

Quarterly Funding & Investment Report

End June 2023



Prepared for: North Yorkshire Pension Fund

Prepared by: Aon

Date: 5 September 2023



For professional clients only

AON

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1. At a glance...

A high level summary of your investments and funding

At a glance...

Funding*

Since the results of the valuation at 31 March 2022 the Fund's ongoing funding level has deteriorated, falling 5% to 111%, and the surplus has decreased by £217M.

This has been primarily driven by a reduction in asset values which has been partially offset by an increase in the discount rate.

Asset Allocation and Implementation

Following a review of the investment strategy, the Committee agreed that no changes were to be made to the investment strategy of the Fund.

A separate paper will be provided to Officers and Committee members, providing an analysis of the Fund's equity allocation, considerations and proposals.

Performance

The Fund outperformed the composite benchmark over the quarter and over the 1 year periods but underperformed over the 3 year period.

Market Background and Investment Outlook

Equity markets continued their rally in Q2 2023 as inflation began to moderate in the majority of economies amidst signs that the global economy continued to be more resilient than previously anticipated. The rally in Information Technology stocks was a major contributor to equity market gains over the quarter as investor excitement over artificial intelligence grew.

Bonds have done badly, especially gilts, and equities have done well, but there are early signs that this divergence is now starting to narrow.

UK inflation has lagged the improvements in its global peers, blame sometimes attaching to high wage inflation. Though headline inflation is falling, concern over lingering high underlying inflation is still with us.



Key actions

1. Committee members to consider the contents of this report, noting the equity allocation analysis will be discussed separately at the September PFC meeting

*The funding update makes allowance for the results of the 2022 valuation of the Fund. This includes a 10% loading for short term inflationary impacts.

Key Stats – Q2 2023

Assets

£4,228m



Assets reduced by £407m since 2022 valuation

£4,635m at 2022 valuation

Funding level

111%



Funding level decreased by 5% since 2022 valuation

116% at 2022 valuation

Return on Assets since 2022 Valuation

-7.0% pa



Current Assets Expected Return (10 year p.a.)

+6.9%



1.0% increase since 2022 Valuation

5.9 % at 2022 valuation

Long-term Strategy Expected Return (10 year p.a.)

+6.9%



0.8% increase since 2022 Valuation

6.1% at 2022 valuation

Discount rate

4.6%



Discount rate has increased by 0.4% since 2022 valuation

4.2% at 2022 valuation

Current Assets Value at Risk (1 Year 1 in 20)

£911m

Long-term Strategy Assets Value at Risk (1 Year 1 in 20)

£812m

Estimated Total Employer cost

16.2%



Estimated Total Employer cost decreased by 1.2% since 2022 valuation

17.4% at 2022 valuation

Note: This funding update rolls forward the results of the 2022 valuation of the Fund. We have made allowance for actual pension increases since the valuation (up to a 10% loading for short term inflationary impacts that was allowed for at the 2022 valuation)



2. Funding

A review of your funding position and contributions

Funding position

Funding level

111%

at end 30 June 2023

Down from 116% at 31 March 2022



Surplus

£423M

at end 30 June 2023

Down from £640m at 31 March 2022



Comments

Since the results of the valuation at 31 March 2022 the Fund's ongoing funding level has deteriorated and the surplus has decreased by £217M.

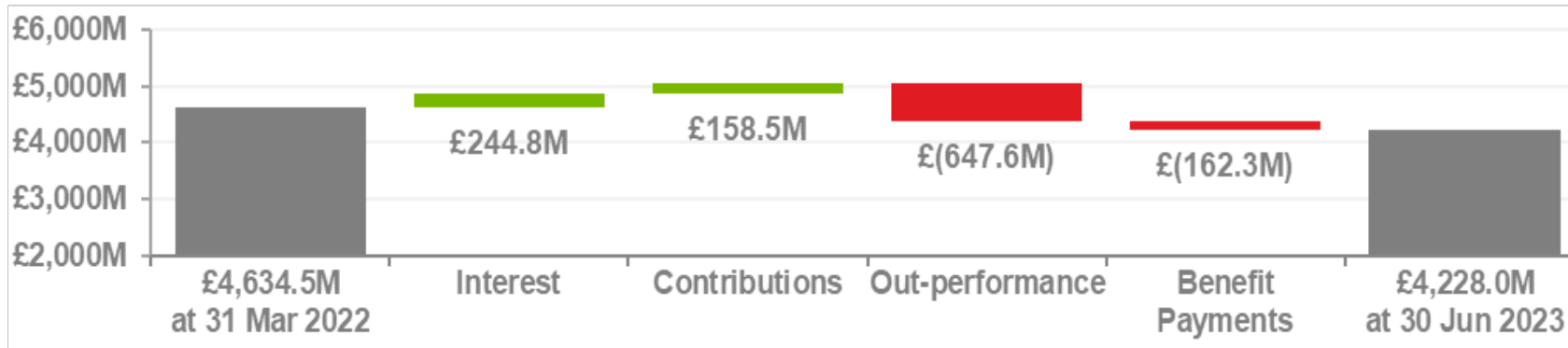
This has been primarily driven by a reduction in asset values although this has been partially offset by an increase in the net discount rate.

Change to funding level since 31 March 2022

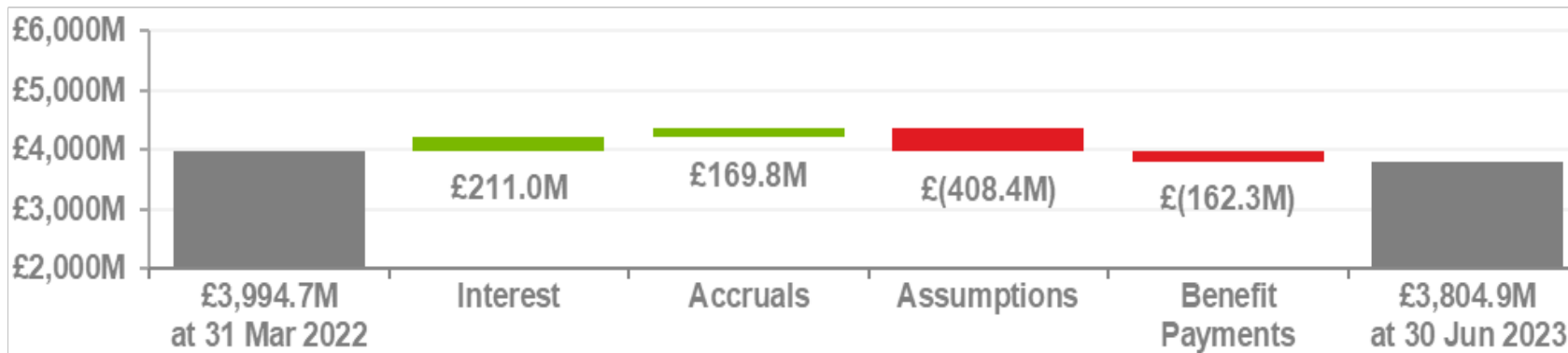


Analysis – ongoing funding target

Reason for change since 31 March 2022 – Asset Attribution



Reason for change since 31 March 2022 – Liability Attribution



Comments

Since the 2022 valuation the surplus has decreased by £217M.

Aggregate Employer contributions – ongoing funding target

Total employer contribution rate

16.2% 

at 30 June 2023

Down from 17.4% at 31 March 2022

Employer cost of accrual

16.7% 

at 30 June 2023

Down from 20.1% at 31 March 2022

Comments

The cost of accrual has decreased since 31 March 2022 due to the increase in net discount rate. However, the surplus has decreased which has offset this to an extent. Overall there is a small reduction in the total employer contribution rate.

Notes

The total employer contribution rate quoted above is based on the average total employer contribution rates across the Fund. Individual employer contributions can be very different to the average figure across the Fund shown above depending on their own characteristics, membership profile and funding target. The individual employer contributions have been reviewed as part of the triennial valuation at 31 March 2022.






3. Asset allocation

A review of your strategic asset allocation

Asset allocation – Q2 2023

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Asset Group	Manager	30 June 2023					Possible action
		Valuation (£m)	Current allocation	Long-term strategy	Difference	Rebalancing Range	
Equities		2,276.3	53.8%	50.0%	+3.8%		
	BCPP UK equity	177.2	4.2%	4.0%	+0.2%	TBC	
	BCPP Global Equity	1,249.7	29.6%	28.0%	+1.6%	+/- 5%	
	Baillie Gifford LTGG	849.3	20.1%	18.0%	+2.1%	+/- 3%	
Absolute Return		7.8	0.2%	0.0%	+0.2%		
	Leadenhall Remote Risk	3.0	0.1%				
	Leadenhall Diversified	3.0	0.1%				
	Leadenhall Nat Cat	1.8	0.0%				
Property		278.0	6.6%	7.5%	-0.9%	TBC	
	Hermes	33.9	0.8%				
	L&G	44.1	1.0%				
	Threadneedle	200.1	4.7%				





Source: Northern Trust, Aon. Note: Numbers may not sum due to rounding.

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Asset allocation – Q2 2023 (cont'd)



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Asset Group	Manager	30 June 2023					
		Valuation (£m)	Current allocation	Long-term strategy	Difference	Rebalancing Range	Possible action
Infrastructure		539.5	12.8%	10.0%	+2.8%		
	BCPP Infrastructure	250.7	5.9%				
	BCPP Listed Alts	268.7	6.4%				
	BCPP Climate Opportunities	20.0	0.5%				
Private Credit		157.1	3.7%	5.0%	-1.3%		
	BCPP Private Credit	112.6	2.7%				
	Arcmont	26.7	0.6%				
	Permira	17.7	0.4%				
Non-Investment Grade Credit		223.4	5.3%	5.0%	+0.3%	TBC	
	BCPP Multi Asset Credit	223.4	5.3%				
Investment Grade Credit		292.6	6.9%	7.5%	-0.6%	TBC	
	BCPP Investment Grade Credit	292.6	6.9%				

Source: Northern Trust, Aon. Note: Numbers may not sum due to rounding.

Asset allocation – Q2 2023 (cont'd)

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Asset Group	Manager	30 June 2023					
		Valuation (£m)	Current allocation	Long-term strategy	Difference	Rebalancing Range	Possible action
Gilts		447.3	10.6%	15.0%	-4.4%	TBC	
	BCPP Index Linked Bonds	447.3	10.6%				
Cash		6.1	0.1%	0.0%	+0.1%	TBC	
	Internal Cash	6.1	0.1%				
Total		4,228.0	100.0%	100.0%			

Source: Northern Trust, Aon. Note: Numbers may not sum due to rounding.

Investment strategy update

Equity allocation analysis

A separate paper will be provided to Officers and Committee members, providing an analysis of the Fund's equity allocation, considerations and proposals.

The following rebalancing activities took place over the quarter:

- £10m was invested into Threadneedle Property Fund.
- £20m was disinvested from Border to Coast Listed Alternative Fund.
- Border to Coast made 26 capital calls and 15 distributions for Infrastructure over the quarter totalling £31m, 17 capital calls and 17 distributions for Private Credit totalling £9m, and 7 capital calls for Climate Opportunities totalling £4m.
- Permira made 2 distributions for Private Credit over the quarter totalling £5m.

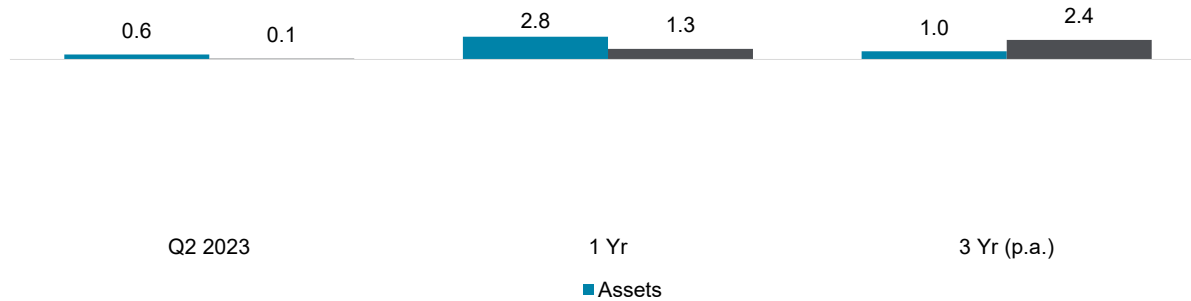


4. Fund performance

A review of your investment performance

Total Fund performance – Snapshot

Fund performance & benchmark



Quarterly (relative)

0.5%



The Fund outperformed the benchmark returning 0.6% vs 0.1% over the quarter.

3 year (relative)

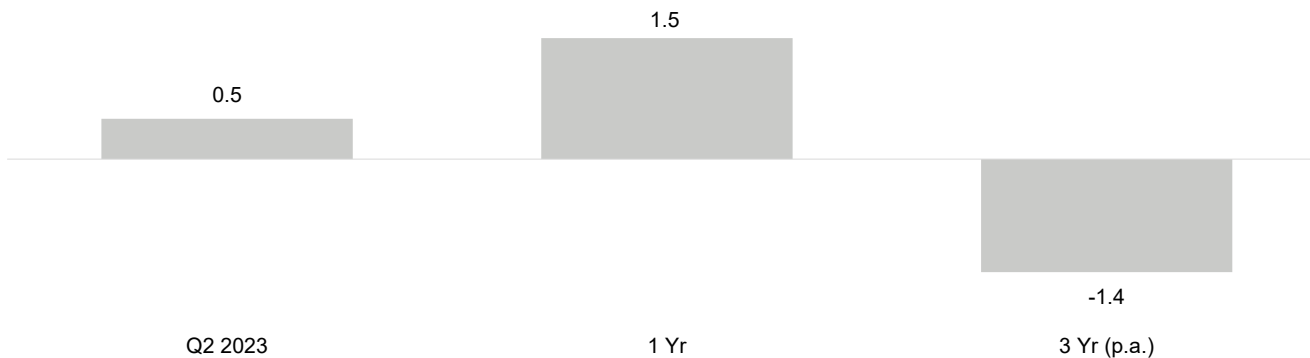
-1.4%



Over 3 years the Fund has underperformed the benchmark returning 1.0% vs 2.4%.

Relative performance

Relative Return (%)



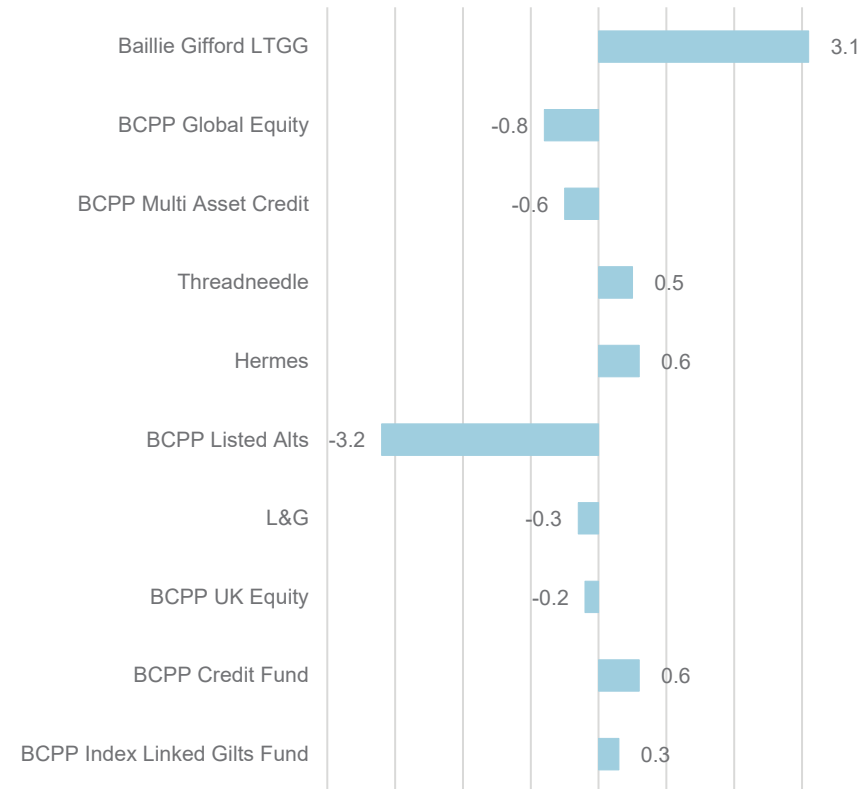
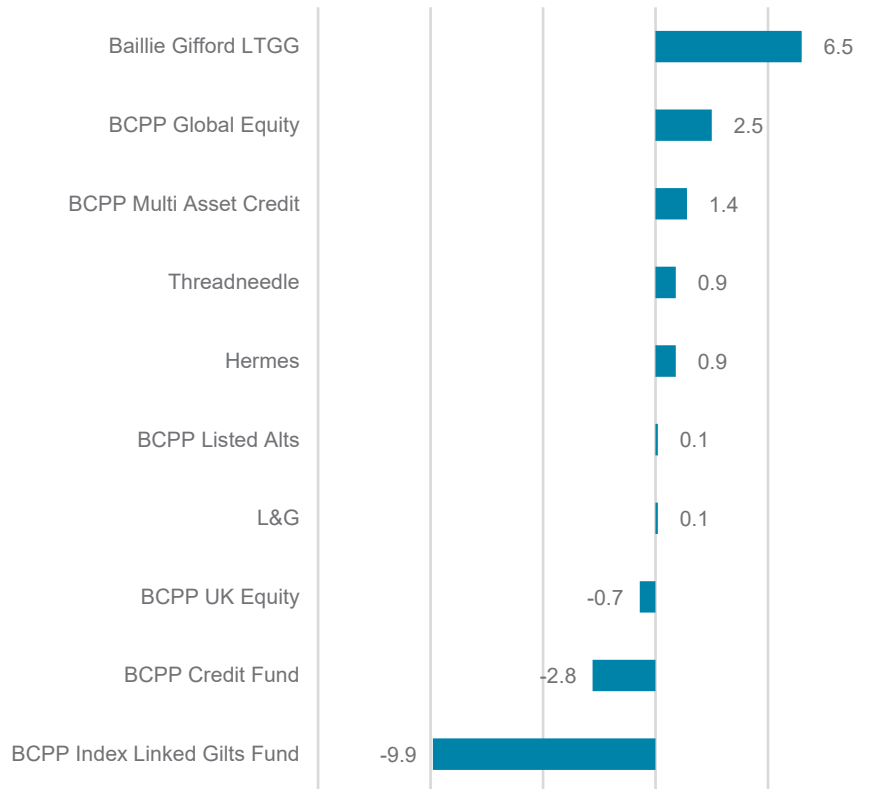
Comments

Total Fund performance is behind the composite benchmark over 3 year period but ahead over the quarter and 1 year periods to 30 June 2023.

Manager performance – Quarter Snapshot

Absolute performance

Relative performance



Source: Northern Trust, Managers, Aon.

Note: Infrastructure and Private Credit returns not shown during initial investment drawdown phase. Performance for Leadenhall is not shown as mandates only hold residual assets. Hermes, L&G, Threadneedle; MSCI data was used for fund performance and benchmarking purposes, total fund performance calculated using Northern Trust data.

Manager performance – Longer term

	1 Year (%)			3 Years (% p.a.)			Since inception			Inception date
	Perf	B'mark	Rel	Perf	B'mark	Rel	Perf	B'mark	Rel	
Equity										
UK Equity										
BCPP UK Equity	11.4	7.9	+3.5	8.9	10.0	-1.1	2.7	3.7	-1.0	Jun-19
Global Equity										
BCPP Global Equity	15.9	11.3	+4.6	11.7	10.2	+1.5	9.3	9.5	-0.2	Oct-19
Baillie Gifford LTGG	18.1	11.7	+6.4	0.2	10.4	-10.2	14.4	9.4	+5.0	Sep-06
Property										
Hermes	-16.8	-17.1	+0.3	3.2	3.3	-0.1	-	-	-	Mar-12
L&G	-17.1	-17.4	+0.3	3.3	3.4	-0.1	-	-	-	Dec-12
Threadneedle	-16.9	-17.4	+0.5	3.8	3.4	+0.4	-	-	-	Jun-12
Infrastructure										
BCPP Listed Alts	-2.3	11.3	-13.6	-	-	-	-5.6	2.3	-7.9	Feb-22
Investment grade credit										
BCPP Investment Grade Credit	-5.7	-6.9	+1.2	-	-	-	-5.7	-7.0	+1.3	Aug-20
Non-investment grade credit										
BCPP Multi-Asset Credit	6.4	6.7	-0.3	-	-	-	-4.3	-	-	Nov-21
Gilts										
BCPP Index Linked Bonds	-26.7	-26.9	+0.2	-	-	-	-19.6	-20.5	+0.9	Oct-20
Total	2.8	1.3	+1.5	1.0	2.4	-1.4	6.9	7.2	-0.3	Jan-02

Source: Northern Trust, Managers, Aon. Numbers may not sum due to rounding.

Note: Hermes, L&G, Threadneedle; MSCI data was used for fund performance and benchmarking purposes. BCPP Infrastructure returns and BCPP Private Credit returns not shown during initial investment drawdown phase. Performance for Leadenhall is not shown as mandates only hold residual assets.

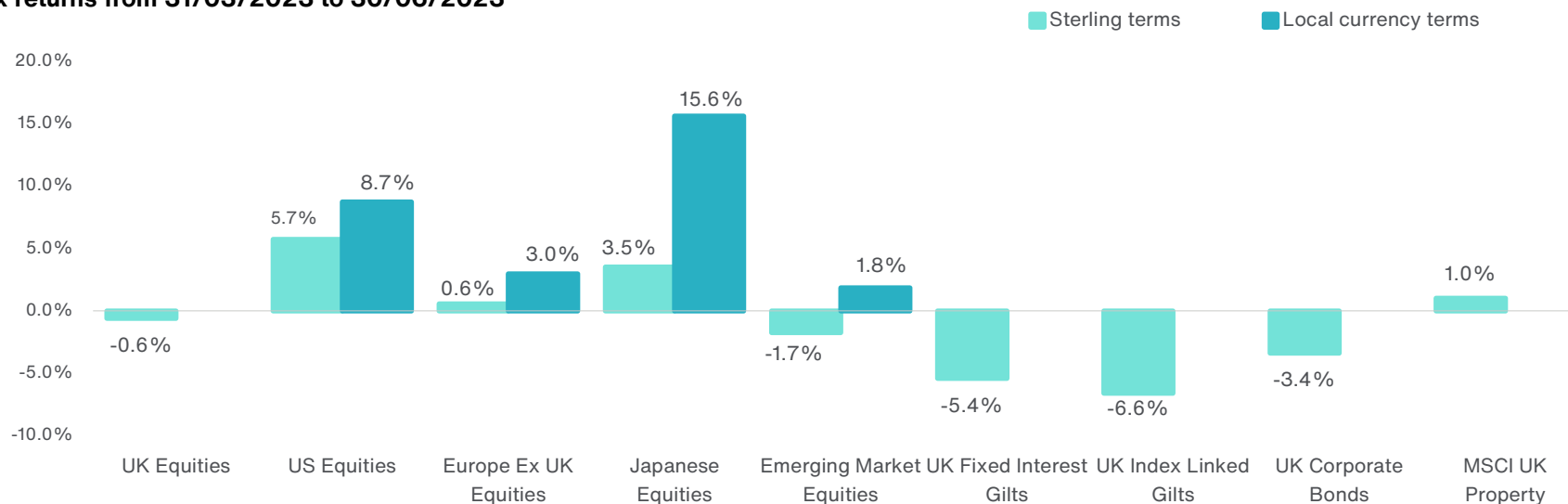


5. Market background and investment outlook

Aon's views on the market outlook and snapshot of investment markets and key economic data

Market – Background Q2 2023

Index returns from 31/03/2023 to 30/06/2023



Sources: FactSet, MSCI (Equities, Property), FTSE (Gilts), iBoxx (Credit).

Equities

The MSCI AC World index posted a 6.7% return in local currency terms. However, sterling appreciation against the US dollar pushed returns in sterling terms down to 3.4%.

UK equities were the only developed market to deliver negative returns in local terms in Q2 2023. Comparatively higher exposure to the Commodities sector and lack of exposure to the Information Technology sector led to the relative underperformance of the UK equities compared to its developed market peers.

Bonds

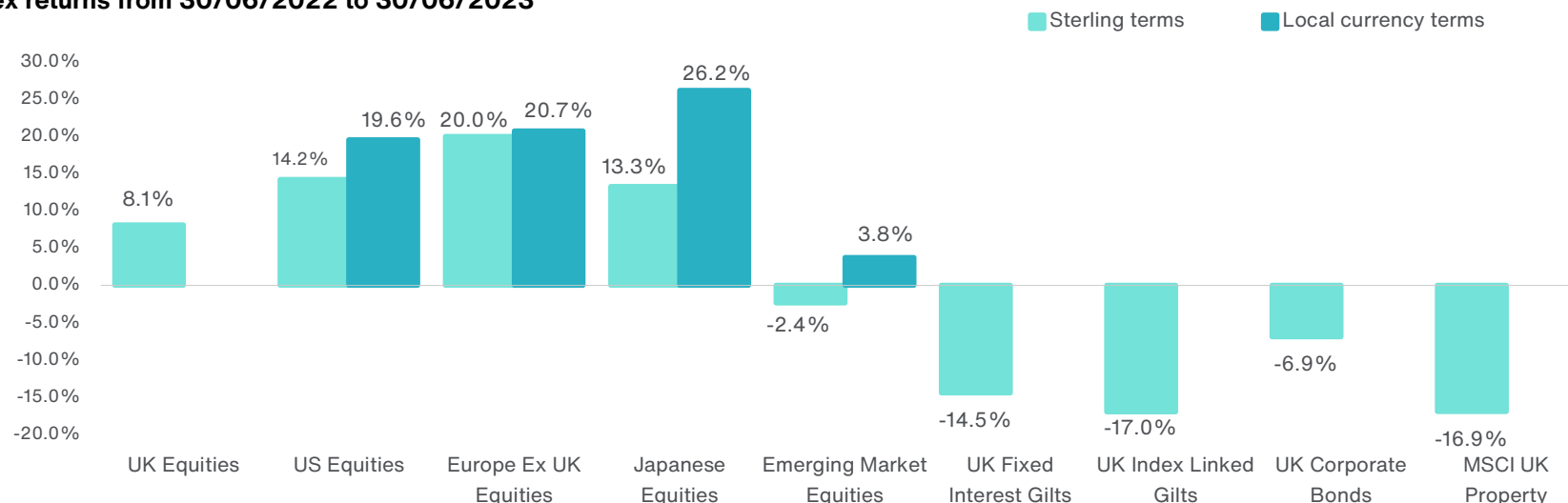
UK investment grade credit spreads fell by 0.11% to 1.55%, based on the IBoxx Sterling Non-Gilts index. Higher-quality bond credit spreads contracted less than their lower-quality counterparts, with AAA-rated non-gilt spreads falling by 0.07% to 0.53% whilst BBB-rated non-gilt spreads fell by 0.14% to 2.24%. The IBoxx Sterling Non-Gilts Index posted a return of -3.4% as rising government bond yields offset contracting spreads and the income yield.

Gilts

The UK nominal gilt curve rose across all maturities with yields rising more at the short end of the curve relative to longer maturities.

Market – Background 12 month

Index returns from 30/06/2022 to 30/06/2023



Sources: FactSet, MSCI (Equities, Property), FTSE (Gilts), iBoxx (Credit).

Equities

Global equities generated strong positive returns over the last twelve months, recovering after suffering a sharp sell-off in the first half of 2022 due to Russia’s ongoing invasion of Ukraine and the start of tighter monetary policy in response to elevated inflationary pressures. Equity markets rebounded particularly over the last nine months as the global economy appeared more resilient than previously anticipated and inflation began to moderate in the majority of economies. The rally in Information Technology stocks was a major contributor to equity market gains in 2023 as investor excitement over artificial intelligence grew.

Bonds

Credit markets declined over the past twelve months. UK investment-grade credit spreads (the difference between corporate and government bond yields), based on the iBoxx Sterling Non-Gilt Index, narrowed by 0.2% to 1.55% but the index still declined 6.9% on rising gilt yields.

Gilts

The UK gilt curve rose across all maturities over the year as inflationary concerns drove yields higher. In September 2022, the BoE temporarily announced an emergency £65bn bond-buying programme to stabilise the government debt market after an unexpected expansionary fiscal package was announced. The package increased investor concern over the sustainability of public finances, resulting in a considerable spike in yields. The sharpness of the sell-off was exacerbated by the forced unwinding of LDI positions, as UK pension schemes worked to provide collateral to LDI managers following sharp yield increases. However, in the fourth quarter, yields fell back across the curve following a government U-turn on fiscal policy and Liz Truss’ resignation as prime minister.

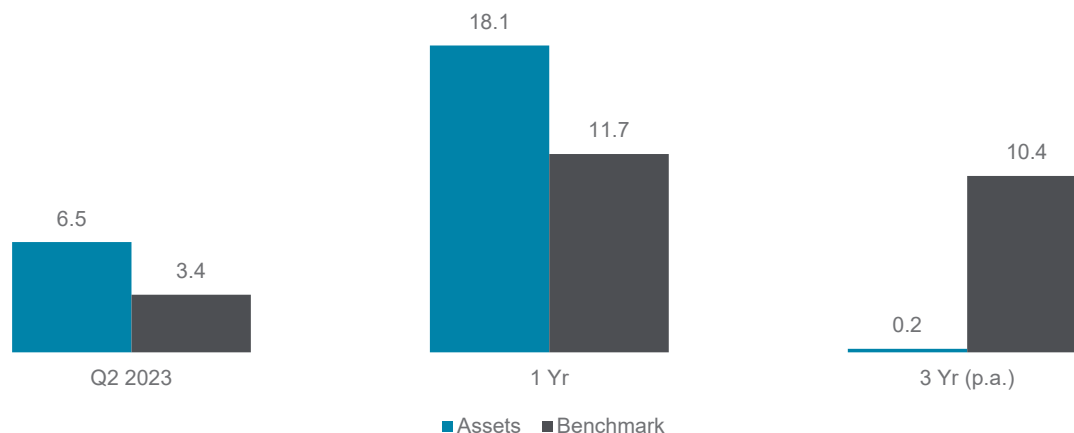
- Bonds have done badly, especially gilts, and equities have done well, but there are early signs that this divergence is now starting to narrow.
- UK inflation has lagged the improvements in its global peers, blame sometimes attaching to high wage inflation. Though headline inflation is falling, concern over lingering high underlying inflation is still with us.
- After a strong sell-off in gilts through Q2, which took implied interest rate paths too high, yields have looked good value for those wanting to take hedging ratios higher or raise duration in sterling bond portfolios.
- We note how rising longer-dated yields in the 2021-3 period have almost entirely been driven by rising real yields. Implied inflation in bond markets has barely risen, even after several years of high inflation.
- We consider the implications if this implied bond market view is correct – good news on inflation, yes, but less good news for economies as these higher real yields would keep after-inflation borrowing costs far higher than in earlier years.
- Higher bond yields also pose challenges across the asset class spectrum since this lower risk investment is now clearly better remunerated than for many years. Relative rewards for risk-taking have fallen – equities and commercial property show bond-relative valuations as not very attractive.
- Credit is still something of a mixed story, with reasonably attractive yields (especially for the UK), but with spreads at best middling.
- We regard sterling's rise this year, supported by higher actual and anticipated interest rates, to have run its course. Portfolio positions now need to limit sterling exposures to strategic hedging needs only.



6. Manager review

Aon ratings and understanding manager performance

Fund performance & benchmark



Performance comments

Whilst the growth investment factor outperformed in the period, this belied a narrower trend of seven US technology / AI related stocks delivering almost all equity returns.

The LTGG portfolio is reasonably well-exposed to this segment of the market, and, as such, enjoyed positive attribution from names such as NVIDIA and Amazon. However, this was partially offset by underperformance in Chinese associated stocks such as Meituan, Alibaba, Kering, Tencent and PDD Holdings, which have stuttered over fears of a slower market recovery.

The Chinese exposure remains under close consideration, though far lower than it has been, at around 15% it still represents a large overweight and is an exception to typical global equity strategy positioning.

Buy

Reviewed: July 2023

Ratings detail

ODD:	A1 pass	Risk:	●●●●●
Business:	●●●●●	Perf:	●●●●●
Staff:	●●●●●	Terms:	●●●●●
Process:	●●●●●	ESG:	Integrated

Key info

Appointed: 29 September 2006

Vehicle: Baillie Gifford Long Term Global Growth (+3% over 5-10yrs)

Mandate: Global Unconstrained Equities

Benchmark: FTSE All World Index from 31 March 2008

Target: To outperform the benchmark by 3% p.a. over rolling three-year periods.

Baillie Gifford – LTGG (cont.)

Positioning and Transactions

Two holdings were purchased in the period: Datadog and Joby Aviation.

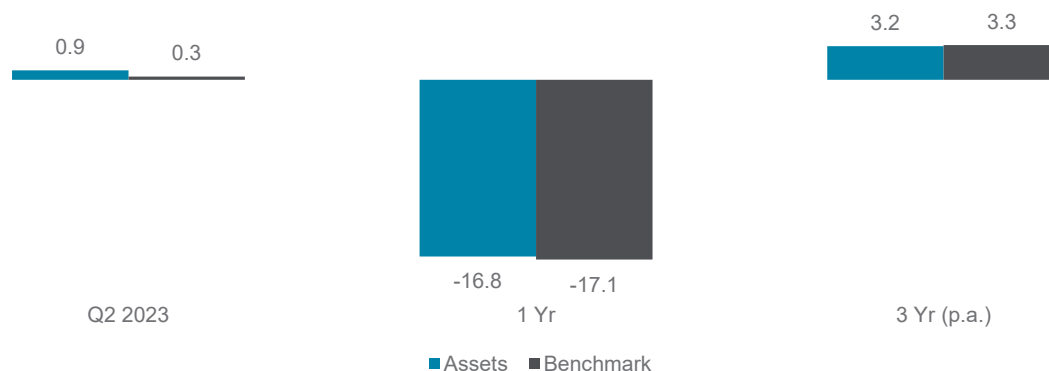
Datadog is a software provider which monitors IT applications to optimise their cost and performance. Joby is developing an electric vertical take off and landing aircraft. This is an early-stage idea, which will be sized commensurately in the portfolio, and is unlikely to be adjusted up in size until its business is more proven.

Carvana and Zoom have been sold. Carvana has been sold as the company struggles to balance profitability against overall growth. Given the lower growth profile, the company has been sold to make way for new ideas.

Zoom has been sold, with the team also viewing high levels of long term growth to be more challenging as the remote working reform has essentially now happened.

Hermes – Property Unit Trust

Q2 Fund performance & benchmark



Buy

Reviewed: May 2023

Q1 2023 Monitoring comments

The performance of the Fund and the property market has been impacted by rapidly rising interest rates, increased borrowing costs, economic uncertainty and UK pension funds looking to exit real estate as they de-risk and look for liquidity.

The Fund's industrial assets continued to underperform in Q1 2023, following the large outward yield expansion in the previous quarter. The Fund's industrial portfolio has seen a 28% price correction since Q2 2022 (on a like for like basis), resulting in -20.5% total return.

The largest detractors to performance over the 12-month period was the Fairway Trading Estate (-33.1%) and the M2 City Link in Rochester (-31%). Overall, the Fund maintains an underweight holding to the industrial sector versus the benchmark at 33.5% vs 37.8%, which was accretive to relative performance over the quarter.

Despite the sharp correction in industrial valuations, given their low yields, the industrial sector is still expected to provide strong rental growth over the medium term.

In contrast to the above, West End Offices returned 3.8% over the 12-month period with Great George Street London office the main contributor to returns in the office portfolio, returning 10.7%.

The Fund remains focused on rental collection. As at 90 days post quarter end, the Fund has collected 99% of outstanding rent for Q1 and 85% of rent demanded for Q2 after 21 days. This is broadly in line with the previous quarter. Portfolio Vacancy currently stands at 13.4%, up on the previous quarter, with 8.8% being strategic void under refurbishment.

The Fund remains a committed seller to address the outstanding redemption queue and has a clear sales strategy to do so.

Key info

Appointed: 27 February 2012

Vehicle: Property Unit Trust

Mandate: UK Property Pooled Fund

Benchmark: IPD Other Balanced Property Fund Index

Target: To Outperform the benchmark by 0.5% over three year rolling periods.

Hermes – Property Unit Trust (cont.)

Q1 2023 Monitoring comments (cont.)

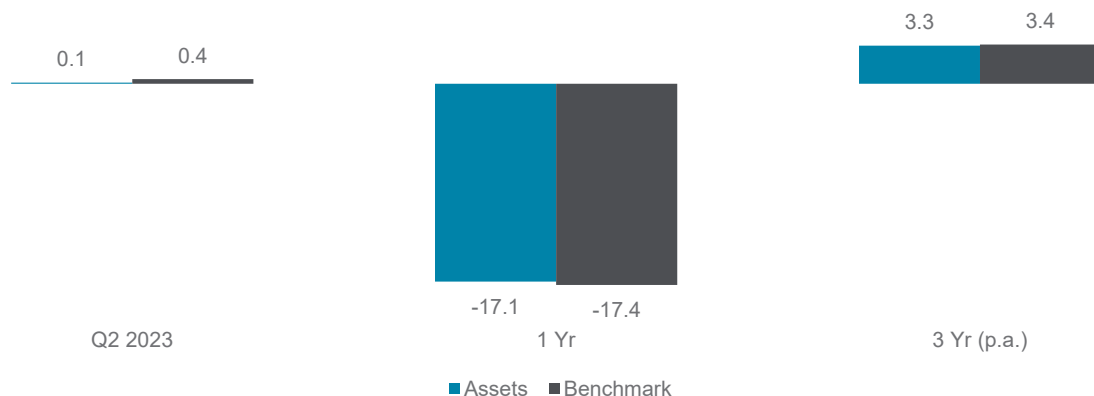
Great Gorge Street has been earmarked for sale with a valuation of C.75 million, which has remained stable on the back of its likely alternative use as a hotel. The sale of this asset will reduce the Funds vacancy rate by 4.4%. The Fund sold two assets over the quarter for a total of £31.3 million. The Fairway Trading Estate, Green Lane, Heathrow sold for a total of £25 million, reflecting a net initial yield of 5%, in line with the most recent valuation. The remaining £6.35 million was generated from the sale of the Cobham & Weybridge Pub portfolio. The purchaser in each was the current undertenant, Brasserie Bar Company, reflecting the focus on converting special purchaser interest on asset sales.

Q1 2023 Major Developments

There are no major developments to report over the quarter, but the Manager continues to defer redemptions. Outstanding redemptions stand at £186 million.

LGIM – Managed Property Fund

Q2 Fund performance & benchmark



Qualified

Reviewed: May 2023

Q1 2023 Monitoring comments

The Manager continues to have a largely negative view on the retail sector, particularly shopping centres and high street retail, despite forecasting that the relative performance gap will continue to narrow vs All Property. The Fund will therefore continue to be marginally underweight to retail assets, currently at 17.1% vs the benchmark weighting of 18.8%.

Despite this cautious outlook the Manager remains relatively positive on retail warehousing, which is proving to be resilient following a pick-up in consumer sales. The Manager also has a positive view on leisure assets, especially those located in core locations. LGIM forecasts that this segment will outperform All Property over the next 3 years and offer an attractive yield profile, also presenting opportunities for asset management initiatives.

Leisure assets remain the largest alternatives holding, (c.40%) with an overall alternative

weighting of 14.8% vs the benchmark at 12.1%, with the Manager highlighting the compelling relative value case and attractive yield profile.

The Fund is also materially underweight to office vs the benchmark (21.1% vs 24%) which was the largest detractor to performance over the quarter.

The Manager also continues to favour other areas of the alternative sector, forecasting outperformance in the near-term vs traditional sectors. Most notably, the Manager has a desire to increase the Fund's exposure to student accommodation and urban residential, the latter through its recent allocation to LGIM's Build to Rent (BTR) Fund. As previously mentioned, the Manager has previously looked to increase the portfolio's industrial exposure in the past. However, pricing expectations of sellers remains a concern.

Key info

Appointed: 1 November 2012

Vehicle: Property Fund

Mandate: UK Property Pooled Fund

Benchmark: IPD All Balanced Property Fund Index

Target: To outperform the benchmark by over three year rolling periods.

LGIM – Managed Property Fund (cont.)

Q1 2023 Monitoring comments (cont.)

The Manager also believes that the Fund's current industrial holdings are of good quality and focussed in the South-East with further room for rental growth. The underweight position to industrials now stands at (33.4% versus 37.8%).

The Fund void rate has increased to 11.3%, up from 10.1% last quarter. This increase is largely due to three expected vacancies at the industrial holding in Basingstoke. The Fund's cash level remains considerably above the benchmark at 13.5% (as a % of GAV) vs 7.2%, following large DC pension inflows into the Fund.

Q1 2023 Transactions

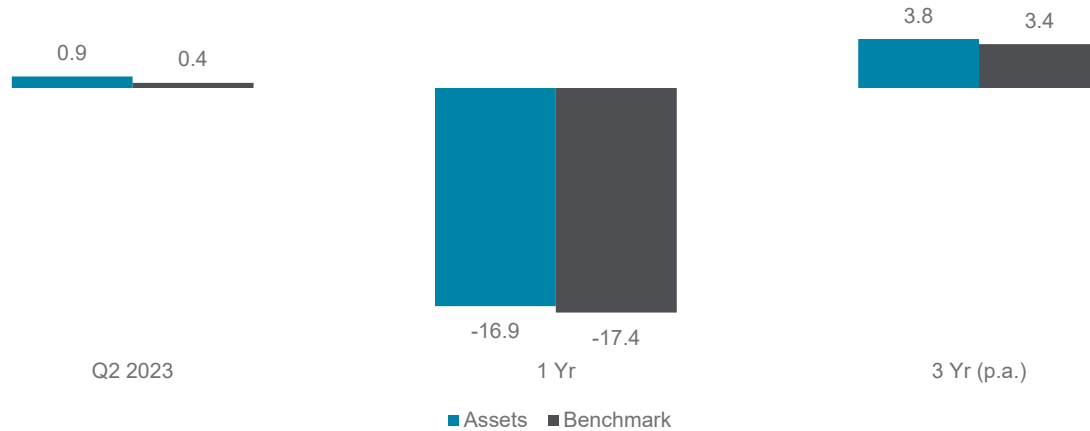
Two transactions occurred over the quarter one residential commitment and one industrial disposal.

The Fund made a £50 million commitment to the L&G BTR Fund, of which £25 million was drawn in Q1, with the remaining £25 million likely to be drawn in Q2, providing the Fund with immediate exposure to the residential sector and a day one stabilised income stream.

The Fund sold Crossflow 180 in Coventry for £17.5 million, reflecting a Net Initial Yield of 5.1% and a capital value of £97 ps ft. Despite the asset outperforming the All-Property Index (8% p.a) delivering 9.6% pa over its lifecycle, the sale was consistent with the Fund's preference for multi-let industrial/ urban logistics over out of town, single-let distribution logistics.

Threadneedle – TPEN

Q2 Fund performance & benchmark



Buy
Reviewed: June 2023

Q1 2023 Monitoring comments

Despite the redemptions received and the fall in real estate prices, the NAV of the Fund remains at a level that we are comfortable with. At the end of the quarter the NAV stood at £1.6 billion.

With regards to sector weightings, the Fund remains overweight to industrials (47% versus 41.7%), which should benefit performance over the short and medium terms. The Manager will continue to dispose of industrial assets where capex requirements outweigh the investment upside.

The Fund also maintains a meaningful allocation to the retail warehouse sector, albeit only marginally higher than the benchmark (14% versus 13.5%). The Fund does have a material overweight position to town centre offices at 19% (benchmark, 14.5%), with the Manager actively looking to reduce this overweight position over the remainder of 2023.

The Fund continued to sell assets over Q1 2023 to pay redemptions and build up liquidity.

The Fund disposed of seven sales, totalling £13.7 million which were at an average discount of 2% to their holding value. This compares to average discount of 10% to book value for the assets sold over Q4 2022, reflecting the situation that speed of valuation declines had slowed markedly over the start of 2023. At the end of the quarter the Fund’s liquidity position stood at C.£45 million, or 2.9% of net assets.

The majority of the sales (five) over the quarter were smaller old industrial assets which had completed their business plans and were weaker from an ESG perspective and given their lot size were still liquid in the current market.

Key info

Appointed: 21 June 2012

Vehicle: Property Fund

Mandate: UK Property Pooled Fund

Benchmark: IPD All Balanced Property Fund Index

Target: To outperform the benchmark by 1 to 1.5%.

Threadneedle – TPEN (cont.)

Q1 2023 Monitoring comments (cont.)

The Manager's goal continues to be to dispose of weaker assets, especially weaker retail and office assets. The strategy is to dispose of these assets despite the current market conditions given the expectation that as the year progresses more office assets will put on the market.

No assets were acquired during the quarter.

Major Developments

During September the Manager took the decision to defer redemptions from October given the elevated level of redemption requests the Fund received and the uncertainty and lack of liquidity in the property market. Individual DC members trading within their historical levels were not captured by this action. At the end of the quarter TPEN had cleared its outstanding redemption queue. The Manager has not lifted the deferral to build up its cash position.

BCPP – Quarterly high level monitoring (Q2 2023)

Changes to views of External Managers

- BCPP Global Equity Alpha
 - Loomis Sayles: The manager was first placed on the Watchlist in Q1 2023 due to resignations and departures from their dedicated analyst team. BCPP have held several engagements with the CEO, CIO and the investment team at Loomis around their thoughts on challenges in recruitment and retention. BCPP are continuing resourcing of the team and will provide an update to Partner Funds at the next quarterly update.

Border to Coast Pensions Partnership – RI Quarterly Report Snapshot

UK Equity Alpha Fund

Fund	Q2 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
UK Equity Alpha	51.9	7.8
Benchmark (FTSE All Share)	112.9	7.9

Global Equity Alpha Fund

Fund	Q2 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Global Equity Alpha	82.4	7.1
Benchmark (MSCI ACWI)	134.4	6.8

Sterling Investment Grade Credit Fund

Fund	Q2 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Sterling Investment Grade Credit	67.6	7.2
Benchmark (iBoxx Sterling Non Gilt Index)	74.8	7.6

Listed Alternatives Fund

Fund	Q2 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Listed Alternatives	183.0	7.2
Benchmark (MSCI ACWI)	134.4	6.8

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7. Further information

Key reference information about your scheme

Explanation of Ratings – Overall ratings

Overall ratings

An overall rating is then derived taking into account both the above outcomes for the product. The table lists how the overall rating can be interpreted.

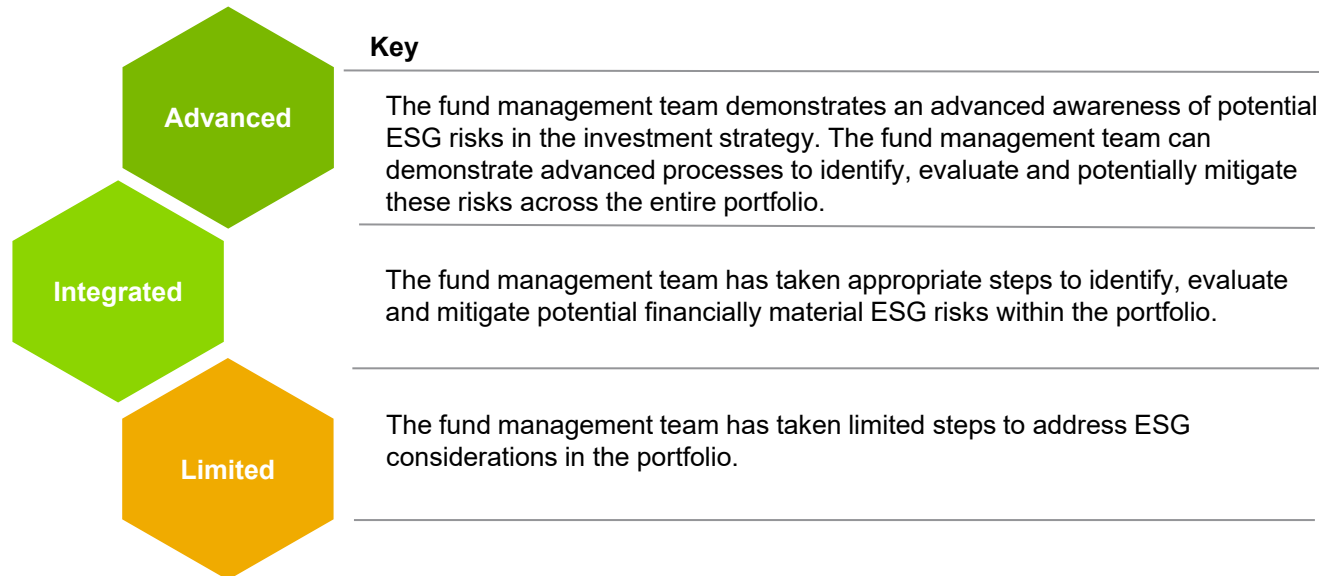
The comments and assertions reflect our views of the specific investment product and our opinion of its quality. Differences between the qualitative and Aon InForm outcome can occur and if meaningful these will be explained within the Key Monitoring Points section. Although the Aon InForm Assessment forms a valuable part of our manager research process, it does not automatically alter the overall rating where we already have a qualitative assessment. Overall rating changes must go through our qualitative manager vetting process. Similarly, we will not issue a Buy recommendation before fully vetting the manager on a qualitative basis.

Overall Rating	What does this mean?
Buy	We recommend clients invest with or maintain their existing allocation to our Buy rated high conviction products
Buy (Closed)	We recommend clients invest with or maintain their existing allocation to our Buy rated high conviction products, however it is closed to new investors
Qualified	A number of criteria have been met and we consider the investment manager to be qualified to manage client assets
Not Recommended	A quantitative assessment of this strategy indicates it does not meet our desired criteria for investment. This strategy is not recommended.
Sell	We recommend termination of client investments in this product
In Review	The rating is under review as we evaluate factors that may cause us to change the current rating

Explanation of Ratings – Overall ratings

ESG Factor

The ESG factor is assigned a rating and can be interpreted as follows:



Method

The funding update has been prepared in accordance with the framework below.

- This funding update is consistent with the calculations for the results of the actuarial valuation as at 31 March 2022. The assumptions used have been modified only insofar as is necessary to maintain consistency with the approach set out in the latest Funding Strategy Statement, reflecting the change in the effective date and in relevant market conditions.
- The funding update is projected from the results of the actuarial valuation as at 31 March 2022 valuation and is therefore approximate. Since the update is not based on up-to-date membership data, it becomes more approximate the longer the period of time that has elapsed since the last actuarial valuation.
- The funding update takes account of the following over the period since the last formal actuarial valuation:
 - Cashflows into and out of the Fund estimated based on the 2022 valuation results;
 - Actual price inflation and its impact on benefit increases.
- Demographic experience since the last formal actuarial valuation has been assumed to be in line with the assumptions set out in the 2022 Valuation report.
- This update is designed to give a broad picture of the direction of funding changes since the actuarial valuation but does not have the same level of reliability as, and therefore does not replace the need for, formal actuarial valuations.
- It does not reflect any changes to assumptions which would be made if a full actuarial valuation were to be carried out to reflect, for example, changes to the investment strategy or economic outlook.
- For the purpose of this funding update, we have used an un-audited value of the assets as at 30 June 2023 provided by the Administering Authority.
- The whole of fund total employer contribution rates shown in this funding update allow for a recovery period ending 31 March 2041 and allow for any surplus in excess of 110% to be recovered as set out in the Funding Strategy Statement
- The assumptions used in this funding update are as follows:

	Discount rate	Pay growth	Pension increases *
31 March 2022	4.20%	3.55%	2.30%
31 March 2023	4.70%	3.55%	2.30%
30 June 2023	4.60%	3.35%	2.10%

* Plus an allowance for short term inflationary increases

Risk/Return Assumptions



- The table to the right sets out the 10-year median returns and volatility assumptions in absolute terms used in the modelling.
- Assumptions are based on Aon's Capital Market Assumptions as at 30 June 2023
- Allocations modelled are those set out in the main body of this presentation. Allocations are assumed to be annually rebalanced.
- Allowance for active management is made in some of the assets classes, in particular where there is no real passive version of the asset, for example private equity funds.
- Unless stated otherwise, all returns are net of underlying manager fees.

High level asset class	Expected Return	Expected Volatility
Equities	6.8%	18.9%
Property	6.0%	12.5%
Infrastructure	7.6%	15.8%
Listed alternatives	6.7%	19.2%
Illiquid credit	8.4%	6.0%
Investment grade credit	5.8%	9.4%
Non-investment grade credit	6.9%	9.4%
Absolute Return	6.8%	5.2%
Gilts	3.5%	9.7%
Cash	4.2%	1.6%

Note: all statistics are 10 year median expected returns/volatility of returns.

Correlation Table

High level asset class	Equities	Property	Infrastructure	Listed Alternatives	Illiquid credit	IG Credit	Non-IG Credit	Absolute Return	Gilts	Cash
Equities	100%	38%	62%	100%	27%	3%	54%	21%	-8%	-1%
Property		100%	19%	36%	28%	5%	28%	9%	-1%	7%
Infrastructure			100%	63%	15%	3%	22%	20%	-3%	3%
Listed Alternatives				100%	26%	3%	54%	21%	-8%	-1%
Illiquid credit					100%	55%	65%	18%	8%	31%
IG Credit						100%	25%	18%	52%	42%
Non-IG Credit							100%	17%	1%	9%
Absolute Return								100%	10%	35%
Gilts									100%	32%
Cash										100%

Data and assumptions

Date of calculation	30 June 2023
Number of simulations	5000
Time horizon	10 years
Asset value	£ 4,228,035,902



- Infrastructure is modelled as a blend of 37.5% EU and 62.5% US Infrastructure in line with BCPP's mandate.
- Listed Alternatives are modelled as passive global equities (including emerging markets).
- Private Credit modelled as combination of 2/3 Senior Direct Lending (for Arcmont and Permira) and 1/3 Whole Property Debt (for BCPP).
- Gilts are modelled as a 62.9% 15 year index-linked gilts and 37.1% 20 year index-linked gilts.
- Property is modelled as UK Property.
- Liquid IG Credit modelled as UK corporate bonds (A-rated with average duration of 10 years)
- Liquid Non-IG Credit modelled as high yield multi-asset credit.
- Absolute Return is modelled as Leadenhall Insurance Linked Securities modelled as an equal blend of Aggressive, Conservative and Moderate ILS.
- The Fund has an allocation to Equities which make up 50% of the long term allocation.
- For modelling purposes (and for consistency with the approach taken by the Actuary) we do not allow for any outperformance from active management (alpha).
- We have not allowed for the impact of equity protection on the risk and return of the portfolio
- Equities have been modelled using region splits in line with the long term allocation:

Passive UK Equity	10%
Passive Global Equity (including Emerging Markets)	90%

Purpose, key assumptions and judgements of the model



The purpose of this analysis is to consider and monitor the return and risk characteristics of the current and long term investment strategy of the Fund. The key assumptions and judgements of the model are set out below and we believe are reasonable for the intended purpose.

- The calculation considers (5000 stochastic) simulations of annual absolute returns over the period modelled. The simulations are constructed using Aon's Stochastic Asset Model, further details and assumptions are outlined in this appendix.
- A liability proxy is not considered.
- Allocations are assumed to be annually rebalanced, in practice this may not always be possible for illiquid assets.
- The calculations do not take into account any cashflows payable.



Limitations



Material risks to the Fund include covenant, longevity, market, inflation, contributions, expenses and liquidity.

- Our stochastic scenarios include market risk only, and this risk is present in the distribution of returns and is reflected in the risk metrics shown. Market risk has been calculated on an asset only basis.
- This modelling does not cover liability basis, inflation, covenant, longevity, contributions, expenses and liquidity risk. When using the modelling analysis, the user should consider how these risks apply and whether they are material to the decisions under consideration.

There are other factors that could materially affect the Fund's funding and strategy decisions, or the exposure or realisation of the risks above:

- These other factors include external factors such as climate change or political, regulatory and legislative change.
- The general risk factors of economic or technological change are reflected in our economic assumptions and the prevalence of extreme events in our economic model, but not all specific risks can be captured (e.g. disruptions to the financial system, or technological change leading to improvements in longevity).
- There are other risks to which the Fund is exposed that we assume are not material to long-term funding and investment strategy decisions, such as timing of member options or operational risks.



Limitations (continued)



There are necessarily some limitations associated with the stochastic scenarios calibrated to Aon's Capital Market Assumptions used for asset-liability modelling.

- **CMAs and asset-liability modelling.** Asset-liability projections rely on views of the future and whilst median projections are our Aon-house views (intended to reflect no bias), we do not know what will materialise in practice (for example it cannot be predicted exactly how the equity market and bond market will develop over the next year). To help build up a more complete picture of possible outcomes, we project assets and liabilities stochastically with the aim of capturing the uncertainty associated with the projections. This approach is designed to be coherent with each asset being calibrated to target a CMA median return, volatility and set of interdependencies (correlations) assumptions. Nevertheless, there remain some limitations, including but not limited to those set out below.
- Whilst Aon's CMA assumptions are supported by historical data, current financial market prices and expert views there are necessary some limitations in the analysis, including, but not limited to, the following:
 - **Long-term versus short-term.** The stochastic scenario calibration primarily seeks to capture a realistic long-term distribution of outcomes but is also mindful of short-term risk behaviours. These, sometimes competing, objectives can lead to some trade-offs within stochastic scenario calibration and the requirement for significant expert judgement. Where significant focus is applied to an individual asset class, particularly for more extreme outcomes, the user should bear this limitation in mind, and/or may wish to consider the use of deterministic scenarios.
 - **Only 5,000 scenarios are produced.** There is necessarily a trade-off between running more scenarios and spurious accuracy. Notably as you approach extreme tails, i.e., 1-200 this is an area of the distributions where there is insufficient market information to apply rigorous statistical analysis to explicitly calibrate models to, as such seeking to define the model outcome with a high degree of confidence is to some extent spurious and will be heavily driven by model selection.
 - **Data used for the CMAs may be limited and/or be subject to interpretation for relevance today.** The issues that arise from a lack of or poor historical data may be compounded by changing context. For example, for part of the last 100 years the UK was either on the gold standard or a quasi-gold standard, which is a very different economic framework than floating currencies. This obviously creates significant issues for the relevance of any cash rate and bond yield data.
 - **Defined randomness rather than chaotic behaviour.** The model, by necessity, assumes an underlying distribution of returns and yields. This presumes the underlying asset returns are random in nature rather than deterministic and chaotic. In a deterministic and/or chaotic framework the concept of a 1-in-X event has no meaning and so is not used in this modelling.
 - **Some extreme events are not modelled.** Our model is built on the premise that the current monetary and political framework will continue and presumes that there will not be a breakdown of civil order, a major natural disaster, UK government default or a significant global armed conflict. We view these risks as being outside the typical use case, however where very extreme scenarios are considered these may be relevant and should be addressed through deterministic scenario analysis.
 - **Unknown unknowns.** The model deals with known risks and therefore does not allow for "black swan events" or "unknown unknowns", while our model does have fat tails, it is not possible to fully allow for these types of unknown risks.
 - **Volatilities and correlations.** Volatility and the correlation of assets are only observable after the fact and can change over time. Within the stochastic scenario calibration, volatility and correlations vary for each of 5,000 scenarios, with the distribution of outcomes largely a function of the chosen economic models and the median long-term volatility and correlation targets. Some correlation behaviour is introduced in the tails e.g., large equity falls with more downward credit transitions.



Capital Market Assumptions



Aon's Capital Market Assumptions (CMAs) are our asset class return, volatility, and correlation assumptions. The return assumptions are "best estimates" of annualised returns. Below we set out the key features and approach taken in setting these assumptions.

- **Aon's CMAs.** Market risk is the primary risk considered as part of the CMA setting process.
 - The return assumptions are Aon's "best estimate" returns, with the uncertainty around the expected return represented by the volatility (annualised standard deviation of returns over the projection period) assumptions. Correlation assumptions allow for the interconnectedness of the risks facing different asset classes.
 - By 'best estimate' we specifically refer to the median annualised return. That is, there is a 50/50 chance that outcomes will be above or below the assumptions.
 - Assumptions are set by Aon's Global Asset Allocation Team and represent the long-term (10 and 30 year) market outlook.
 - Our long-term assumptions are based on historical results, current market characteristics, our professional judgment, and forward-looking consensus views.
- **Consideration of other approaches.** Alternative approaches include using generalized global models, such as the Capital Asset Pricing Model (CAPM) or a fixed risk premia approach, but we believe these approaches over-simplify the analysis and do not capture as much of the intricacies around each asset class.
- **Climate risks.** We consider the impacts of climate change when setting our assumptions. Making direct adjustments is challenging and subject to a high degree of subjectivity, as climate change effects are extremely 'non-linear'. Aon's capital market assumptions (CMAs) are based on long-term consensus views of what is priced into the market, and therefore indirectly capture the climate risk that is currently captured in current market conditions. **A separate range of deterministic scenarios focusing on climate change scenarios can be used to inform and help aid decisions.**
- **Other risks.** The effects of other internal or external environmental factors, such as technological, economic, political and geopolitical, regulatory and legislative changes, are also indirectly captured, in consensus views on the economic outlook and market pricing, which feed into our return assumptions.



Aon's Stochastic Scenario Generator (SSG) Model

Aon's Stochastic Scenario Generator (SSG) Model is a set of 5,000 stochastic scenarios, calibrated quarterly to Aon's Capital Market Assumptions. These stochastic scenarios can be used to evaluate the risk and return characteristics of a Fund's assets versus its liabilities.

Asset-liability modelling

- **Stochastic scenarios.** Aon's Capital Market Assumptions CMAs are used as targets to calibrate a set (typically 5,000) of stochastic scenarios for each economic variable. This allows us to perform stochastic asset-liability studies i.e. project portfolios of assets and liabilities many times into the future, building up a coherent picture of possible outcomes. Allowing for the interactions of asset and liabilities stochastically impacts median outcomes and enables percentile outcomes and probabilistic metrics to be considered.
- **Consistent framework.** All the major markets and asset classes are modelled within a consistent framework allowing for the interactions between them to be properly taken into account.
- **Model choice.** When setting assumptions, we have opted to use different economic models for different asset classes (listed on this slide), as we believe this would be the best way to capture the specific characteristics associated with each asset class.

Key economic models used

- **Nominal yields** are modelled using an extended displaced Black-Karasinski model, which enables us to model full yield curves. Yields are positively skewed, and the model can fit the starting curve. In the current calibration, average nominal yields are assumed to broadly follow the market for the first c.20 years of the projections.
- **Real yields** are modelled using a Hull-White model, this enables us to model unbounded full yield curves. The model can fit the starting curve. In the current calibration, average real yields are assumed to broadly follow the market for the first c.20 years of the projections
- **Inflation** is taken as the difference between nominal and real short rates, and the positive skew of the nominal yield model ensures realised inflation is positively skewed. For realised inflation a 'surprise' element is allowed for making inflation more volatile than purely predicted by the short rates.
- **Investment grade corporate bonds** are modelled using an extended Jarrow-Lando-Turnbull framework which assumes bonds can be modelled based on their credit rating and anticipated cashflows. This ensures positive credit spreads with positive skew and ratings transitions which broadly reflect historically observed transitions.
- **Return-seeking assets** are modelled using exposures to factors, where each factor can contain stochastic volatility and/or jump diffusion process. This gives the flexibility to capture more complex tail behaviour than is typically observed in simpler log-normal models.
- **Other assets** generally use outputs from the models above and exposure to some degree of idiosyncratic element in order to capture desired properties for the asset being considered.

This document has been prepared in accordance with the framework below.

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This report should be read in conjunction with:

- The Report on the actuarial valuation of the North Yorkshire Pension Fund as at 31 March 2022 dated 29 March 2023.
- The latest Funding Strategy Statement.

If you require further copies of any of these documents, please let me know.

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