East Sussex Pension Fund

Investment strategy Review

July 2023

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Contents

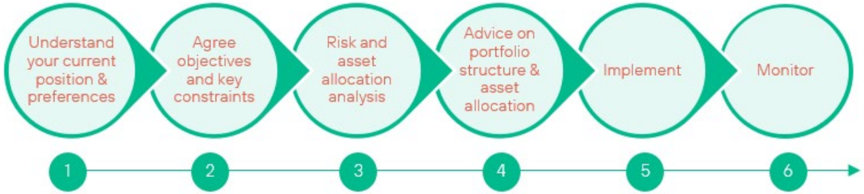
Introduction

Addressee

- This report is addressed to the East Sussex County Council ("the Council") as Administering Authority of the East Sussex Pension Fund ("the Fund").

Background

- The Council has engaged Isio to undertake a detailed review of the Fund's target investment strategy in order to quantify the inherent risks and to consider options for the evolution of the asset allocation. As well as high level asset allocation, Isio has been asked to focus on certain key specific areas of the portfolio, and to provide recommendations on how these should evolve.
- The chart below highlights the key stages in our approach for assessing overall investment strategy. This paper includes stages 1-4.



Scope of Report

- This report provides a detailed review of the Fund's current investment strategy, asset allocation and investment structure, including:
    - Portfolio risk/return characteristics;
    - The projected evolution of the funding position;
    - An overview of the Fund's cash flow requirements, asset income and liquidity profile; and how these are expected to evolve;
    - An overview of potential asset class opportunities which we believe could be attractive for the Fund;
    - Analysis of alternative strategies which we believe may be better aligned to the Fund's objectives.
- We have integrated environmental, social and governance ('ESG') considerations throughout our review, including in our assessment of how the strategy could evolve going forwards. Such considerations have been evaluated with the Fund's ESG policies in mind.

Objectives

Financial Objectives

- The Fund's objectives, as outlined in the draft 2023 Funding Strategy Statement, are:
  - Ensure that pension benefits can be met as and when they fall due over the lifetime of the Fund;
  - Ensure the solvency of the Fund;
  - Set levels of employer contribution rates to target a 100% funding level over an appropriate time period and using appropriate actuarial assumptions, while taking into account the different characteristics of participating employers;
  - Build up the required assets in such a way that employer contribution rates are kept as stable as possible, with consideration of the long-term cost efficiency objective; and
  - Adopt appropriate measures and approaches to reduce the risk, as far as possible, to the Fund, other employers and ultimately the taxpayer from an employer defaulting on its pension obligations.
- These objectives are to deliver a return that improves the funding level over time (with the aim of achieving future lower employer contribution rates in the long term), with as little volatility as possible (to maintain the stability of contributions), and also to maintain sufficient assets to meet liabilities. The assumptions underlying the Actuary's funding basis are important factors in determining the return requirement. As the Fund grows, it is also be important to ensure that affordability, relative to sponsor budgets (which are not growing at the same rate as the Fund) is maintained.

Evolution

- The Fund is open to new members and is growing due both to interest accruing on past service liabilities and new liability accrual. The liabilities are also gradually 'maturing' (the proportion of pensioner members is growing), which changes the anticipated cashflow profile of the Fund over time. Ultimately more cash will be paid out than is received in cash contributions, making income from the investments an increasingly important consideration.

ESG

- Alongside the funding objectives, the Fund has clear policies in relation to ESG issues which are summarised in the Statement of Responsible Investment ("RI") Principles. These are as follows:
  1. Apply long-term thinking to deliver long-term sustainable returns
  2. Seek sustainable returns from well-governed assets.
  3. Use an evidence-based long term investment appraisal to inform decision-making in the implementation of RI principles and consider the costs of RI decisions consistent with fiduciary duties.
  4. Evaluate and manage carbon exposure in order to mitigate risks to the Fund from climate change.
- It is important to ensure the strategy is aligned with these principles and that these are considered in any changes being agreed.

What return is required?

What Return is Required?

- The Fund Actuary, Barnet Waddingham, produced an Actuarial Funding Update Report as at 31 March 2023. This showed a funding position of 121%. This is a broadly similar position to the formal Actuarial Valuation Date at 31 March 2022 (when the funding level was 123%.)
- The discount rate used to value the liabilities as at 31 March 2023 was 4.8% p.a.
- The discount rate assumption is derived based upon the absolute level of returns that the asset portfolio is expected to achieve, with a level of actuarial prudence applied.
- As at the date of the modelling in this report, 31 March 2023, the expected return of the Fund's investment strategy is 7.8%. This is measured on a best estimate basis and is in excess of the discount rate (4.8% p.a.).
- The investment returns quoted, along with the Actuarial discount rate are long term (10 yr) assumptions. They do not consider risks such as geopolitical risk or other external factors which could negatively impact outcomes.
- The difference between the expected return of 7.8% p.a. and required return of 4.8% reflects the prudence in the Actuarial funding assumptions. If the expected return is achieved, this should support a potential move towards lower contribution rates in future.
- Long dated UK government bonds now 4.5% and investment grade corporate bonds are yielding c6%. The latter yield is in excess of the discount rate.
- Given the significant surplus achieved and margin between the expected and required return, we believe, if desired, there is scope to reduce overall risk whilst still maintaining a sufficient level of return to satisfy the Actuarial assumptions.
- Any change in the expected return will need to be discussed in detail with the Scheme Actuary prior to implementation to ensure this does not materially impact the funding methodology.

Current strategy analysis

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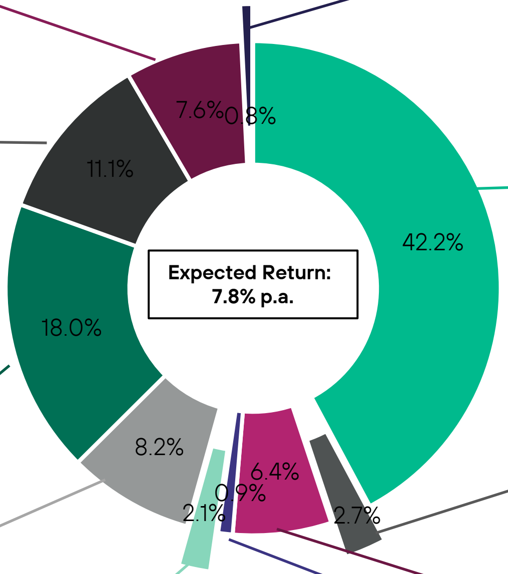
Asset allocation – as at 31 March 23

Key:
Segments that are pulled out in the pie chart are not in the current strategic allocation and are earmarked for investment elsewhere.

Property (8%) ***[11% target]***
Schroder: £349m (8%)

Cash (1%) ***[0% target]***
Cash account: £36m (1%)

Infrastructure (11%) ***[11% target]***
UBS: £36m (1%)
Pantheon Secondaries: £81m (2%)
M&G: £53m (1%)
ATLAS: £101m (2%)
IFM: £234m (5%)



Global Equity (42%) ***[40% target]***
UBS Osmosis – resource efficient: £237m (5%)
Longview Global: £556m (12%)
WHEB Active Impact: £222m (5%)
Wellington Active Impact: £222m (5%)
Storebrand Global ESG Plus Fund: £501m (11%)
Baillie Gifford Paris Aligned Global: £187m (4%)

Absolute Return (18%) ***[17% target]***
Newton: £341m (8%)
Ruffer: £479m (11%)

Corporate Bonds (3%) ***[0% target]***
M&G: £124m (3%)

Diversified Credit (6%) ***[10% target]***
M&G Alpha Opportunities: £293m (6%)

Private Equity (8%) ***[6% target]***
HarbourVest: £180m (4%)
Adams Street: £196m (4%)

Index-Linked Gilts (2%) ***[0% target]***
UBS – Index Linked Gilts: £94m (2%)

Private Credit (1%) ***[5% target]***
M&G Real Estate Debt: £43m (1%)

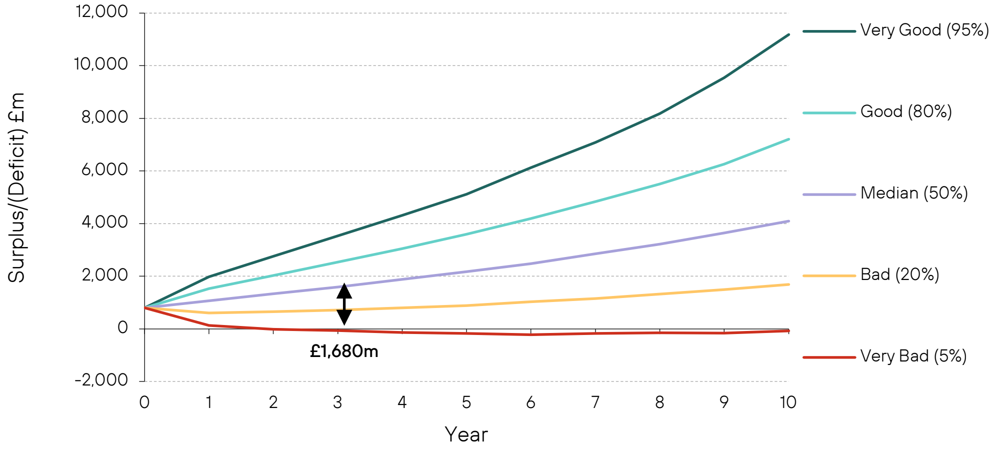
Source: Investment managers at 31 March 2023.

Investment strategy building blocks - target allocation

Mandate	Manager(s)	Strategic Allocation	Growth (45.5%)	Defensive Growth (50.5%)	Income (11.0%)	Inflation Protection (18.5%)
Global Equity	Storebrand, Wellington, UBS, Baillie Gifford, Longview & WHEB	40.0%	●			
Private Equity	Adam Street & Harbourvest	5.5%	●			
Diversified Growth	Newton & Ruffer	17.0%		●		
Balanced Property	Schroders Property	7.0%		●	●	◐
Long Inflation Linked Property	Schroders Property	4.0%			●	●
Infrastructure Equity	Atlas, IFM, M&G, Pantheon and UBS	11.0%		●		●
Private Credit	M&G Real Estate	5.0%		●		
Diversified Credit	M&G Alpha Opportunities	10.5%		●		

Funding trajectory

Current Funding Trajectory



Funding Position – 31 March 2023	
Discount rate	4.8%
Current surplus	£795m
Current funding level	c.121%

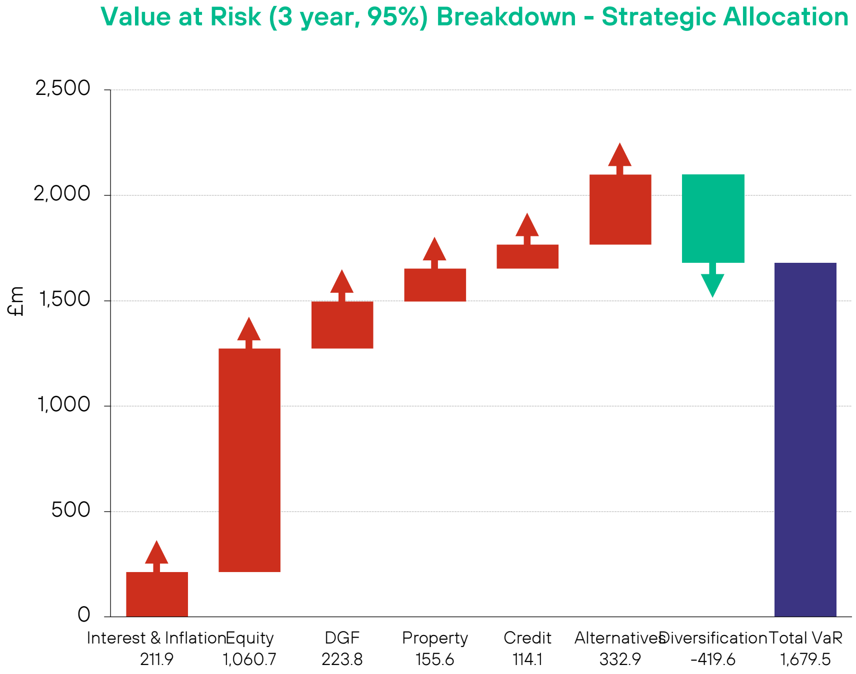
Source: Barnett Waddingham, Isio calculations.

Forecast Funding Position – 3 Years' Time	
Expected (deficit) / surplus	£1,599m
Expected funding level	c. 139%
Estimated Funding Deficit 1 in 20 chance (5%)	(£81m)

Comments

- The central expectation is for the funding position to continue to improve and increase gradually over time – the expected investment return is higher than the interest accruing on liabilities.
- Based on the estimated 31 March 2023 position, we expect the Fund to be in a surplus of c. £1,600m in 3 years' time (up from c. £795m at the end of March 2023). Ultimately any future surplus could be used to bring down the cost of the Fund to the employers.
- The chart highlights the degree of variation (both upside and downside) that the Fund is exposed to by the current investment strategy. This volatility could have a material impact on the funding position and the future cash funding requirements.
- Given the investment risk in the current strategy, there is a 1 in 20 chance that the surplus could by eliminated and a deficit of c.£80m or more could arise in 3 years' time
- Given the current strong funding position, we believe there is scope to reduce investment risk to better secure the current strong funding position and lessen the impact of any potential downside scenarios, essentially (narrowing the range of potential outcomes).
- Reducing investment risk, and narrowing the range of potential return outcomes, would place the Fund in a strong position.
- We believe this can be done whilst still targeting sufficient return to satisfy the Actuarial basis.

Risk analysis



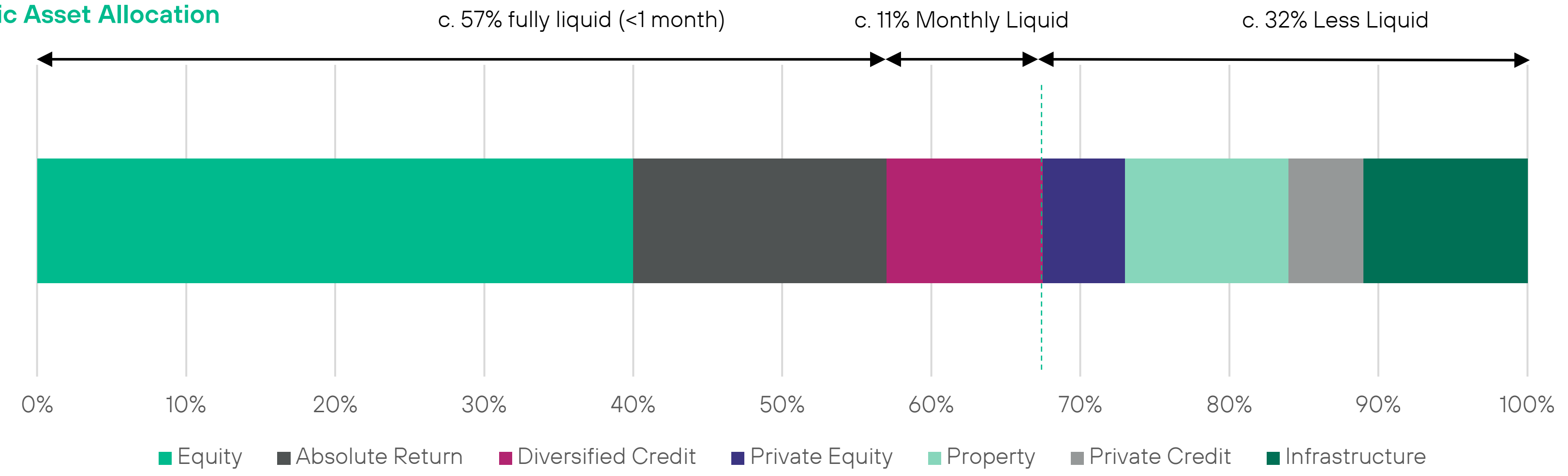
Source: Barnett Waddingham, Isio calculations.

Equity and inflation are the most significant risks

- The chart to the left illustrates the overall level, and composition of investment risk in the strategic asset allocation, as measured by the 1 in 20, 3 year Value at Risk ("VaR"). The VaR represents the difference in the funding in three years' time between the expected outcome and a 1 in 20 outcome.
- This analysis does not consider risks such as geopolitical risk or other external factors which could negatively impact outcomes.
- The total investment risk (3 year, 1 in 20 VaR) is c.£1.7bn, i.e. there is a 1 in 20 chance that the Fund could be c.£1.7bn or more behind (or ahead) of the expected position in 3 years time.
- The Fund's key risk is equity exposure. The c.40% strategic allocation to listed equities (and 8% allocation to private equity) means that a fall in equity valuations would result in a material decrease in the Fund's assets.
- The risk from inflation is due to the majority of the pension benefits in the Fund being directly linked to inflation. This link is uncapped to rises in inflation.
- We believe the Fund should be aware of these risks and consider how these are managed as part of any strategic changes. In particular, we believe it will be beneficial for the Fund to
  - Continue to increase the Fund's exposure to assets which provide a direct link to inflation;
  - Continue to focus on building exposure to assets with a contractual payoff profile which offer diversification from listed equity within the growth portfolio.

Liquidity profile

Strategic Asset Allocation



Source: Northern Trust with Isio calculations.

- Based on the target strategic allocation, the asset strategy retains significant liquidity, with an estimated 68% of assets (c £3.1bn) able to be liquidated within a month and a significant proportion of these in a matter of days. The remaining assets are well diversified across a range of less liquid asset classes. Whilst the Fund is large, much of the portfolio could be liquidated relatively quickly with limited market impact. We cannot currently envisage any circumstances where the Fund should need this level of liquidity or flexibility.
- We believe the Fund is able to meet the expected short and long term cashflow requirements as and when they arise (see overleaf) and the Fund does have some scope to invest more in less liquid assets if desired, and if there is a strong return premium for doing so..
- We would typically recommend a practical limit of c. 40% to less liquid asset classes to enable effective liquidity management. We note the outcome of the current pooling consultation may mandate the Fund to invest more in less liquid asset classes e.g. Private Equity and this should be considered as part of any change.

Cashflow profile (1)

Long term cashflow

- The Fund is expected to have cash outflows over the coming years. There are three core elements to this:
  - Monthly pension payroll (which is relatively predictable);
  - Lump sum / death grant member payments (there is a degree of uncertainty over such benefits as they are more variable in nature);
  - Expenses e.g., manager fees, transaction costs and miscellaneous charges.
- The Fund Actuary has shared details of the Fund's expected long term pension payments. We note that these do not make any allowance for any transfers out of the Fund – historically the magnitude of these has been small (though a bulk transfer could change this).
- The analysis indicates that the contributions are expected to largely offset the outgo, though there is likely to be a small shortfall each year. There are some factors that could increase this and we consider these overleaf.
- The shortfall can currently largely be met using investment income from existing mandates (property and Infrastructure income) - expected to be c.£26m next year.
- There is variability in timing of receiving investment income and paying pension benefits and this is met from any existing cash balances/ by rebalancing other liquid mandates. The Fund can draw income from other mandates (though this has not been required to date).

Liability Profile

Cashflows (£m)	Year 1	Year 2	Year 3	Year 4	Year 5
Income	**£115m**	**£119m**	**£124m**	**£129m**	**£134m**
Employer contributions	£83m	£86m	£89m	£93m	£96m
Employee contributions	£33m	£34m	£35m	£36m	£38m
Outgo	**(£141m)**	**(£148m)**	**(£153m)**	**(£158m)**	**(£165m)**
Pension Payments	(£141m)	(£148m)	(£153m)	(£158m)	(£165m)
Net Cashflow	**(£26m)**	**(£29m)**	**(£29m)**	**(£29m)**	**(£31m)**

Source: Barnett Waddingham, Isio calculations, Investment managers. For these purposes, contributions have been assumed to rise at 3.9% p.a.

Cashflow profile (2)

Short term Cashflow

- We understand in the short term the forecast contributions and benefit payments will alter as follows:
  - The change in employers contribution rates will reduce income by circa £370k a month
  - The Actuary has assumed a pay award of 5% increases income by around £690k per month
  - Pension increases (due to inflation) will increase outgoings by £920k per month
  - This gives a net deficit in the short term of £600k deficit each month or £7.2m per year.
- Until a pay award is agreed, the short term shortfall is expected to be higher at £1.2m-£1.3m per month. This could increase the shortfall over Year 1 to c£42m (assuming no agreement is reached).
- The Fund has sufficient liquidity to deal with this, but the position should be monitored to determine whether additional income should be drawn from other mandates (particularly those that are overweight vs target).
- We propose the amounts needed in the short term are met efficiently with ongoing cashflow where possible, and beyond that from rebalancing other liquid mandate allocations (e.g. equities are currently overweight relative to target.).
- It will be beneficial for the Fund to agree a short term cashflow policy to manage this.

Private Equity cashflows

- Cashflows from the Private Equity holdings can vary in amount and timing, Forecasted cashflows from Adams Street and Harbourvest are below. These amounts are in addition to the asset income shown on the previous slide and can help bridge the short term shortfall.

Year	Harbourvest capital call (£m)	Harbourvest distribution (£m)	Adams Street capital call (£m)	Adams Street distribution (£m)	PE Net cashflow (£m)
2023	(25.4)	24.0	(16.1)	75.2	57.7
2024	(32.0)	51.9	(12.0)	67.1	75.0
2025	(21.2)	66.1	(9.0)	59.5	95.4
2026	(14.6)	57.5	(4.1)	50.9	89.7
2027	(9.2)	51.2	(3.0)	47.3	86.3
2028	(3.2)	40.7	(1.5)	41.1	77.1
2029	(1.9)	35.6	(1.0)	35.3	68.0
2030		31.5	(0.5)	27.2	58.2
2031		28.8	(0.3)	19.8	48.3
2032		22.0	(0.1)	13.0	34.9
2033		16.6			16.6
2034		10.3			10.3
2035		6.5			6.5
2036		2.4			2.4

Source: Adams Street, Harbourvest. Harbourvest values were provided in USD and have been converted to GBP using a conversion rate of 0.807328

2021 strategy review and previously agreed direction of travel

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Previously agreed direction of travel

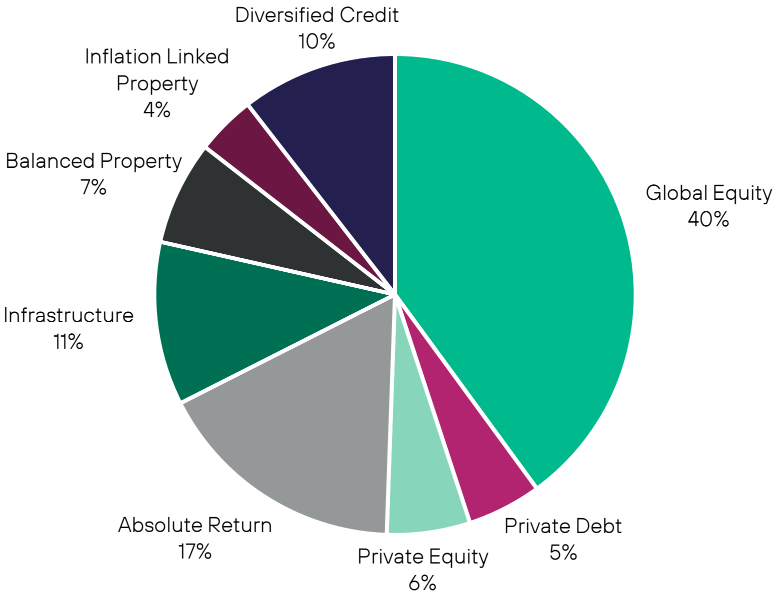
(July 2021)

Strategic change	Strategic rationale	Previously agreed Recommendation	Key considerations based on current market environment
Increase exposure to assets with a direct link to inflation	Rising inflation was highlighted as a key risk to the Fund given the liability structure, and increasing the allocation to assets with a direct and indirect inflation linkage would help address this risk.	➢ Increase allocation to infrastructure equity and inflation-linked property to harvest yield with inflation linkage	• **Inflation risk remains and the outlook is volatile** • **Index-linked gilt yields now +c. 1.0% pa (vs -2.5% pa in 2021)** • **Property valuations under pressure due to rising interest rates and muted economic outlook in the UK**
Increase exposure to less liquid assets	Given the Fund's long term horizon, and the overall level of liquidity in the asset portfolio, it was agreed there was scope to target less liquid opportunities.	➢ Introduce private debt allocation to harvest illiquidity premium ➢ Implement infrastructure equity and inflation-linked property allocations (noted above)	• **Funding position significantly improved and requirement to drive returns not as high** • **Private debt remains a good opportunity given current market dynamics** • **Potential for mandated higher Private Equity allocation make increase less liquid assets**
Increase diversification in portfolio	• Diversify the sources of growth exposure at a strategy and manager level. • Introduces a greater flexibility for managers and mandates – especially in credit to allow a broader set of the credit markets to be accessed. • Corporate bonds offering very low yield.	➢ Switch from low yielding investment grade corporate bonds to a more flexible multi asset credit mandate (implementation delayed as Pool has not yet launched fund). ➢ Implement infrastructure equity, inflation-linked property and private debt allocation to improve diversification.	• Investment grade corporate bonds fallen in value and yields have increased making prospective returns much more attractive. • Multi asset credit mandates have increased yields and remain well placed to navigate volatility through active management, including views on rates. • **The timing of change is now not as compelling as it was.**
Increase alignment to the Fund's Responsible Investment policy	The Fund has made strong progress incorporating ESG considerations into its investment strategy and should continue to build on this.	➢ Revise equity portfolio to implement further ESG focused mandates	• The market continues to evolve and provide alternatives in this space. Osmosis index implemented.

Previously agreed direction of travel
(July 2021)

- The revised strategy agreed in 2021 was expected to deliver a slightly higher expected return with a level of downside risk broadly similar to the previous strategy.
- It was expected that the revised strategy would be implemented in a phased manner over the following 12-18 months, depending on the availability of assets via the ACCESS pool and the timing to deploy capital into less liquid mandates. To date the Fund has implemented the following:
  - Equity allocations via the ACESS Pool through the Baillie Gifford Global Alpha Paris Aligned Fund and the UBS Osmosis Resource Efficient Fund.
  - Increased allocation to infrastructure was implemented via a mandate with IFM which currently sits off pool.
  - The multi-asset credit fund was selected, with BlueBay agreed as the preferred fund. This has not yet been implemented as the Fund is waiting on the ACCESS pool launching this fund which has taken quite some time.
- The previously agreed allocations to inflation-linked property and private debt are yet to be implemented. The ACCESS pool does not currently offer products in these areas.

Agreed Target Strategy – July 2021



Current market conditions

Recent market conditions

- Market conditions over 2022 and 2023 year-to-date have been extremely volatile, in part due to surging inflation and a significant rise in global interest rates following Russia's invasion of Ukraine.
- Over the last year, gilt yields have risen as global central banks have raised interest rates. Increasing pessimism around the global economy, and the likelihood of a 'hard landing' to monetary tightening, led to volatility in risk assets. These factors combined to drive negative returns over 2022 for credit, equity and gilt markets.
- Since the beginning of the 2023, investors have regained confidence in markets, hoping that inflation will slow and central banks will moderate interest rate rises. This sentiment is reflected in positive year-to-date returns of all major asset classes (except for gilts which have sold off as yields have risen).
- The real yield available gilts has moved dramatically. Purchasing a 20 year index linked gilt in 2021 would have delivered an ongoing yield of RPI-2.5 % p.a. The same gilt now will deliver a return of RPI + 1.0% p.a. The 15 year fixed gilt now yields 4.5% vs 0.5% at the start of 2021. This is a dramatic shift.
- The yield available on a broad range of fixed income investments has increased correspondingly. The yield on UK Investment Grade Corporate Bonds has increased from c.2.0% in July 21 to c.6.0% today (chart on bottom right).
- UK property valuations are under pressure due to rising interest rates and a muted economic outlook in the UK.

Market Returns (31 July 2021 to 31 May 2023)

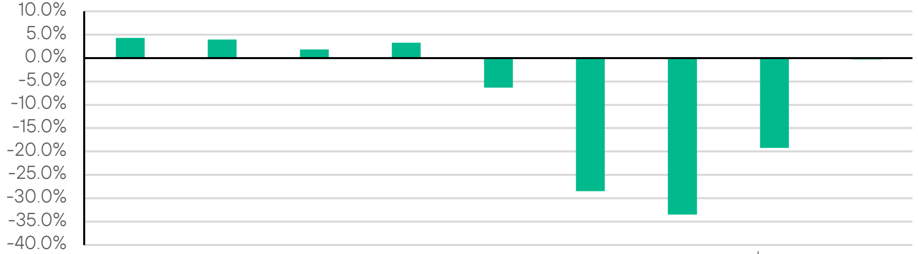
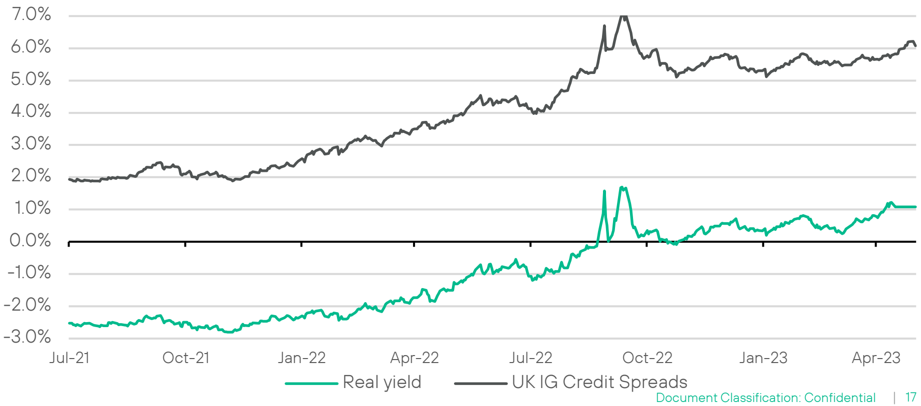


	Chart label	UK Equity	US Equity	European Equity	Global Equity	EM Equity	Long Gilts	Long Index-Linked Gilts	UK IG Credit
Return	4.29%	3.94%	1.84%	3.26%	-6.33%	-28.50%	-33.54%	-19.26%	-0.31%

Gilt yields (20 year Real Yield and UK IG Credit yields)



Notes: Data to 31 March 2023. **Sources:** Refinitiv, Eikon, Isio calculations.

What does this mean?

Evolution	Impact	Action to Consider
Improved funding position	• Return requirement for Fund to maintain strong funding position is lower.	• Scope to de-risk the investment strategy, whilst still meeting the minimum expected return required by the funding strategy.
Index-linked Gilt yields now offer a positive inflation linked yield (c.RPI+1.0%)	• This increases their attractiveness as a strategic asset for the Fund to hold. • They provide direct uncapped inflation linkage (a rare investment characteristic) and now a more comparable yield (though still lower) when compared to the inflation-linked property allocation previously agreed	• Consider increasing the allocation to Index-linked Gilts.
Public and private market credit spreads (and overall yield) have increased	• Credit allocations are now more attractive due to the higher expected total return. • Credit offers a lower risk return profile than other growth assets e.g. equity	• Continue to increase private credit allocation. • Continue to increase public credit allocation. • Consider the timing of the move from Corporate Bonds to Diversified Credit, with a view to retaining the corporate bonds whilst the overall yield remains attractive.
UK Residential and Commercial property valuations under pressure	• There is scope for further capital value falls and muted capital growth from here. • We believe returns in the coming years will be primarily driven by rental income and likely to be lower than prior years	• Revisit the previously agreed allocation (yet to be implemented) to Inflation-Linked property given the increase in index linked gilt yields. • Consider if there are opportunities to tactically purchase at a significant discount to current prevailing value.

Proposals today

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Revised direction in light of where we are

Strategic change	Strategic rationale
Consider reducing allocations to the public and private equity reflecting strong funding position	• Continue direction of travel of reducing overall investment risk and reducing potential volatility in the funding position • We propose the underlying composition of the equity mandate allocations are reviewed now that Osmosis is in place.
Introduce strategic allocation to index linked gilts	• Increase inflation protection in asset portfolio to manage a key risk faced by the fund of persistently high inflation. Prevailing yields are attractive and the Fund has already started to purchase index linked gilts in line with the previously agreed trigger based framework.
Continue to progress an increased private credit allocation reflecting strong opportunity	• Private credit markets currently offer attractive yields, on an absolute basis and relative to liquid credit, and market dynamics favour those who are able to delay capital for the long term (such as the Fund). • Private credit assets will generate cashflow for the Fund over the short to medium term to meet increased cashflow needs.
Consider reinstating a more balanced approach in liquid credit	• Given the higher interest rate sensitivity of Investment Grade Corporate Bonds their relative attractiveness compared to Diversified Credit has increased. • Retaining an Investment Grade Corporate Bonds given their overall yield is appealing in the short to medium term.

- We believe the changes highlighted above are an appropriate evolution to the long-term investment strategy in order to better align the strategy to the Fund’s objective.

Alternative portfolios (1)

Key:

Growth
Defensive Growth
Income
Inflation Protection

%	Building Blocks	Current Strategic	Current Actual	Evolution	Reduced Risk
Global Equity		40.0	42.2	40.0	33.5 (-6.5)
Private Equity		5.5	8.2	5.5	5.5
Diversified Growth		17.0	18.0	17.0	17.0
Property – Balanced		7.0	7.6	7.0	5.0 (-2.0)
Property – Long inflation linked		4.0	-	- (-4.0)	- (-4.0)
Infrastructure equity		11.0	11.1	11.0	11.0
Private Credit		5.0	0.9	5.0	2.5 (-2.5)
Diversified Credit		10.5	6.4	10.5	13.0 (+2.5)
Corporate Bonds		-	2.7		
Index-Linked Gilts		-	2.1	4.0 (+4.0)	12.5 (+12.5)
Cash		-	0.8	-	-
Expected return (% p.a.)		7.8%	7.8%	7.7% (-0.1%)	7.3% (-0.5%)
VaR (3 yr, 1 in 20 chance)		£1,680m	£1,784m	£1,663m (-7%)	£1,485m (-17%)
% of assets with direct inflation linkage		c. 18.5%	c.17.0%	c. 18.5%	c. 26.0%
% of less liquid assets (liquidty1 available is lower than 1 month)		32.5%	27.9%	28.5%	24.0%

Source: Barnett Waddingham, Isio Calculations.
Notes: Direct inflation linkage assumed to be 100% of Long – Lease property, 100% of infrastructure equity, 50% of balanced property, 100% of private rented property, and 100% of index-linked gilts. Change in asset allocations expressed relative to strategic target. Change in expected return and risk expressed relative to current.

Alternative portfolios (2)

- Via the Mansion House speech in July 2023, the UK government is at the early stages of discussing reforms which may encourage LGPS funds to increase private equity allocations in the future. This introduces significant uncertainty to the regulatory environment the Fund could soon be operating in.
- As such we recommend any strategy changes are considered in this context, with the outcome of the consultation in mind, and phased in terms of implementation

Private Equity

- Recognising that the evolution of the private equity allocation takes time, and the live consultation is proposing a target Private Equity allocation of 10% for LGPS (versus the Fund's current target of 5.5%), we propose the current holdings are not "topped up" and left to drift lower from the current allocation of 8.2% to a level of c.7.5% until there is further clarity on the consultation outcome. Any changes to the private equity allocation can be phased and should take into account expected cashflows form the current private equity holdings.

Credit

- Given the relatively high prevailing yield on corporate bonds, we believe that considering the allocation to corporate bonds and Diversified Credit together is helpful and that this mix should evolve as market conditions change. We note, however, that the Committee have already taken the decision to appoint BlueBay to manage part of the Fund's Diversified Credit allocation alongside M&G. ACCESS are due to make the BlueBay fund available on the pool shortly in October 2023.
- Given the market and pool dynamics noted above, and the Fund's current positioning relative to the relative to the proposed "Evolution" strategy, we believe a pragmatic starting point would be to rebalance the credit portfolio to 2/3 Diversified Credit and 1/3 Corporate Bonds, with the view of phasing fully out of Corporate Bonds over time as and when market conditions dictate. Within Diversified Credit we propose splitting the allocation 50/50 between M&G and BlueBay. Given the overall strategic target to liquid credit is 10.5% this would result in a 3.5% allocation to each of the three underlying mandates.

Index-linked Gilts

- Increasing an allocation to index-linked gilts using trigger levels at 1.0%, 1.25% and 1.5% index linked gilt yield triggers has previously been discussed and agreed with the Committee. This decision was taken in the context of a 0% strategic allocation and the Fund looking to exploit opportunities in the market.
- If the Committee agree to implement the proposed "Evolution" strategy we propose the 4% target allocation should be implemented immediately (noting yields remain above 1.0%) and additional 1% increments should be added using the framework previously agreed. i.e. an additional 1.0% allocation at a yield of 1.25% and a further 1.0% at a yield of 1.50%.
- Further information on fixed income market levels are given in the appendix.

Source: Barnett Waddingham, Isio Calculations.

Notes: Direct inflation linkage assumed to be 100% of Long – Lease property, 100% of infrastructure equity, 50% of balanced property, 100% of private rented property, and 100% of index-linked gilts. Change in asset allocations expressed relative to strategic target. Change in expected return and risk expressed relative to current.

Equity portfolio – proposed evolution (1)

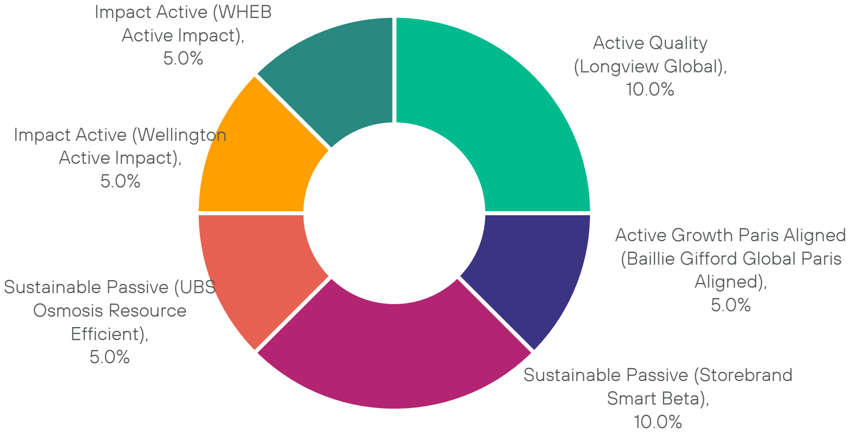
	Current Strategic allocation	Approach	31 March 2023 actual allocation	1 year Fund performance (%)	*1 year benchmark performance (%)*	SI year Fund performance (% p.a.)	*SI year benchmark performance (% p.a.)*
UBS Osmosis Resource Efficient Equity (Passive)	5%	Sustainable Passive	237m (5.2%)	-0.5%	*-1.0%*	4.0	*3.6*
Longview Global Equity (Active)	10%	Active - Quality	556m (12.2%)	5.7%	*-1.0%*	12.8	*10.7*
WHEB Active Impact Equity (Active)	5%	Impact Active	222m (4.9%)	-3.6%	*-1.0%*	0.6	*8.1*
Wellington Active Impact Equity (Active)	5%	Impact Active	222m (4.9%)	-6.8%	*-1.4%*	1.2	*6.4*
Storebrand Smart Beta Equity (Passive)	10%	Sustainable Passive	501m (11.0%)	-1.8%	*-1.0%*	6.7	*8.3*
Baillie Gifford Global Equity Paris Aligned (Active)	5%	Active – Paris Aligned Growth	187m (4.1%)	-5.1%	*-1.4%*	-11.7	*-12.6*

- The Fund's equity portfolio is a core driver of long term returns as well as the largest contributor to overall investment risk in the asset portfolio. The public equity allocation is currently split across 6 mandates with both actively and sustainable passively managed approaches. The bias is currently towards active management with 25% of the 40% overall target allocation allocated to actively managed strategies.
- Within the actively managed allocation there is a 10% allocation to Longview (Active – Quality) and 5% to each of Wellington (Impact Active), WHEB (Impact – Active) and Baillie Gifford (Active – Paris Aligned Growth), The Longview fund has delivered strong performance relative to peers over the last 12 months and the period invested. Wellington has performed poorly versus benchmark and peers as it lacks exposure to the mega cap stocks that led the market. The Baillie Gifford strategy has underperformed, particularly throughout 2022 due largely to its bias to growth focussed companies which lagged the market. Although Baillie Gifford's defined investment style has seen strong headwinds in recent times, more broadly, active equity managers have struggled to outperform their respective indices on a consistent basis.

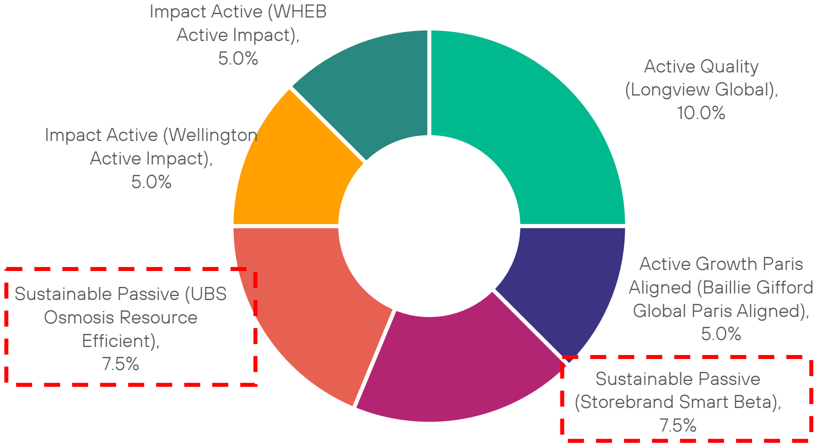
Source: Northern Trust

Equity portfolio – proposed evolution (2)

Current Target Public Equity Portfolio



Proposed Target Public Equity Portfolio



- Within the passive allocation consists of a 15% allocation to sustainable passive strategies split 10% to Storebrand and 5% to UBS Osmosis. The UBS Osmosis fund performance has been strong (relative the other similar index tracking fund peers and Storebrand). The scale of the allocations to Storebrand and Osmosis were largely a function of timing, with Storebrand implemented first and UBS Osmosis second (funded from the legacy passive UBS equity holding allocation). **We believe there is rationale to rebalance the passive managed allocation to make the exposures to Storebrand and UBS Osmosis equal and provide a better balance between the approaches taken.**
- Given the disappointing performance of the active equity managers to date, the Committee may also wish to undertake a separate equity structure review to consider the underlying equity holdings in more detail, including, detailed performance analysis, style analysis and currency hedging analysis.
- Within the global equity portfolio, c.4.8% of assets were allocated to the UK as at 31 March 2023. We consider this overall allocation as reasonable given the global market cap weighting of UK equities is currently c.4%., while also noting the actively managed portfolios can have tactical weightings in regional exposures.

ESG considerations

isio.

ESG Considerations

Consideration	Comments
The Fund has a defined Responsible Investment Policy containing explicit ESG objectives which outlines how the Committee consider ESG factors through the investment decision making process and how these are implemented in the Fund's portfolio.	• The Fund has made significant strides in improving the ESG profile of the investment strategy. The primary asset class when considering ESG sustainable or impact investing is equity, and the Fund's holdings reflect this. The Fund's equity portfolio have placed it at the forefront of the shift towards sustainable investing. • In order to further the alignment with the Responsible Investment Policy, any new mandates under consideration should be reviewed fully from an ESG perspective prior to implementation – at both the asset class and manager level. We have outlined below how ESG considerations should be viewed in relation to the proposed strategic changes for the Fund: 1. Increase in Private Credit – there is currently limited scope to apply ESG considerations at fund level; however we believe the Committee should evaluate how well any potential new managers integrate ESG analysis into their 'bottom-up' deal level due diligence process e.g. some managers have begun to negotiate ESG specific covenants in their deals. The market is evolving with new 'sustainable' products starting to become established. 2. Increase in Diversified Credit – the Committee has selected (yet to be implemented) a sustainably focused Diversified Credit mandate managed by BlueBay. M&G (the Fund's existing Diversified Credit manager) are due to launch a sustainable version of their fund in 2023. This is something we believe the Committee should consider. We view both managers as very strong in this space. 3. Increase in Index-Linked Gilts – passive UK Gilts currently offer very limited scope to implement ESG beliefs at fund level. 4. Increase in Corporate Bonds - the M&G corporate bond fund has held a consistently higher structural fossil fuel allocation than the M&G Diversified Credit Fund, and likely other Diversified Credit Funds available. Maintaining or adding to this allocation would increase this fossil fuel exposure. Sustainable corporate bond funds are available, but these may need to be accessed outside of the ACCESS pool. 5. Reduction in Equity – As noted above the Committee has already taken significant steps in improving the ESG profile of their equity holdings, Reducing the overall allocation to equities would reduce the overall impact of this on the Fund's portfolio. 6. Reduction in Property – this asset class is relatively flexible in terms of specific implementation method, covering multiple asset classes, such as UK Balanced (where the Fund currently has an allocation) and Long Lease UK Commercial Property, and Residential Property. In UK Balanced and Long Lease UK Commercial Property there is relatively little scope for fund level ESG integration, however the market is evolving and we expect to see some development in the coming years. • We note the ACCESS pool currently has limited (two) sustainable products available. The Fund is invested or already has plans to invest in both of these.

Implementation considerations

Implementation – Example transactions "Evolution"

- The table below details example high-level transactions proposed to fund a transition to the 'Evolution' strategy. The 'target strategic allocations' shown under 'Start Position' therefore reflect that of the 'Evolution' strategy.
- Across the numbers which show 'deviation from strategic allocation', the colour coding highlights where allocations are within 1.0% of their strategic target, are less than 3% away, or equal to or greater than 3% away.
- The colour coding within the 'funding cashflows' rows is used to match disinvestment and investments.

		Global Equity	Private Equity	Diversified Growth	Property - balanced	Property – LL & PR	Infrastructure Equity	Private Credit	Diversified Credit	Corporate bonds	Index Linked gilts	Cash
Start position	Value (£m)	£1,925	£375	£820	£349	£0	£506	£43	£293	£124	£94	£36
	Actual allocation (% of total assets)	42.2%	8.2%	18.0%	7.6%	0.0%	11.1%	0.9%	6.4%	2.7%	2.1%	0.8%
	Target strategic allocations	40.0%	5.5%	17.0%	7.0%	0.0%	11.0%	5.0%	7.0%	3.5%	4%	0.0%
	Deviation from strategic allocations	(2.2%)	(2.7%)	(1.0%)	(0.6%)	-	(0.1%)	+4.1%	+0.6%	+0.8%	+1.9%	(0.8%)
Funding cashflows	Disinvestments	-£99m	-£124m	-£44m	-£29m		-£4m					-£9m
	Investments							£157m	£27m	£36m	£36m £53m	
End position	Value (£m)	£1,826	£251	£776	£320	£0	£502	£200	£320	£160	£183	£27
	Actual allocation	40.0%	5.5%	17.0%	7.0%	0.0%	11.0%	5.0%	7.0%	3.5%	4.0%	0.6%
	Deviation from strategic allocations	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.6%	0.0%	0.0%	0.0%	0.6%

- We suggest the Storebrand and Osmosis equity holdings are equalised. As the Storebrand holding is currently overweight in this paring, we suggest the equity disinvestment for rebalancing is sourced from the Storebrand fund.

Source: Investment Managers & Isio calculations

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Implementation Considerations

Consideration	Description	Comments
Aligning the illiquid mandates with the strategic benchmark	The Fund's allocations to property and private equity are overweight relative to target. The allocation to Private Credit is underweight.	• There can be significant time and cost associated with reducing property allocations, this should be borne in mind when considering the pace of restructuring the portfolio. • The Private Equity allocation is expected to reduce over time as distributions are made from the funds. Future cashflows can vary in time and amount. Harbourvest expects approximately half of the allocation to be distributed by c.2028. Adams Street expects approximately half of the allocation to be distributed by c.2026. • The private credit allocation is in the process of being built up, with options regarding the structure of the underlying exposure previously discussed with the Committee.
Increased credit	The Fund's allocation to credit is currently underweight relative to the proposed strategic target.	• Given market conditions the Committee should consider how best to structure the underlying credit holdings. • The Committee has selected a Diversified Credit mandate with Bluebay but this is yet to be implemented.
Restructuring the public and private equity holdings	The proposed new strategy rebalances the holdings within the global equity allocation	• This public transfer is a relatively simple action, but will incur a spread on transaction costs. • Via the Mansion House speech in July 2023, the UK government is at the early stages of discussing reforms which may encourage LGPS funds to increase private equity allocations in the future. Although we do note believe this is a key consideration today, it may be become more relevant in the future.
Overall Fund Governance and Pool Implementation	The Fund currently has investments with 15 different managers.	• Any restructuring of the Fund's assets should be done with a view to minimising any increase to the number or complexity of existing investment arrangements, to avoid further increasing the overall governance burden. • Recent strategy changes have been slow to implement as the ACCESS pool can have long lead in times to add new propositions to the platform. This increases the risk of "opportunity cost" when implementing the chosen investment strategy. Consideration should be given to investing via alternative routes where appropriate. • This consultation for LGPS to seek views on proposals relating the areas of asset pooling, levelling up, opportunities in private equity, investment consultancy services and the definition of investments was released on 11 July. This should be monitored during the implementation of any strategic changes.
Transaction Costs	There are often explicit transition costs associated with the movement of assets.	• The round trip transaction costs of any movement in assets should be considered ahead of implementation. While we do not anticipate that the majority of the asset class changes proposed would incur transition costs, we do note that the sale of public credit assets is likely to incur a spread cost of c0.3-0.7%, while the sale of property assets on the primary market will incur trade costs of c. 2%. Given the illiquid nature property allocations can also take significant time to exit.

ACCESS current product range (1)

Currently invested

Fund	Size	Number of Investors
Equity		
ACCESS Long Term Global Growth (Baillie Gifford)	£1,772m	4
ACCESS Global Equity Core (Baillie Gifford)	£1,071m	1
ACCESS Global Dividend (M&G)	£1.338m	2
ACCESS Global Equity Ex UK (Fidelity)	£710m	1
ACCESS Global Stock (Dodge & Cox)	£1,694m	3
ACCESS Global Equity (Newton)	£981m	3
ACCESS Global Equity (Longview)	£2,044m	4
ACCESS Global Equity – JOHCM (J O Hambro)	£471m	1
ACCESS Global Equity Fund (Capital Group)	£414m	1
ACCESS Global Equity (Mondrian)	£299m	1
ACCESS Global Managed Volatility Equity Fund (Arcadian)	£639m	1
ACCESS Global Active Value Fund (Schroders)	£405m	1
ACCESS Global Alpha Paris Aligned Fund (Baillie Gifford)	£2,496m	4
ACCESS Global Equity Fund (Macquarie)	£1,261m	1
ACCESS UK Equity (Schroders)	£1,184m	1
ACCESS UK Equity Core (Baillie Gifford)	£699m	2
ACCESS UK Equity Fund (Liontrust)	£301m	1
ACCESS UK Select Fund (Blackrock)	£406m	2

Source: ACCESS

ACCESS current product range (2)

Currently invested

Fund	Size	Number of Investors
Diversified Growth		
ACCESS Diversified Growth (Baillie Gifford)	£307m	2
ACCESS Absolute Return (Ruffer)	£671m	2
ACCESS Real Return (Newton)	£341m	1
Fixed income		
ACCESS Long Sterling Core Bond (Royal London)	£395m	1
ACCESS Sterling Corporate Bond (M&G)	£124m	1
ACCESS Sterling Aggregate Bond Fund (Baillie Gifford)	£783m	1
ACCESS Sterling Investment Grade Credit Fund (Fidelity)	£725m	1
ACCESS Alpha Opportunities Fund (M&G)	£1,855	5
ACCESS MAC (Janus Henderson)	£1,091m	3
Passive investments		
UBS funds (including Osmosis Resource Efficient Index and Passive Index-linked Gilts)	£9,940m	9

Source: ACCESS

A3: ACCESS near term pipeline

Fund	Size	Number of Investors
Alcentra Fixed income	£484m	1
Barings Fixed income	£399m	1
Columbia Threadneedle Global Emerging Markets	£477m	3
Robeco Global Emerging Markets	£338m	1
GHIOF High Yield Credit Fixed income	£108m	1
24 AM Asset Backed Securities	£550m	1
BlueBay Fixed income	£640m	3

- In 2022 the Committee selected BlueBay as a preferred provider for Fund's Diversified Credit allocation and intend to implement the allocation once the BlueBay sustainable fund is available on the ACCESS platform

Source: LCIV

Summary and next steps

Summary and next steps

Summary

- The results of the March 2022 Actuarial valuation process indicate the Fund is 123% funded with a significant surplus. We have reviewed the Fund's investment strategy in light of this position, and the agreed strategic objectives, using a rolled forward funding position and market conditions as at 31 March 2023. We estimate a funding position of c.121% and a surplus of £795m at this date.
- The Fund's current strategy is expected to generate a long term return of 7.8% p.a. which we believe is more than sufficient to meet the Actuary's assumed return requirements under the current funding basis. There is scope to reduce risk if the Committee are minded to do so whilst still targeting sufficient return to meet the Actuarial basis.
- We understand the Fund wishes to continue to pursue long term returns in order to continue to build up a surplus within the Fund over the long term (which would enable contribution rates to be reduced) whilst also pursuing a market leading ESG strategy,
- We have presented a range of alternative asset allocations for consideration. We believe the changes highlighted above are an appropriate evolution to the long-term investment strategy in order to better align the strategy to the Fund's objective.
- Via the Mansion House speech in July 2023, the UK government is at the early stages of discussing reforms which may encourage LGPS funds to increase private equity allocations in the future. This introduces significant uncertainty to the regulatory environment the Fund could soon be operating in. As such we recommend any strategy changes are considered in this context, with the outcome of the consultation in mind, and phased in terms of implementation.
- The Fund should also consider both the governance implications of the availability of options on ACCESS, number of mandates/managers and the potential ongoing management costs before making any final decisions.
- Previously agreed strategy changes have been slow to implement as the ACCESS pool can have long lead in times to add new propositions to the platform. This increases the risk of "opportunity cost" when implementing the chosen investment strategy. Consideration should be given to investing via alternative routes where appropriate.
- As with all investment activity there is an element of geopolitical risk or other external factors which could negatively impact outcomes.

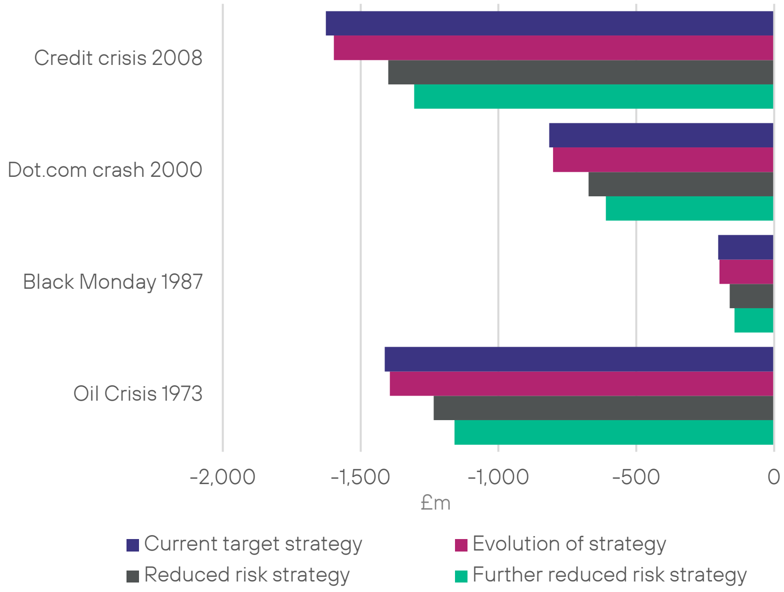
Next Steps

- The Committee should consider its views on:
  - the alternative asset allocations put forward in this paper, and whether there is any appetite to make change;
  - the make-up of the Fund's equity allocation and whether there is merit in rebalancing the passive allocations and/or a further implementation review of the equity structure;
  - Whilst secondary to the decision on the strategic asset allocation, the Fund will also need to consider the implementation of any changes, including the impact of pooling, in further detail.
- We look forward to discussing this report with the Committee.

Appendices

A1: Scenario analysis

How Would the Fund have Performed (Approximate) – 4 crises



Source: Barnett Waddingham, Isio calculations. Notes: Start funding position has been assumed to be 121% as at 31 March 2023.

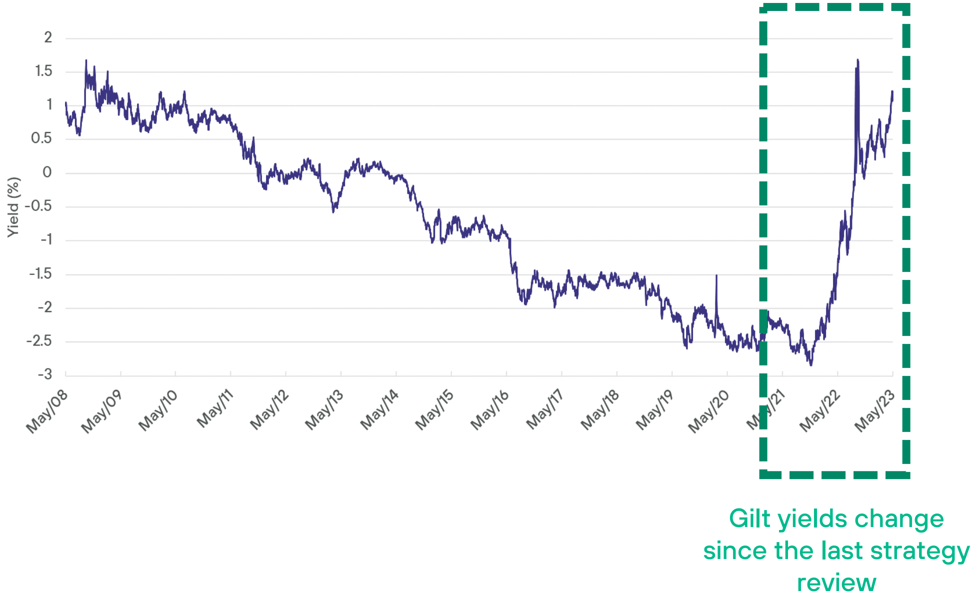
Comments

- Based on the current strategic allocation and asset value, we illustrate the funding level of the Fund would have changed under four historical market stress scenarios. These measure the impact across each specific event:
    - During the 2008 credit crisis, equity markets fell c. 50%, credit spreads widened materially, and long dated interest rates fell. Such moves would materially impact the Fund, given its equity exposure, and relatively low interest rate protection. The impact of these moves would have been partially offset by a c.0.5% fall in long dated inflation expectations, which would push down the value placed on liabilities.
    - The Fund would have suffered a significant drawdown during the 1973 Oil Crisis, with a c. 42% fall in equity markets, and a drop in long dated interest rates damaging the overall funding level.
    - The 2000 Dot.com crash saw a c. 35% fall in equity markets, but limited other negative market impacts for pension funds. However, we expect such an event to still have a material impact on the Fund, given the 40% equity allocation.
    - A repeat of 'Black Monday' would have a negative impact on funding level, albeit not to the same extent as the other scenarios considered. In this scenario, equity markets fell c. 10%, however long dated interest rates increased – pushing down the value placed on pension fund liabilities.
    - The scenarios suggest that the 1 in 20 risk illustrated previously (occurring over a three year period) is not unrealistic given the quantum that was observed during past market crises.

A2: Index-linked gilts - overview

- Index-linked Gilts are bonds issued by the UK Government and usually have a AAA-AA credit rating (depending on rating agency). The default rate is generally considered. to be very low given that the issuer (UK Government) has the ability to print money if needed, to pay debts in the event tax receipts are insufficient.
- Index-linked Gilts pay out a coupon and principal that is linked to the Retail Prices Index ("RPI") inflation. They therefore provide direct protection against changes in inflation expectations. This is a rare and attractive investment characteristic.
- **Index-linked Gilts** prices have risen materially over the 15 years to 2022 as interest rates steadily declined. Rising interest rates, combined with steady long term inflation over 2022 and 2023 have caused prices to fall.
- The real yield available has grown correspondingly in recent years and this is shown in the chart above. Purchasing a 20 year index linked gilt in 2021 would have delivered an ongoing yield of RPI -2.5 % p.a. The same gilt now will deliver a return of RPI + 1.0% p.a.

Long Term Real Gilt Yield Movements Since 2008 – 20yr UK Index-linked Gilt Yield



Source: Bank of England, Isio calculations.

A2: Index-linked gilts – proposed trigger levels

Trigger Structure

Updating the current trigger mechanism in place, we propose that in order to opportunistically take advantage of market movements, the purchase of additional Index-Linked Gilts is done in tranches according to market triggers and these triggers are updated following changes to the strategic benchmark.

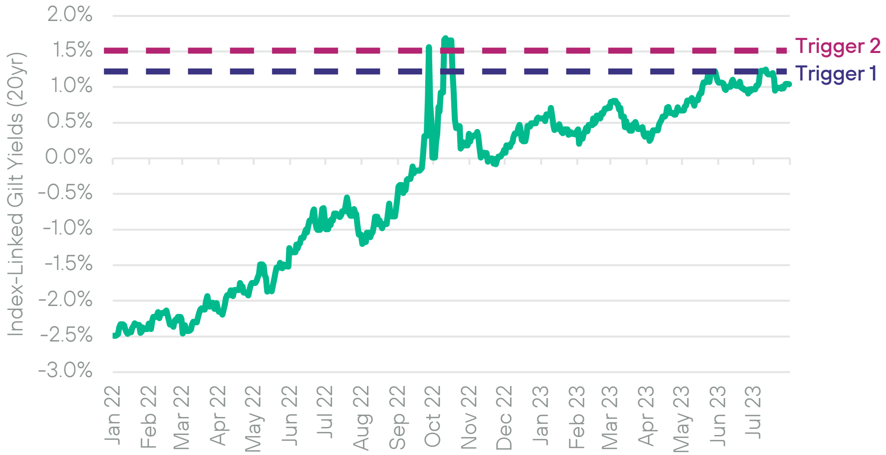
As the currently yield is above the first trigger of 1.0%, we propose the full 4% strategic allocation is implemented.

Following this, we propose implementing triggers to invest further in Index-Linked Gilts to an overweight positons , structured as follows:

Real Gilt Yield Trigger	Investment (% of total Fund value)
1.25%	1%
1.5%	1%

If both of these triggers were breached, and two tranches implemented, this would represent an allocation of index linked gilts up to 6%, from the current 4% strategic allocation.

Real Gilt yields – Year to 31 July 2023



Fund Source

We propose that rebalancing be done via a disinvestment from the most appropriate overweight liquid position e.g. equities or DGF at the time of the trigger being breached., based on rebalancing the allocations towards strategic benchmark

A2: What is Private Credit?

Private credit involves investment managers providing directly originated loans which historically would have been made by banks before the financial crisis. These loans are typically made to middle market private companies but can also be backed by assets such as property. The underlying loans are illiquid, meaning they cannot typically be sold at short notice, and are therefore usually accessed via a closed-ended fund structure

Returns in private debt are driven by interest payments and fees; investors typically expect a higher expected return to compensate for the illiquid nature of the holdings, as well as return of principal at the end of the loan period.

Examples of types of private credit include:

- Corporate Direct Lending (most common)
- Real Estate Debt
- Infrastructure Debt
- Private Asset Backed Securities

The main risk in private credit is credit risk relating to the underlying borrowers (i.e. the risk that they do not repay as promised). This is mitigated by manager due diligence into underlying borrowers and negotiating covenants to protect investors' interests. In addition, specific managers may choose defensive positioning, such as senior secured loans within less cyclical sectors, to reduce risk.

Given the illiquid nature of the underlying loans, private credit is typically accessed via closed-ended funds with typical fund terms of c.7 years, during which disinvestments are not permitted, but capital is returned as loans are repaid. Access therefore requires a long term investor time horizon and broader liquidity planning to facilitate allocations.

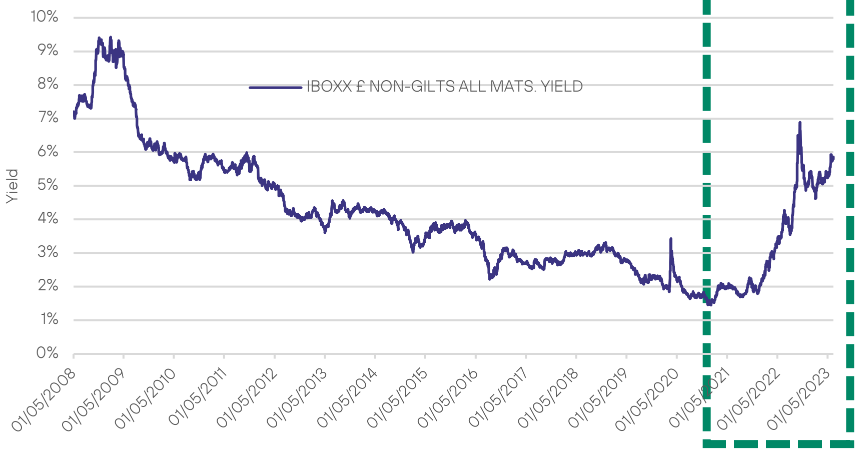
Most private credit strategies tend to invest in 'floating rate' positions, meaning the interest rate earnt increases as underlying base interest rates increase, which has been an attractive feature to increase returns over recent periods.

Typical closed- ended fund structure

A2: Investment Grade Corporate Bonds – overview

- Corporate bonds are debt instruments issued by companies which typically pay periodic interest coupons until the principal amount is repaid at maturity. Investment Grade ("IG") bonds are issued by companies considered to be relatively lower risk and the bonds are rated from AAA to BBB.
- Corporate bond investments by pension schemes play a dual role in the portfolio:
    - To serve as a matching asset class - Interest rate exposure through bond investments can be used to match some interest rate risk related to pension scheme liabilities
    - To provide a source of excess returns - Corporate bonds carry a credit spread. The excess yield above government bonds that compensates investors for the risk of investing in bonds.
- Investment in corporate bonds can be on a passive basis, whereby the investment manager seeks to replicate the return of a benchmark index or on an active basis, whereby the manager seeks to provide a return in excess of a benchmark.
- IG corporate bonds typically have a lower sensitivity to changes in interest rates (lower duration) than pension scheme liabilities. However, they are expected to provide higher returns compared to UK Gilts, in line with the higher risk.

UK Investment Grade Bond Yields Since 2008



Yield change since the last strategy review

- The yield available has grown correspondingly in recent years and this is shown in the chart above. Purchasing IG bonds in 2021 would have delivered an ongoing yield of 1.9% p.a. The same bond now will deliver a return of 5.9% p.a.

A3: Timberland – overview

Timberland investments comprise a diverse range of forestry assets, from softwood forests in the south-eastern United States to eucalyptus plantations in Brazil and South Africa. Timberland is expected to provide a steady stream of returns with low correlation to traditional asset classes and low volatility. However, the non-contractual cashflows, the illiquidity of the funds and the performance fee structure means it may only be suitable for certain schemes.

Timberland funds buy and manage forestland with the aim of maximizing harvest yields, and selling the timber to the construction and paper/soft goods industries. At the end of the fund's life, the land is sold.

The asset class has historically produced a steady stream of returns with low correlation to traditional asset classes (see chart opposite) and low volatility.

Timber Investment Management Organisations ("TIMO") are specialised entities that are set up with the sole purpose of investing in timberland on behalf of large institutional clients such as pension schemes, insurance companies and university endowments.

TIMOs can be accessed via closed and open-end vehicles, as well as a few listed vehicles. Our preference is for closed-end vehicles.

- Closed-end pooled funds - These funds typically require minimum investments of £5m and have long-term lock-ups. These funds are suitable for most medium sized schemes (total assets >£100m);
- Segregated mandates: Mandate sizes are typically required to be £50m or more. Thus, schemes with over £500m of total assets could consider allocating on a segregated basis.

Manager skill in selecting and managing investments as well as timing the harvest of timber (from which up to 25% of returns are derived) is an important consideration.

Typical Characteristics

Expected Return	Low	High	**Gilts + 5.0%**
Expected Volatility	Low	High	**15.0% p.a.**
Shape of Outcomes	0% Contractual	100% Contractual	**<50%-contractual**
Liquidity	Immediate	Long	**Long**
Diversification	Concentrated	Highly Diversified	**Concentrated**
Management Fee	Low	High	**c.0.75-1.5% p.a.**
Performance Fee	No	Yes	**c.20% p.a.**

Implementation Considerations

Availability	Depending on funds' fundraising cycles
Governance	High due to drawdown structure
Trading costs	Secondaries market in infancy
Turnover	Low
Lock-ins	Typically 10-15 years
Active/Passive	Active
Geography	Mostly in the US, Australia and South America, some EM exposure (highly fund-specific)

Past Performance

Performance Indicator	2021	2020	2019	2018
Timber Index[1]	16.7%	20.4%	19.2%	-17.7%

Note: Totals may not sum to 100% due to rounding. [1]S&P Global Timber & Forestry Index, performance refers to net total return in USD.
Source: Sample investment managers, S&P Dow Jones Indices

A3: Private debt secondaries – overview

Private debt secondaries ('PDS') strategies involve buying private debt assets on the secondary market from both Limited Partners (LPs) and General Partners (GPs) seeking liquidity. We prefer strategies which focus on performing senior debt where excess returns are largely driven by a 5-15% discount to fair value. Some managers may also seek modestly levered positions and utilise mezzanine/distressed positions to increase returns; however the latter should form the minority of an overall portfolio.

Private debt secondaries strategies are a new opportunity that have evolved from the growth of the private debt market. As fundraising in private debt has increased, the turnover of these assets has naturally started to rise providing investors with an alternative entry point to access the private debt universe.

A PDS strategy allocates across both General Partner ('GP') and Limited Partner ('LP') stakes of direct lending funds. These are characterised as follows:

- In a **GP-led deal**, the underlying fund manager will be seeking a liquidity solution on behalf of all Limited Partners (i.e. fund investors), such as a continuity solution as a fund reaches the end of its life. The PDS manager can negotiate which of the GP's assets it wants to purchase or exclude. As a result, these deals can be quite complex but PDS managers may have less negotiating power, especially in an auction process.
- In an **LP-led deal**, a specific investor seeks liquidity by selling their individual fund holding. The PDS manager must take the full exposure of the fund, unlike in GP-led deals. A PDS manager may have greater negotiating power on price but less scope to negotiate fee discounts directly with the GP.

GP-led deals tend to be driven by portfolio management considerations such as accelerating liquidity to investors, fund restructurings and continuation vehicles. Conversely LP-led deals tend to be driven by liquidity considerations such as rebalancing wider portfolios, managing cashflows or offloading illiquid assets as investors approach their long term targets.

The benefits of a PDS strategy can be best viewed relative to a traditional primary direct lending ('DL') fund. Potential advantages include:

- **Visibility** – ability to evaluate how loans have been performing given the sight of the operating history of the portfolio being acquired.
- **Deployment** – quicker deployment relative to a DL fund as the PDS manager has immediate access to funded portfolios rather than spending time sourcing individual deals.
- **Immediate Yield** – as PDS managers invest approximately 3 years into the life of individual positions, underlying positions tend to be income generating, providing a yield upon the first investment.
- **Diversification** – as an example, where a DL fund will have one GP and c.30-50 loans, a PDS fund may have c.10 GPs and 500+ underlying loans, increasing manager style and underlying issuer diversification.

Typical Characteristics

Expected Return	Low	High	**8-10% Net IRR**
Expected Volatility	Low	High	**c.8-10% p.a.**
Shape of Outcomes	0% Contractual	100% Contractual	**Mostly contractual**
Liquidity	Immediate	Long	**Long**
Diversification	Concentrated	Highly Diversified	**Diversified**
Management Fee	Low	High	**1.0% to 1.25% p.a.**
Performance Fee	No	Yes	**5.0% – 15.0% p.a. subject to return hurdle**

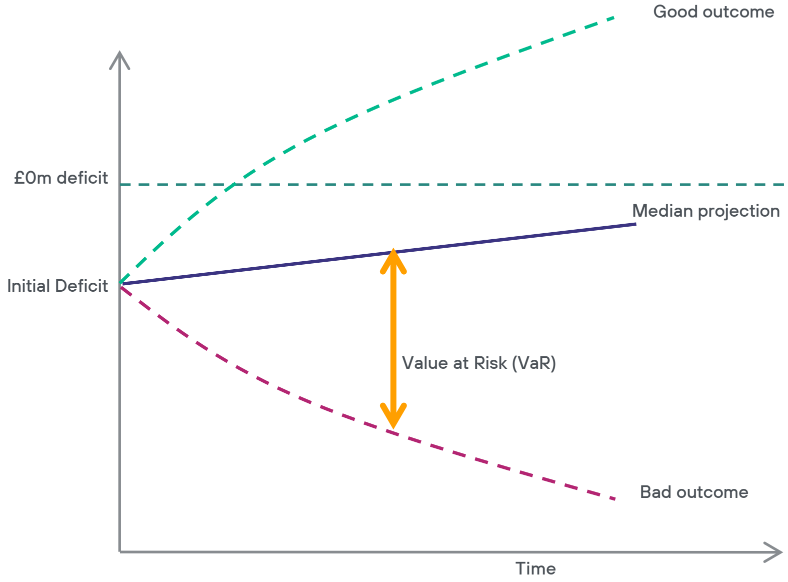
Implementation Considerations

Availability	Limited number of pooled funds currently available
Governance	Moderate, drawdowns plus standard quarterly monitoring
Trading costs	None
Turnover	Low
Lock-ins	Withdrawals are not permitted. Income and capital will be distributed throughout the Fund's life.
Active/Passive	Active
Geography	Global
Asset Allocation	80%-100% Senior/Unitranche Debt; 0%-20% Subordinated Loans
Past Performance	Due to the infancy of the asset class, it is too early to draw meaningful conclusions from past performance.

A4: Value at Risk – an explanation

Value at Risk ("VaR")

- The 1 in 20 value at risk is the difference between the 5th percentile outcome and the expected (median) outcome. The VaR measure gives a sense of how much better or worse the funding position could be relative to the central expectation for different market conditions. This is important when comparing investment strategies and setting contribution rates.



Note: the above chart is for illustrative purposes only.

A5: Return and volatility assumptions (1)

Introduction to the Assumptions

- These are our "best estimate" asset class return, volatility and correlation assumptions. We believe there is a 50:50 chance that the actual outcome will be above/below our assumptions.
- The assumptions are long-term, for a 10-year period, expressed in Sterling terms.
- Return assumptions are:
  - Annualised (i.e. geometric averages), rounded to the nearest 0.1%.
  - Expressed relative to the yield on fixed interest gilts (the annual yield at the 10-year tenor on the Bank of England spot curve). This yield was 3.5% at 31 March 2023.
  - Net of management fees.
  - Before tax. UK pension schemes are exempt from tax on investments. The impact of taxation may reduce returns for other investors.
- Volatility assumptions are based on the standard deviation of annual returns over a 10-year period, rounded to the nearest 0.5%.
- Bond volatilities are sensitive to the duration of the index. Our Fixed Interest Gilts (FIG) and Index-Linked Gilts (ILG) assumptions both relate to Over 15 Year indices, but the cashflow profile of the ILG index is considerably longer than the FIG index. Hence the difference in volatilities is partly explained by the different index durations.
- Correlation assumptions are based on the correlation of annual returns over a 10-year period, rounded to the nearest 5%.

Limitations and Risk Warnings

- There can be no guarantee that any particular asset class or investment manager will behave in accordance with the assumptions.
- The assumption-setting process is subjective and based on qualitative assessments rather than a wholly quantitative process. Newer asset classes can be harder to calibrate due to the lack of a long-term history. Some asset classes may rely on active management to help deliver the assumed return. The returns on illiquid assets may vary by vintage; in these cases the quoted return expectation is necessarily an estimate encompassing multiple vintages.
- Where these assumptions are used within asset-liability modelling, please note that the model's projections are sensitive to the econometric assumptions. Changes to the assumptions can have a material impact upon the modelling output.

A5: Return and volatility assumptions (2)

Asset Class	Sector [1]	Return [2]	Volatility [3]
Equity	Developed Markets – Passive	4.0%	20.0%
	Developed Markets – Core Active	4.5%	20.5%
	Global Unconstrained	5.0%	21.0%
	Developed – SmallCap Passive	4.6%	24.0%
	Emerging Markets – Passive	5.5%	28.0%
Property	UK Balanced Property	2.4%	13.0%
	Long Lease Property	2.5%	8.0%
	Private Rented Sector	3.0%	13.0%
	Global Property Secondaries	6.0%	30.0%
Hedge Funds	Multi-Strategy Fund of Funds	2.5%	10.0%
	Global Macro	3.0%	13.0%
Diversified Growth Funds	DGF (lower risk) [5]	2.8%	10.0%
	DGF (higher risk) [5]	3.5%	12.5%
Alternatives	Private Equity	6.5%	26.0%
	Diversified Alternatives	6.0%	18.0%
	Infrastructure Equity (lower risk) [5]	4.2%	10.0%
	Infrastructure Equity (higher risk) [5]	4.9%	15.0%

Notes: Please refer to full explanations and caveats on previous pages.

[1] Includes active management except where specified as passive.

[2] Expected return per annum, net of fees, relative to the yield on fixed-interest gilts.

[3] Expected standard deviation of absolute annual returns.

[4] Includes allowances for downgrades and defaults.

[5] "Lower risk" and "higher risk" are relative descriptions within the asset category only, with no wider meaning.

Source: Isio

Asset Class	Sector [1]	Return [2]	Volatility [3]
Credit [4]	Corp. Bonds (IG All-Stk) – Passive	1.1%	8.0%
	Corp. Bonds (IG All-Stk) – Active	1.4%	8.0%
	Corp. Bonds (IG >15y) – Passive	0.9%	11.0%
	Corp. Bonds (IG >15y) – Active	1.2%	11.0%
	Absolute Return Bonds	1.5%	4.0%
	Asset-Backed Securities (IG)	2.0%	5.0%
	CLO	2.6%	9.0%
	Direct Lending	4.2%	10.5%
	Distressed Debt	7.0%	18.0%
	Diversified Credit	2.5%	11.0%
	Diversified Private Credit	4.2%	10.0%
	High Yield Credit	3.0%	11.0%
	Infrastructure Debt – Senior	2.0%	6.0%
	Infrastructure Debt – Junior	3.3%	9.5%
	Multi-Asset Credit (lower risk) [5]	2.6%	6.5%
	Multi-Asset Credit (higher risk) [5]	3.3%	9.0%
	Real Estate Debt – Senior	1.8%	6.0%
	Real Estate Debt – Junior	5.0%	14.0%
	Real Estate Debt – Whole Loan	3.5%	9.0%
	Secured Finance	3.3%	8.5%
	Semi-Liquid Credit	3.5%	9.0%
Gilts	Fixed Int. Gilts (>15y) – Passive	0.0%	11.0%
	Index-Linked Gilts (>15y) – Passive	0.0%	12.0%
Cash	Cash	0.0%	1.5%

A6: Modelling methodology (1)

Data and Sources

- Information on characteristics of the Fund's liability profile, including the split between membership types, was taken from information provided by Barnett Waddingham as at 31 March 2023.

Modelling Principles

- SOFIA is a stochastic model that simulates a large number of possible future economic outcomes, in which financial conditions develop in a number of different ways, defined by assumptions for average outcomes, range of variability, and inter-dependency between different markets.
- The high-level market scenarios are generated by a third-party Economic Scenario Generator (ESG) provided by Moody's Analytics. The ESG is an industry-standard tool that is widely used by financial institutions (e.g. insurers, asset managers, and investment banks).
- Based on the scenarios generated by the ESG, SOFIA simulates asset-class returns calibrated to Isio's asset-class assumptions.
- SOFIA takes the initial starting position of the assets and the liabilities, and projects these values forward under the simulated scenarios, taking into account any relevant inflows and outflows.
- Different investment strategies are modelled in order to illustrate the effects of different allocations. In each case, SOFIA assumes that the strategy remains constant over the full projection period. Assets are annually rebalanced back to the original allocations.

Modelling Results

- The results of the projections are shown by ranking the calculated results from best to worst in each year, and presenting the following outcomes:
- Median: this is the middle outcome and can be thought of as the "expected result". Half of the modelled outcomes are better than this and half are worse.
- Bad: this splits the results so that there is a one in five (20%) chance of having a worse outcome. This is a measure of risk.
- Very Bad: this splits the results at a one in twenty (5%) chance of having a worse result. This is a more extreme measure of downside risk.
- Good and Very Good (where shown): these illustrate possible positive outcomes at the 20% and 5% levels respectively.
- The "Value at Risk", where shown, is defined as the difference between the Median outcome and the Very Bad outcome, i.e. it represents the variability of funding outcomes and shows the magnitude of the possible downside from the expected result. Please note that this is not the same as the possible downside loss from the starting position.

A6: Modelling methodology (2)

Compliance Statement

- This report, and the work relating to it, complies with "Technical Actuarial Standard 100: Principles for Technical Actuarial Work" ("TAS 100").
- This report has been prepared for the purpose of assisting the addressee in their review of the investment strategy. If you intend to use it for any other purpose or make any other decisions after considering this report, please inform Isio and we will consider what further information or work is needed to assist you in making those decisions.

Material Assumptions

- Isio's central asset-class assumptions are assessed and revised at each calendar quarter-end. The assumptions used within this modelling exercise are set out in the Appendix.
- Certain assumptions are sourced directly from the Moody's Analytics ESG and available market data, or set via adjustments to these sources. Where required or deemed to be more appropriate, assumptions are entirely determined by Isio. The assumption setting process is subjective and based on qualitative assessments rather than a wholly quantitative process. Where judgement is required, input is received from Isio's internal asset-class research teams.

Limitations and Risk Warnings

- The only risk factors considered in our modelling are those that affect the values of pension schemes' assets and the financial assumptions used to value schemes' liabilities. Some of the risks that are not reflected include demographic risks (e.g. uncertainty of life expectancy), future changes to members' benefits, and legislative risks. The modelling results should therefore be viewed alongside those risks, as well as other qualitative considerations including portfolio complexity, governance burden, and liquidity risk.
- The model's projections are sensitive to the starting position and the econometric assumptions. Changes to the assumptions can have a material impact upon the output. There can be no guarantee that any particular asset class or investment manager will behave in accordance with the assumptions. Newer asset classes can be harder to calibrate due to the lack of a long-term history.
- The modelling analysis is based on portfolios containing a range of asset classes and different approaches to fund management. Clients should not make decisions to invest in these asset classes or approaches to fund management based solely on the modelling analysis.
- Portfolios that make use of derivatives are exposed to additional forms of risk and can experience losses greater than the amount of invested capital.
- No guarantee can be offered that actual outcomes will fall within the range of simulated results. Actual outcomes may be better than the simulated 95th percentile or worse than the simulated 5th percentile.

A6: Modelling methodology (3)

Liability Basis

- Where the model illustrates a scheme-specific funding basis (e.g. Technical Provisions), the funding basis is calculated in the same way across all the investment portfolios modelled. We therefore focus on the effect of investment strategies on asset values and hence surplus/deficits, without the distorting effect of differing discount rates. However, in cases where the discount rate allows for a risk premium, the magnitude of the risk premium may depend on the proportion of return-generating assets in the portfolio, and therefore in practice the funding basis may be different under different investment strategies.

Contribution Basis

- The model's projections may be based on either fixed or variable contributions:
- "Fixed contributions" means that the current schedule of deficit contributions is assumed to remain in place for the full projection period. The purpose of this is to illustrate pure investment risk, showing the effect of differing investment strategies without the distorting impact of different amounts of money being contributed. In practice, however, the long-term downside outcomes would be less likely to be reached, as poor intermediate outcomes would lead to a requirement for additional contributions after future valuations.
- "Variable contributions" means that the model simulates future actuarial valuations every three years, and calculates the future deficit contributions that might be required under the particular situations being projected. This illustrates the range of possible future contribution requirements.

- In addition to the deficit contributions, the model also calculates contributions required to fund future service accrual, if there are active members accruing additional pension entitlements. In this case a small amount of variability arises from the range of possible future inflation projections. Therefore the "fixed contribution" projections may still show minor differences in contributions between, for example, Median and Bad outcomes.

A7: Disclaimers

- This report has been prepared for the sole benefit of East Sussex County Council as Administering Authority of the East Sussex Pension Fund and based on their specific facts and circumstances and pursuant to the terms of Isio Group/ Isio Services Ltd's Services Contract. It should not be relied upon by any other person. Any person who chooses to rely on this report does so at their own risk. To the fullest extent permitted by law, Isio Group/ Isio Services Ltd accepts no responsibility or liability to that party in connection with the Services.

- The information contained within the report is available only to relevant persons, and any invitation, offer or agreement to purchase or otherwise acquire investments referred to within the report will be engaged in only with relevant persons. Any other person to whom this communication is directed, must not act upon it.

- In the United Kingdom, this Report is intended solely for distribution to Professional Clients as defined by the Financial Conduct Authority's Conduct of Business Sourcebook.

- This report has not therefore been approved as a financial promotion under Section 21 of the Financial Services and Markets Act 2000 by an authorized person.

- Isio Service Limited is authorised and regulated by the Financial Conduct Authority FRN 922376.

- The output from our modelling is based on a large number of underlying assumptions. Changes to these assumptions can have a material impact on the results of the modelling.

- The outcomes shown above are not intended to be the best possible, or worst possible outcomes. The actual outcome could be worse than the 5th percentile, or better than the 95th percentile.

- The modelling analysis is based on portfolios containing a wide range of asset classes and different approaches to fund management. Clients should not make decisions to invest in these asset classes or approaches to fund management based solely on the modelling analysis.

- The only risk factors we have considered in our modelling are those that affect the values of pension schemes' assets and the financial assumptions used to value schemes' liabilities. Some of the risks we have not considered include demographic risks such as the life expectancy of pension schemes' members and future changes to members' benefits.

Thank you

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