London Borough of Hammersmith & Fulham Pension Fund

Data Centre Investment Opportunity – Asset Allocation Considerations

August 2024

isio.

Document Classification: Confidential

Introduction and Background

Introduction

- This paper has been prepared for the Pension Fund Committee (the "Committee") of the London Borough of Hammersmith and Fulham Pension Fund (the "Fund"). The purpose of this paper is to:
    - Consider whether a Data Centre allocation is appropriate for the Fund and where it could be implemented in the Fund's investment strategy
    - Set out potential alternative options illustrating where a Data Centre allocation could be made
    - Analyse current and potential alternative portfolios using Isio's asset liability modelling tool SOFIA, covering:
        - Risk vs return characteristics
        - Overall portfolio liquidity
    - An Isio recommendation based in relation to asset allocation and sizing
- This paper should be considered in conjunction with a second Isio paper relating to a long list of Data Centre managers (due to be presented at the August 2024 Committee meeting) and the context of the asset class training the Committee received in July 2024.

Background

- As an initial step, Isio presented asset class training and our initial thoughts on the Data Centre opportunity to the Committee at the July 2024 Committee meeting.
- The Committee debated the training and agreed to proceed with further work in the area, with a focus on gaining increased comfort with several key areas, including:
    - Strategic fit of an allocation with the wider strategy
    - Alignment with the regulatory environment (asset pooling, UK levelling up etc)
    - ESG impact of the asset class
    - Attractiveness of the products currently available in the market

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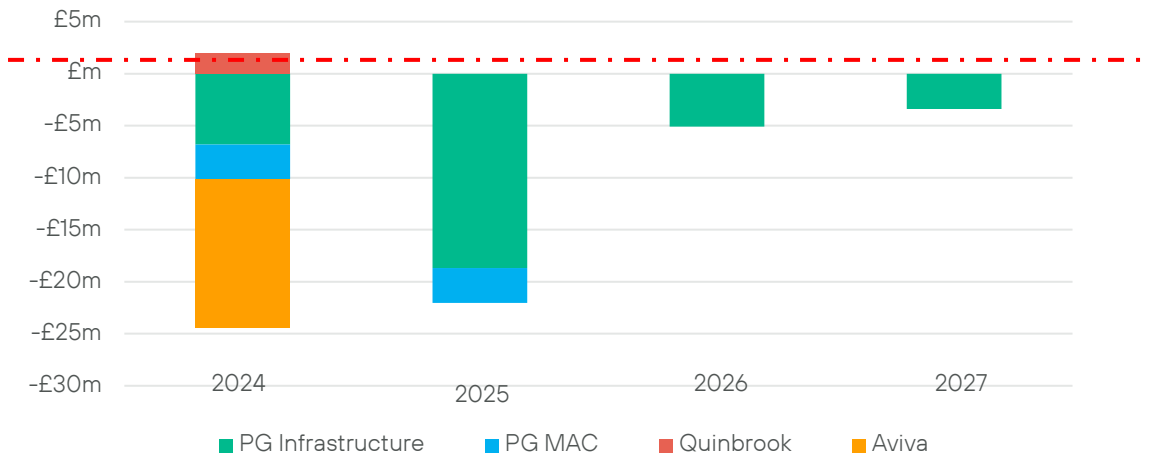
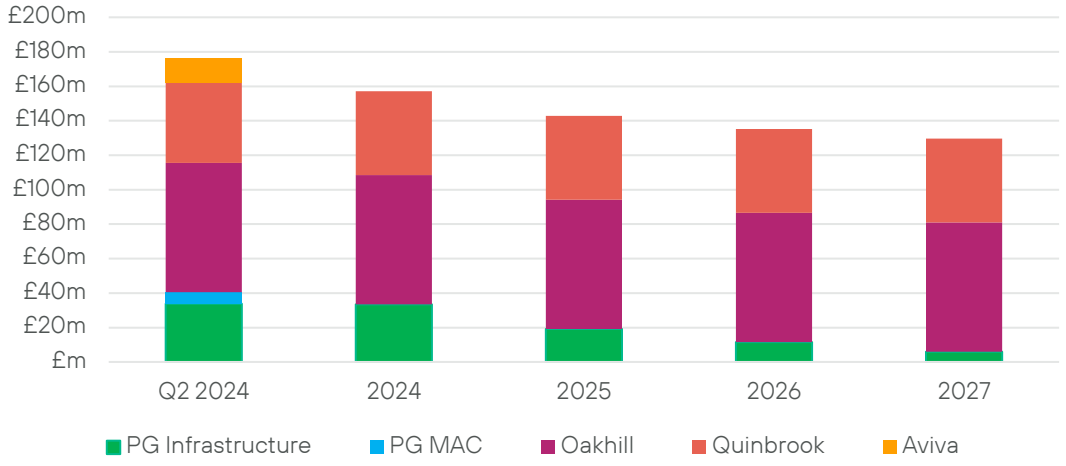
Evolution of the Current Secure Income Allocation

Projected Cashflows Secure Income Portfolio

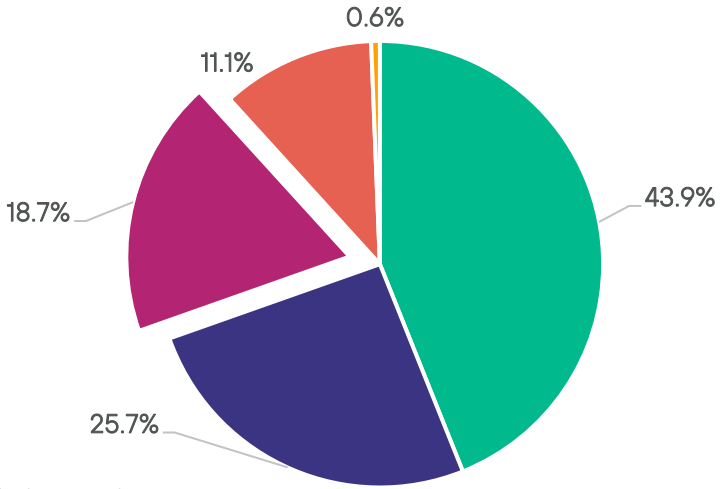


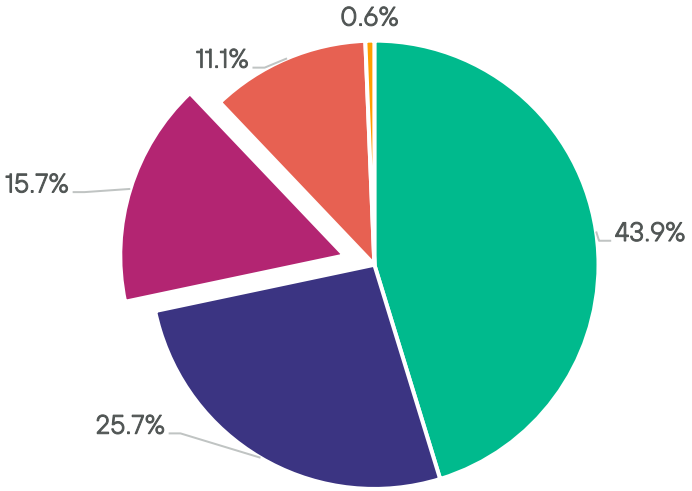
Projected NAV Secure Income Portfolio



Estimated Portfolio Building Block Allocations

30 June 2024
Asset Value
£1,375





30 June 2026
Asset Value
Estimated £1,574

- Equity
- Dynamic Asset allocation
- Secure Income
- Inflation Protection
- Cash

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Notes: NAV and cashflow projections based on information provided by the asset managers. The Darwin Leisure Development Fund has been excluded from the analysis above as the manager was unable to provide cashflow data but we understand the fund is currently cashflow neutral. Roll forward of building blocks accounts for expected return only and not employer or employee contributions.

Source: Aviva, Partners Group, Oakhill and Quinbrook

Current Secure Income Allocation it's Evolution (2)

Evolution of Allocation

- Given the expected investment characteristics of Data Centres we believe they best fit in the Fund's Secure Income allocation. These were outlined in further detail in July's training session.
- The analyses on the previous page shows the Fund's allocation to this building block is currently underweight relative to the strategic target (18.8% vs 20.0% at June 2024).
- This allocation is expected to move further underweight in the coming years based on the latest projected cashflow information provided by the Fund's managers:
    - Following the sale of energy centres based at NHS hospital sites the Aviva IIF expects to pay out a redemption of £14.3m in September 2024.
    - Partners Direct Infrastructure is winding down over the next 4 years and is expected to return all capital over this period.
    - Partners Group MAC will complete distributions this year.
    - Quinbrook will continue to draw outstanding capital over 2024/25
- We estimate, based on the latest projections, which are subject to change, that c. £50m of cash will be returned to the Fund over the next 3 years and be available for investment, with this predominantly falling in years one and two.

Allocation Proposal

- Further investment in the Secure Income Allocation is needed in order to maintain the target weight. The pie charts on the previous page show the impact of not redeploying in the Secure Income Allocation – it becomes increasingly underweight over time.
- As such, we propose £35m (2.5%) of total Fund assets should be considered for a Data Centre allocation. This amount represents a balance between the cash "naturally available", a meaningful allocation for the Fund, and one that is not too sizable given the focused nature of Data Centre strategies.
- This allocation will bring the Fund's allocation to Secure Income closer to the target. The excess distributions expected to be received can either by reinvested to rebalance the Fund closer to its strategic target, or held in cash whilst future decisions are made on the Fund's overall investment strategy (at a time closer to when total proceeds will be received).
- We expect the Data Centre funds we are considering to draw capital over the next 2-3 years, however, there may be a timing mismatch between cash being returned from the wider Secure Income allocation. We believe it is appropriate to bridge any gaps using the Fund's other liquid holdings (e.g. cash or equities). If required.
- Overleaf we have modelled a scenario of taking the full £35m amount from current distributions and also equities to demonstrate the impact of the two extremes of the Fund's risk/return characteristics.

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Asset Allocation Options and Impact

Building Block	Asset Class	Strategic Target Allocation	Allocation 31 March 2024	Current Vs Strategic Target	Option 1 (Funded Fully from Distributions)	Option 2 (Funded Fully from Equity)
Equity	Equity – Global Passive	13.0	13.2	+3.5	13.2	13.2
	Equity – Global Passive	27.0	30.3		30.3	27.8 (-2.5)
Dynamic Asset Allocation	Absolute Return	10.0	11.1	+1	11.1	11.1
	Buy & maintain Corporate Bonds	15.0	14.9		14.9	14.9
Secure Income	Diversified Credit	9.0	9.7	-1.2	9.2 (-0.5)	9.7
	Direct Infrastructure	5.0	2.4		1.9 (-0.9)	2.4
	Infrastructure Equity	3.5	4.6		3.5 (-1.1)	4.6
	Leisure Development	2.5	2.1		1.6	2.1
	Data Centre	-	-		*2.5 (+2.5)*	*2.5 (+2.5)*
Inflation Protection	Property Long Lease	5.0	3.6	-3.9	3.6	3.6
	Ground Rents	7.5	5.8		5.8	5.8
	Residential Property	2.5	1.7		2.5	1.7
Cash	Cash	-	0.6		-	0.6
	Expected Return	Gilts +3.8%	Gilts +3.8% (+0.02%)	-	Gilts +3.9% (+0.05%)	Gilts +3.9% (+0.07%)
	Risk (£m 3 year, 1 in 20 VaR)	£477.5m	£508.6m (+£31.1m)		£517.3m (+£39.8m)	£505.0m (+£27.5m)

- We believe there should be sufficient capital returned to the Fund over the next 2-3 years to Fund a 2.5% allocation to Data Centres. This amount will also better align the Fund's Secure Income allocation to target over time. 2-3 years is estimated to be the timeframe over which any new allocation would draw down.
- However, there may be a mismatch of timings of when cash is received and required to be invested in a new mandate. As such we propose this met through the Fund's other liquid mandate. This could be cash, equity, absolute return or diversified credit.
- Alongside the scenario of using distributions only to fund new investment, we have shown the impact to risk/return of fulling funding a £35m allocation from equity. This is driven by the equity allocation being overweight vs target and this scenario is likely to show the most extreme impact on risk and return given the higher risk nature of equities.
- We highlight that in each scenario, the change in expected return and risk is broadly muted given the Fund's total size, with a slightly higher risk and return from investing in Data Centres given its relatively high risk profile and more specialist nature.

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Other Strategic and Regulatory Considerations

Additional Consideration	Comment

Regulatory guidance for LGP pooling and local investment	• The Department for Levelling Up, Housing and Communities ("DLUHC") set out proposals for the LGPS across five key areas, including the three outlined below, to undergo consultation over the 12 week period from 11 July 2023 to 2 October 2023: Having considered the responses, we expect the government to implement the proposals set out in the consultation, but we await further guidance on some aspects.
	  • Accelerate and expand asset pooling: proposed deadline for all liquid assets to be pooled by 31 March 2025, including consideration of the use of fewer pools, with each LGPS fund to set out which assets are pooled, under pool management and not pooled, including a detailed "comply or explain" rationale under statutory guidance including value for money considerations.
	  • Levelling up: amend regulations to require LGPS funds to have a plan to invest up to 5% of assets to support levelling up in the UK (i.e. into projects which make a measurable contribution to one of the levelling up missions set out in the Levelling Up White Paper ("LUWP"), supports any local area within the UK) and to report annually on progress against the plan.
	  • Private equity: LGPS funds to consider investments to meet the government's ambition of a 10% LGPS fund allocation into high growth companies via unlisted equities. We are still awaiting further explanation on the definition of this..
	• An investment in Data Centres does not fit well with the guidance above and the Committee should be comfortable with this and the additional scrutiny it may draw.
	• We have spoken with LCIV who do not current offer a Data Centre product or intend to in the near future which helps mitigate this. We are also aware that some of the shortlisted managers have significant interest form other potential LGPS to invest in their products..

Illiquid investment in a close ended structure	• Data Centres is an illiquid asset class and fund structures are close ended and fixed term for 6-10 years. This means any allocation will be committed to and held "off pool" for the long term. See comment above.
Total illiquid allocation for the Fund	• The total target allocation to illiquid assets is currently 26%. Although not an issue, we would caution increasing the allocation materially further from here given it may result in reduced flexibility in the investment strategy. We believe funding a new allocation to Data Centres primarily through distributions helps manager this, given the Secure Income allocation is current underweight. • The Committee should consider if they are comfortable with the level of assets which are not readily available for liquidity needs.
ESG impact	• The ESG credentials of an allocation to Data Centres is discussed the accompanying report to this paper. • Data Centres are not a high ESG impact asset class although managers do consider how ESG can be incorporated through implementation. • This should be considered in relation to the general trend towards ESG and incoming TCFD regulations for LGPS.

Isio Recommendation and Next steps

Isio Recommendation

- We believe that Data Centres offer an attractive opportunity for the Fund to drive growth.
- Data centres offer attractive risk/return characteristics and will produce and income for the Fund, while adding an exposure which is not currently present in the portfolio, so offering a differentiated return driver.
- Given the focused nature of the strategy we propose an initial strategic allocation of 2.5% of the Fund (c.£35m) is targeted within the Secure Income allocation. We believe this will also help align the Secure Income allocation to the target over time.
- This allocation could be funded via distributions from the other holdings in the Secure Income allocation coming back to the Fund in coming years with any timing shortfall met via the other liquid assets held by the Fund (cash and/or equities)
- The analysis shows that an allocation would represent a marginal increase from the portfolio's long term risk vs return characteristics, but a good opportunity to drive return in the near term.
- The Committee should also ensure they are comfortable with the other considerations set out in this paper ahead of proceeding.

Next Steps

- The Committee should consider the information contained in this paper alongside the second Isio paper relating to a long list of Data Centre managers (due to be presented at the August 2024 Committee meeting)
- If the Committee are minded to proceed with further due diligence, as a next step, we propose the Committee meet the preferred managers for further due diligence.
- We suggest arranging this "beauty parade" in the short term, given that a final close for the Principal fund is expected to take place at the end of 2024.
- We look forward to discussing this paper further with the Committee..

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Appendices

A1: Asset Class Assumptions

A2: Modelling Methodology

A3: Disclaimers

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A1: 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 4.0% as at 31 March 2024.
    - 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

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A1: 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	0.6%	7.5%
	Corp. Bonds (IG All-Stk) – Active	0.9%	7.5%
	Corp. Bonds (IG >15y) – Passive	0.5%	11.0%
	Corp. Bonds (IG >15y) – Active	0.8%	11.5%
	Absolute Return Bonds	1.5%	4.0%
	Asset-Backed Secs (IG lower risk) [5]	1.0%	2.5%
	Asset-Backed Secs (IG higher risk) [5]	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%
	Private Debt Secondaries	5.0%	11.0%
	Real Estate Debt – Senior	1.8%	6.0%
	Real Estate Debt – Whole Loan	3.5%	9.0%
	Real Estate Debt – Junior	5.0%	14.0%
	Secured Finance (lower risk) [5]	2.5%	6.0%
	Secured Finance (higher risk) [5]	3.3%	8.5%
	Semi-Liquid Credit	3.5%	9.0%
Gilts	Fixed Int. Gilts (>15y) – Passive	0.0%	11.5%
	Index-Linked Gilts (>15y) – Passive	0.0%	12.0%
Cash	Cash	0.0%	1.5%

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A2: Modelling Methodology (1)

Modelling Principles

This report, and the work relating to it, complies with "Technical Actuarial Standard 100: General Actuarial Standards Version 2.0" ("TAS 100").

This report was commissioned by London Borough of Hammersmith & Fulham Pension Fund and has been prepared by Isio in our capacity as external adviser, for the purpose of assisting the Fund in reviewing the feasibility of an investment into Data Centres. If there is a desire to use it for any other purpose or make any other decisions, please inform Isio and we will consider what further information or work may be needed for such purposes or decisions.

The report uses the modelling methodology, assumptions and data that are described below. An alternative methodology of deterministic modelling was considered, but rejected as being over-simplistic for the task at hand. (Deterministic modelling typically uses the Normal distribution to represent risk, which may understate the likelihood of "fat tails", and may fail to capture the asymmetric downside risk of credit defaults). Alternative data and assumptions were not considered, as those used are believed to best represent the initial position and the expected evolution into the future.

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 and the range of variability. The results of the projections are shown by ranking the calculated outcomes from best to worst and presenting the following scenarios:

- 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 ten (10%) 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.

The "Value at Risk", where shown, is defined as the difference between the Median scenario and the Bad or Very Bad scenario, 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.

Investment Strategy Analysis

Different investment strategies are modelled in order to illustrate the effects of different risk/return trade-offs. For each portfolio, the model assumes that the chosen strategy remains fixed over the full projection period. Assets are annually rebalanced back to the original allocation

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A2: Modelling Methodology (2)

Modelling Risk Warnings

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 Economic Scenario Generator 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.

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, fund or mandate 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 investment management. Clients should not make decisions to invest in these asset classes or approaches to investment management based solely on the modelling analysis.

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.

Data Sources

The starting asset value is £1,361.1, sourced from Northern Trust. The starting liability value is £1,440.0m, sourced from Hymans Robertson LLP as part of the July Committee Meeting Pack. The discount rate has been set at 4.4% as per the last actuarial valuation. The liabilities are modelled as discounted cashflows expected to be paid to scheme members in future years. These cashflows are generic cashflows scaled to high-level liability characteristics. Key high-level characteristics of the liability profile, including the split between membership types, and the duration and inflation sensitivity, were taken from the most recent actuarial valuation. We judge that the use of high-level liability information, rather than detailed cashflow projections, is sufficient for the purpose of the modelling in this report.

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A3: Disclaimers

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