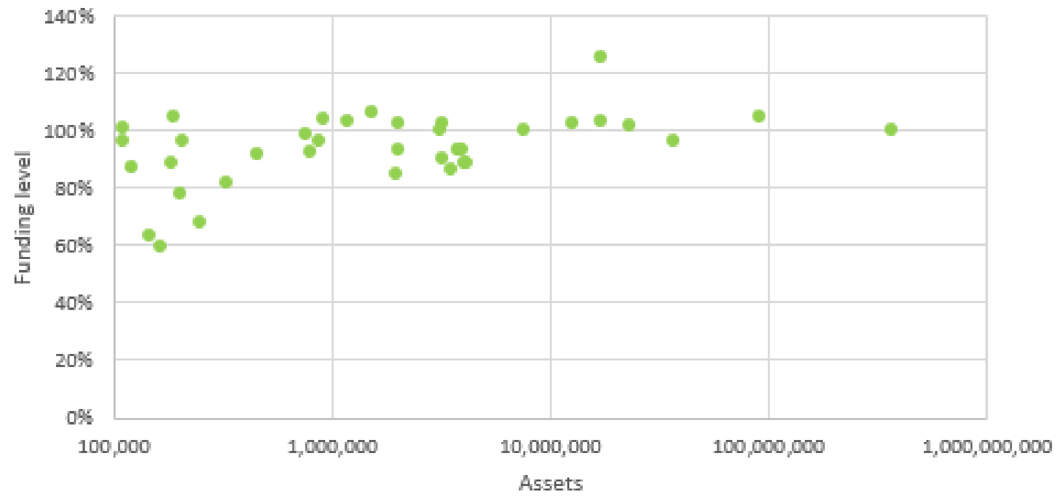
Employers with no tax raising powers or guarantee are typically viewed as 'higher risk'. If these bodies were to exit the Fund, their exit payment would be valued on the Fund's 'low risk' basis which allows for more prudence. At 31 March 2024, the aggregate position of the higher risk employers (on the Fund's low risk basis) is now 101% (compared to 72% at the 2022 valuation). Each individual employer position will be different, but in general will have improved, with many now c100% funded on the Fund's low risk basis (see chart opposite).

Impact on contributions

Employer contributions are set at the triennial funding valuation. If the current economic environment persists through to the 2025 valuation, there will likely be downward pressure on both primary and secondary contributions as a result of higher expectations of future investment returns and strong past-service funding positions.

The Fund may need to consider options for managing employer surplus ahead of the 2025 valuation. In particular, the Fund may need to consider how to manage high levels of surpluses and increased volatility and uncertainty in the economic environment within its funding and investment strategy, and effectively communicate its approach to employers.

Higher risk employer funding positions at 31 March 2024



It is important to understand the impact of improved funding for each employer to set appropriate funding plans

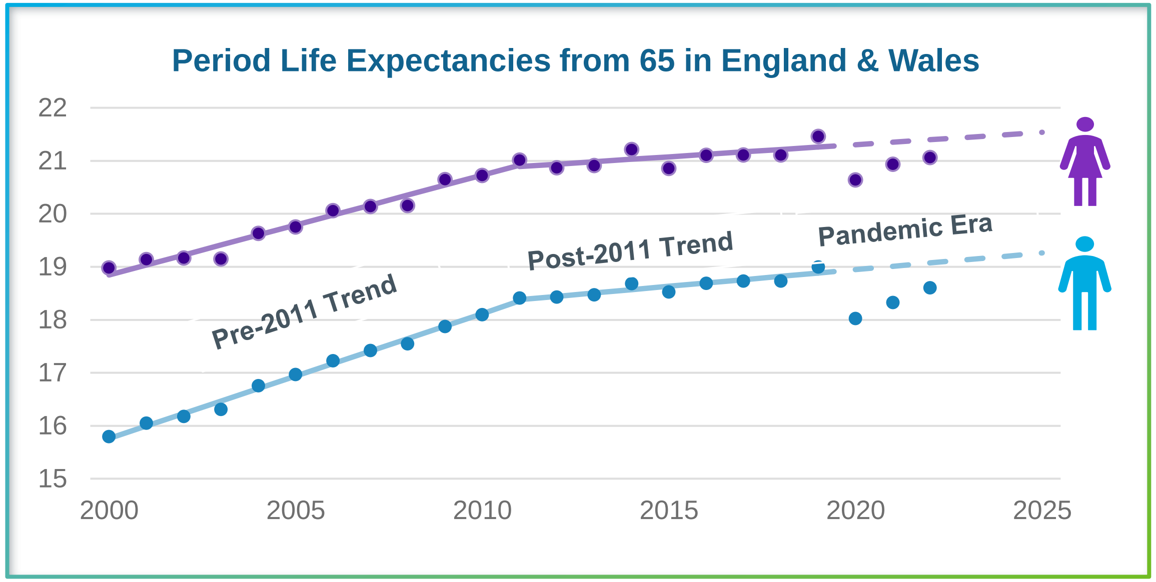
Key funding risks update

Longevity risk

Understanding demographic trends and setting appropriate mortality assumptions is key to managing longevity risk. The impact of an increase (or decrease) of 1 year of life expectancy increases (decreases) the funding position by around 4%. The Fund uses Club Vita longevity analytics which take account of the socio-economic profile and regional concentration of the Fund.

Recent longevity trends

- The Covid-19 pandemic led to increased deaths during 2020 and 2021. Excess deaths continued in 2022 (and into 2023) but the cause of excess deaths is less clear cut.
- The question facing pension funds now is: to what extent should we allow for this pandemic era data? Is this recent experience representative of the future or will it be short lived?
- Evidence for making an allowance for post-pandemic 'excess deaths' is now higher due to mortality experience in 2022 (and 2023).
- Club Vita estimates that during 2022, mortality was around 6% higher in England & Wales that we might have expected based on pre-Covid-19 mortality rates.
- However, the LGPS appears to be bucking the trend. Initial indications from Club Vita are that **excess mortality rates during 2022 were significantly lower for LGPS pensioners than for the overall population.**
- Analysis also shows that some areas of the UK have been hit harder during the pandemic and the post-pandemic period than others making it important to capture regional differences.



Source: CMI_2022 model. Life expectancies calculated using projected qx rates, using calibration data, with W_{2020} through W_{2022} set to 100% and S_{κ} set to 0%.

What can the Fund do to manage longevity risk?

- The Fund's longevity assumptions will be reviewed at the 2025 formal funding valuation. As part of this review the Fund should consider its beliefs around future improvements.
- With increased uncertainty on the lasting impact of the pandemic and future longevity, the Fund may choose to maintain a funding cushion to help manage uncertain outcomes.

Climate risk

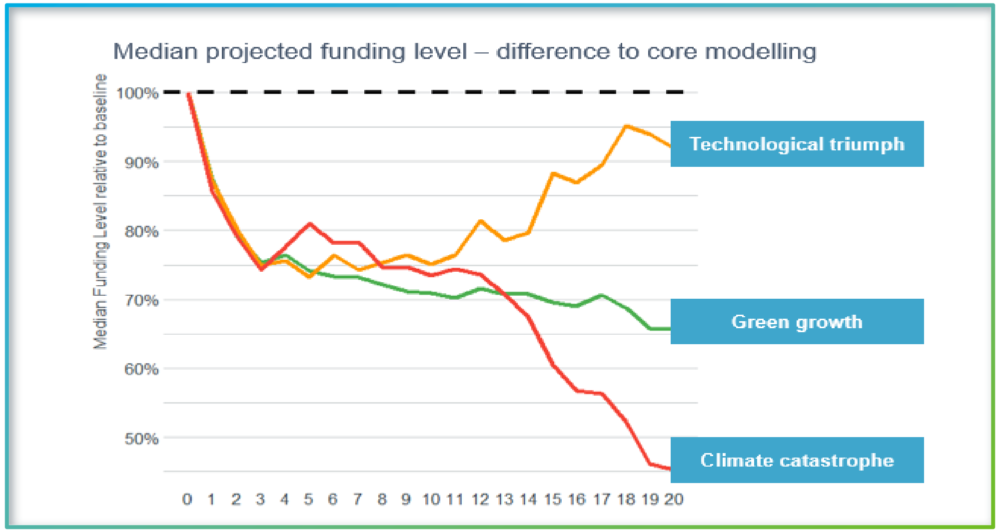
Climate change is now widely regarded as one of the main sources of risk for pension schemes, with potential implications for future inflation, investment returns and longevity. Scenario testing is an effective way for LGPS funds to test how resilient funding strategies are to climate risk.

2022 valuation scenario testing

- At the 2022 valuations, scenarios were chosen representing broad possibilities for how the world might respond to climate change – ‘green revolution’, ‘delayed transition’ and ‘head in the sand’.
- Despite imposing significant stresses and big increases in volatility, the impact on risk metrics of these three scenarios was quite modest.

Importance of considering ‘bad’ outcomes

- Climate change has the potential to make extreme outcomes more likely. It is therefore particularly important to consider catastrophic outcomes when assessing the impact of climate risk.
- New, ‘extreme’, scenarios (complementing the existing scenarios) are now available allowing the Fund to assess the impact of catastrophic outcomes on funding strategies.
- One example of catastrophic outcomes is a failure of global food supply resulting in an estimated 18-36% loss in global crop losses. Ultimate outcome could be trade wars, asset shocks and mortality impacts.
- The graph illustrates the impact of three outcomes: ‘Green growth’ considering collaborative regeneration, ‘Technology triumph’ looking at a tech-driven recovery and ‘Climate catastrophe’ – no action taken.
- Modelling narrative-based downside risks helps to better align the Fund’s funding strategy with climate beliefs.



What can the Fund do to manage climate risk?

- Ahead of the valuation the Fund should review its approach managing climate risk, including setting objectives, capturing varying views and beliefs of all stakeholders and agreeing scenarios to model.
- Output from modelling (core plus extreme scenarios) can be used to aid funding strategy and to stress test key risk metrics

Employer covenant

Although the recent improvement in funding is good news, employers continue to face a wide variety of challenges from the evolving economic, demographic and regulatory environment. Higher inflation, interest rates and pay awards are all putting pressure on organisations.

The Fund should continue to monitor employer covenant as part of its risk management framework.

The key covenant risks for each employer are:

- Ability and willingness to make contributions – are there competing demands on cash or any cashflow concerns?
- Likelihood of exit – are there any organisational or external pressures that may result in the employer exiting the LGPS?
- Outcome on exit – what is the outcome for the pension fund? Are there other secured or unsecured creditors?

Improved LGPS funding

Against the backdrop of improved funding positions funds may now be facing new questions and challenges from employers such as:

- Their approach to risk and investment strategy
- Employers exiting the scheme and possible exit credit payments
- Contribution flexibility

What can the Fund do to manage employer covenant risk?

- Whilst the recent improvement in funding will lessen the solvency risk posed to the Fund in potential outcomes on exit, it is important to consider all covenant risks to help manage other risks such as administration, cashflow and reputational.
- Ahead of the 2025 valuation, the Fund should monitor employer covenant risk to ensure appropriate risk categorisation and early engagement with employers.
- The Fund should consider its holistic approach to covenant and funding strategy, including consideration of how employer risk categorisation may impact funding strategy decisions.

2025 valuation planning

Preparing for the 2025 valuation

The analysis in the funding update section highlighted that the fundamental funding position of the Fund (amount of assets per £ of future pension to pay out) has not materially changed since the last valuation. However, there has been a significant change in the economic environment, which means that the Fund may now be facing new risks and opportunities at the 2025 valuation. The nature of these risks and opportunities will depend on the Fund's beliefs about what the new economic environment means for future investment returns. These are further discussed in our standalone paper[1] but can be broadly summarised as future returns will either be at a similar level to that assumed at the last valuation or, due to the change in interest rate environment, future returns will be higher.

Once the Fund has considered their beliefs in this area, with the valuation less than 12 months away, it should start to work through what these mean for its funding and investment strategy in the new economic environment. This will focus typically focus on four key areas:

1. Employer contributions
2. Investment strategy
3. Prudence levels
4. Surplus retention

Seek to balance employer affordability with long term sustainability

[1] www.hymans.co.uk/media/uploads/A_new_funding_era_in_the_LGPS.pdf

Preparing for the 2025 valuation

1. Employer contributions

Given the current cost pressures facing employers, there may be a desire for contribution rate reductions at the 2025 valuations. These expectations may also have been amplified by recent comments for employer advisors. However, the Fund will need to consider:

- **Difficulty of future increases -** The relative ease of reducing contributions versus increasing them. Even if a reduction is only for some short-term relief, it can quickly become the level that employer budgets could anchor on, meaning future required increases are harder to implement.
- **Long term cost of scheme -** What is a long-term stable cost of the LGPS, and are current contribution rates higher or lower than this? If an employer is already paying less than this cost, is it realistic to reduce further?
- **Intergenerational fairness -** Which generation are you being fair to by reducing contributions? The current generation have implicitly supported contribution rate increases over the last 20 years. Or does a reduction place too much risk of future contribution rate increases on future generations?
- **Stabilisation –** How does this interact with the Fund's contribution stability mechanism and are the employers committed to the long-term benefits of stability? Employers have been "underpaying" during the bad times during the last decade, whereas many may now be "overpaying" in the good times to deliver stable long-term contributions.

2. Investment strategy

The change in economic environment and your beliefs about future investment outlook will have a material impact on any changes you make to the investment strategy at the 2025 valuation.

For example, if you think your assets such as equities, property or infrastructure are not going to be able to achieve the market's current long-term risk-free rate of return (currently around 4% pa), should you be taking all that investment risk? The new economic and return environment may also offer opportunities to invest in different asset classes which haven't previously been considered.

Other aspects to consider with the investment strategy at the 2025 valuation are:

- Are there any opportunities to use the investment strategy to further increase the long-term stability of contribution rates for the long-term benefit of employers?
- Are there any opportunities to help reduce funding balance sheet volatility where it matters for a select group of employers?
- If contributions are reduced, what does this do to the cashflow profile of the Fund, and does it affect how the investments are used to manage cashflow?

Preparing for the 2025 valuation

3. Prudence levels

There is risk inherent with funding for a guaranteed pension amount which is inflation-linked and funded via investment in return-seeking assets. You can never have 100% certainty and must accept some element of risk in the funding strategy. The question is how much, i.e. how prudent are you going to be?

Each LGPS fund will have their own views on how prudent they want to be. And this can change over time. For example, at the 2019 valuation many Funds increased the prudence in the funding strategy in light of uncertainty around the benefit structure due to McCloud and the Cost Cap valuation.

At the 2025 valuation, the Fund should review the prudence levels in the funding strategy to explore:

- If the funding position remains strong, could this be used to increase prudence levels? This additional prudence could then be used to help manage any impact on contribution rates if there are poor funding outcomes in the future.
- Do the current market conditions, and increased levels of volatility and uncertainty, warrant mitigation and management by increasing prudence?

4. Surplus retention

An alternative approach to increasing prudence, is explicitly retaining any funding surplus before changes to the funding plan are granted (ie contribution rate reductions). For example, the Fund could:

- Only permit rate reductions if an employer is above a certain funding level threshold. The threshold would be higher than 100% funded.
- Require all open employers to pay at least their primary rate so future benefits are being adequately funded.
- Seek to retain a certain level of surplus in the long-term so both todays and future generations can benefit from the surplus. This would involve increasing the long-term funding target for employers to above 100%

Early engagement and planning for the 2025 valuation will be key to successful outcomes

What can the Fund do ahead of the 2025 valuation to prepare?

Risk management

There may be individual sources of uncertainty and volatility in the funding plans that could warrant explicit management or mitigation via the funding and investment strategy. Examples could include:

- **Inflation** being higher and/or remaining elevated longer than expected (LGPS benefits are index-linked so this would increase the cost of benefits).
- **Salary increases** being higher than expected would increase the value of those benefits still linked to final salary at retirement. Conversely, lower than expected salary increases would reduce the Fund's contribution income and potentially affect the cashflow position and management of it.
- **Longevity** being materially different from current expectations. Higher than expected increases in longevity would put upward pressure on the Fund's liabilities. The Fund could also be exposed to a deterioration in longevity if it is symptomatic of an unhealthier population, which would increase the occurrence of ill-health retirements and death-in-service, both of which typically result in funding strains.

The Fund should consider the risks inherent in their funding and investment strategies and consider the implementation of risk management tools to seek to hedge some or all of the risk.

Key actions

- **Start planning** – it is important to start conversations with stakeholders well ahead of the valuation to plan effectively.
- **Monitor employer funding and covenant risks** and engage early with higher risk employers, or those with specific circumstances (eg approaching exit).
- **Seek to engage with all employers** in advance of the valuation to build up the appropriate messaging around funding in a surplus environment and any changes in policies.
- **Consider options for funding and investment**, such as prudence levels, maintaining a funding 'buffer' or changing investment risk (in additional to potential changes to contributions).
- **Carry out contribution modelling** for the secure, long-term employers to inform budget setting and financial planning

Summary and next steps

Risk monitoring and valuation planning best practice

As we approach the 2025 valuation, LGPS funds are now facing new challenges within a new economic environment. Planning and stakeholder engagement will be key to successful outcomes and funds should continue to refine their approach to managing risk within this evolving landscape.

Key considerations and next steps

Funding: continue to monitor the funding position and understand the key drivers of change. Consider the messaging of the funding position and what this means for different stakeholders.

Review funding and investment strategy: carry out modelling of longer-term secure employers and consider investment strategy options and implications of climate risk.

Employers: monitor employer funding and seek to engage early with higher risk employer or those approaching exit. Consider employer covenant as a factor within the risk framework and where employer contribution flexibility may be afforded.

Risk monitoring and mitigation: consider the Fund’s views on inflation, longevity climate risks, and whether additional prudence may be required in future assumptions or funding plans. Carry out modelling to understand the impact of future inflation (and potential contribution reductions) on the Fund’s future cashflows.

Beliefs: identify your Fund’s beliefs about what the current economic environment means for future investment returns and consider what that means for contribution rates, investment strategy, prudence levels and any surplus retention.

Surplus management: if you are in surplus, develop the Fund’s policy on surplus management and consider the best use of funding levers at the 2025 valuation.

Valuation strategy and planning: before 31 March 2025

Strategy

- Beliefs setting including views on economic outlook, climate & longevity
- Council contribution analysis and setting
- Assumptions analysis and setting
- Multiple investment strategies analysis

Stakeholders

- Committee knowledge assessment and training
- Employer engagement and 'early warning'
- Covenant assessments
- Consult on changes to the FSS

Operational

- Agreeing timetable/plan
- Data cleansing
- Employer 'housekeeping' and database
- Policy/FSS reviews

Earlier planning allows more time for engagement, analysis and decision-making

Appendices

APPENDIX 1

Data

Membership data

The membership data underlying the figures in this report was supplied by the fund for the purpose of the valuation at 31 March 2022 and is summarised below:

31 March 2022				
	Number	Average age	Accrued benefit (£000)	Payroll (£000)
Actives	20,785	53.0	64,572	388,171
Deferred	39,040	53.1	47,094	
Pensioners	17,612	69.9	84,468	

The membership is assumed to evolve over time in line with the demographic assumptions described in the Funding Strategy Statement. Please see Appendix 4 for details of the roll-forward methodology which includes the estimated changes in membership data which have been allowed for.

Cashflows since the valuation at 31 March 2022

We have allowed for the following cashflows in estimating the assets and liabilities at 31 March 2024. Cashflows are assumed to be paid daily. Contributions are based on the estimated payroll, certified employer contributions (including any lump sum contributions) and the average employee contribution rate at 31 March 2022. Benefits paid are projections based on the membership at 31 March 2022.

Cashflows since the valuation at 31 March 2022

We have allowed for the following cashflows in estimating the assets and liabilities at 31 March 2024. Cashflows are assumed to be paid daily. Contributions are based on the estimated payroll, certified employer contributions (including any lump sum contributions) and the average employee contribution rate at 31 March 2022. Benefits paid are projections based on the membership at 31 March 2022.

Estimated cashflows (£000)	31 March 2022 to 31 March 2024
Employer contributions	178,018
Employee contributions	53,171
Benefits paid	218,237

Investment returns since the valuation at 31 March 2022

Investment returns are based on actual returns where available and index returns otherwise.

	Actual / Index	From	To	Return
Whole fund	Actual	1 April 2022	31 March 2024	7.25%

APPENDIX 2

Assumptions

Financial assumptions

The financial assumptions used to calculate the liabilities are detailed below. For further details please see the Funding Strategy Statement.

Assumption	31 March 2022	31 March 2024
Funding basis	**Ongoing**	
Discount rate methodology	Expected returns on the Whole Fund strategy over 17 years with a 70% likelihood	
Discount rate (% pa)	4.6%	6.6%
Pension increase (% pa)	2.7%	2.4%
Salary increases* (% pa)	2.7%	2.4%

*Salary increases are assumed to be equal to pension increases, plus an additional promotional salary scale.

Demographic assumptions

Demographic assumptions are set out in the Funding Strategy Statement. All demographic assumptions, including longevity assumptions, are the same as at the most recent valuation at 31 March 2022.

Life expectancies from age 65, based on the fund's membership data at 31 March 2022, are as follows. Non-pensioners are assumed to be aged 45 at that date.

	Ongoing basis	
	Male	**Female**
Pensioners	22.3	24.9
Non-pensioners	23.0	26.3

APPENDIX 3

Technical information

Funding update methodology

The last formal valuation of the fund was carried out as at 31 March 2022. The results in this report are based on projecting the results of this valuation forward to 31 March 2024 using approximate methods. The roll-forward allows for

- estimated cashflows over the period as described in Appendix 1;
- investment returns over the period as described in Appendix 1;
- changes in financial assumptions as described in Appendix 2;
- estimated additional benefit accrual.

The CARE, deferred and pensioner liabilities at 31 March 2024 include a total adjustment of 11.4% to reflect the difference between actual September CPI inflation values (up to 30 September 2023) and the assumption made at 31 March 2022. The adjustment for each year's actual inflation is applied from 31 October that year, cumulative with prior years' adjustments, which may lead to step changes in the funding level progression chart.

In preparing the updated funding position at 31 March 2024 no allowance has been made for the effect of changes in the membership profile since 31 March 2022. The principal reason for this is that insufficient information is available to allow me to make any such adjustment. Significant membership movements, or any material difference between estimated inputs and actual ones, may affect the reliability of the results. The fund should consider whether any such factors mean that the roll-forward approach may not be appropriate.

No allowance has been made for any early retirements or bulk transfers since 31 March 2022. There is also no allowance for any changes to Local Government Pension Scheme (LGPS) benefits except where noted in the formal valuation report or Funding Strategy Statement.

Sensitivity of results to assumptions

The results are particularly sensitive to the real discount rate assumption (the discount rate net of pension increases) and the assumptions made for future longevity.

If the real discount rate used to value, the accrued liabilities was lower then the value placed on those liabilities would increase. For example, if the real discount rate at 31 March 2024 was 1.0% pa lower, then the liabilities on the Ongoing basis at that date would increase by 19.0%.

In addition, the results are sensitive to unexpected changes in the rate of future longevity improvements. If life expectancies improve at a faster rate than allowed for in the assumptions then, again, a higher value would be placed on the liabilities. An increase in life expectancy of 1 year would increase the accrued liabilities by around 3-5%.

APPENDIX 4

Economic Scenario Service (ESS)

The ESS uses statistical models to generate a future distribution of year-on-year returns for each asset class e.g. UK equities. This approach is also used to generate future levels of inflation (both realised and expected). The ESS is also designed to reflect the correlations between different asset classes and wider economic variables (e.g. inflation).

In the short-term (first few years), the models in the ESS are fitted with current financial market expectations. Over the longer-term, the models are built around our long-term views of fundamental economic parameters e.g. equity risk premium, credit-spreads, long-term inflation etc.

The ESS is calibrated every month with updated current market expectations (a minor calibration). Every so often (annually at most), the ESS is updated to reflect any changes in the fundamental economic parameters as a result of change in macro-level long-term expectations (a major calibration). The following table shows the calibration (for a selection of asset classes) at 31 March 2024.

Time period	Percentile	Asset class annualised total returns								Inflation/Yields		
		UK Equity	Developed World ex UK Equity	Emerging Markets Equity	Listed Infrastructure Equity	Private Equity	Property	Multi Asset Credit (sub inv grade)	Absolute Return Bonds (inv grade)	Inflation (CPI)	17-year real yield (CPI)	17-year yield
10 years	16th	1.8%	1.5%	-0.5%	1.1%	0.9%	1.6%	4.0%	3.3%	1.0%	0.2%	3.2%
	50th	7.8%	7.7%	8.0%	7.2%	11.8%	6.6%	5.9%	4.7%	2.6%	1.4%	4.6%
	84th	13.8%	13.9%	16.5%	13.2%	22.7%	11.9%	7.7%	6.2%	4.2%	2.7%	6.3%
20 years	16th	3.3%	3.1%	1.7%	2.8%	4.0%	3.0%	4.8%	3.2%	0.8%	-0.5%	1.6%
	50th	7.9%	7.7%	8.0%	7.3%	11.7%	6.7%	6.4%	4.8%	2.4%	1.2%	3.5%
	84th	12.4%	12.5%	14.5%	11.9%	19.5%	10.7%	8.0%	6.6%	4.0%	2.9%	6.1%
40 years	16th	4.0%	3.9%	3.0%	3.4%	5.6%	3.4%	4.5%	2.6%	0.8%	-0.7%	1.2%
	50th	7.6%	7.4%	7.7%	7.0%	11.3%	6.4%	6.2%	4.5%	2.1%	1.2%	3.4%
	84th	11.2%	11.1%	12.6%	10.8%	17.1%	9.8%	8.3%	6.8%	3.7%	3.1%	6.2%
	Volatility (1yr)	17%	18%	25%	18%	30%	15%	6%	3%	3%	-	-

APPENDIX 5

Reliances and limitations

This paper is addressed to Oxfordshire County Council as Administering Authority to the Oxfordshire Pension Fund. It has been prepared in our capacity as actuaries to the Fund and is solely for the purpose of discussing funding and risk monitoring ahead of the 2025 valuation. It has not been prepared for any other purpose and should not be used for any other purpose.

The results in this paper are wholly dependent on the valuation data provided to us for the 2022 valuation and the assumptions that we use in our calculations. The reliances and limitations that applied to that valuation apply equally to these results. The results of the valuation have been projected forward using approximate methods. The margin of error in these approximate methods increases as time goes by. The method may not be appropriate if there have been significant data changes since the previous formal valuation (for example redundancy exercises, significant unreduced early retirements, ill health retirements and bulk transfers). The methodology assumes that actual experience since the valuation at 31 March 2022 has been in line with our expectations.

The data used in this exercise is summarised in Appendix 1. Data provided for the purposes of the formal valuation at 31 March 2022 was checked at the time for reasonableness and consistency with other sources. Data provided since then (eg actual investment returns) has been used as-is. The data is the responsibility of the Administering Authority, and the results rely on the data.

The methodology underlying these calculations mean that the results should be treated as indicative only. The nature of the fund's investments means that the surplus or deficit identified in this report can vary significantly over short periods of time. This means that the results set out should not be taken as being applicable at any date other than the date shown.

The Administering Authority is the only user of this advice. Neither we nor Hymans Robertson LLP accept any liability to any party other than the Administering Authority unless we have expressly accepted such liability in writing. The advice or any part of it must not be disclosed or released in any medium to any other third party without our prior written consent. In circumstances where disclosure is permitted, the advice may only be released or otherwise disclosed in its entirety fully disclosing the basis upon which it has been produced (including any and all limitations, caveats or qualifications).

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The following Technical Actuarial Standards are applicable in relation to this advice, and have been complied with where material and to a proportionate degree:

- TAS100 – Principles for technical actuarial work
- TAS300 – Pensions

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