Quarterly Funding & Investment Report

End December 2023

Prepared for: North Yorkshire Pension Fund
Prepared by: Aon
Date: 21 February 2024

Signatory of: UK STEWARDSHIP CODE | 2021

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 2% to 114%, and the surplus has decreased by £104M.

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.

Asset Allocation and Implementation

The Committee considered a review of the Fund's equities and options for changing the allocations. A number of changes were agreed to, outlined on later in this report (p14).

Further discussions around short-term tactical asset allocation changes and rebalancing opportunities are set to take place in Q1 2024 with Officers and Advisors, prior to the March PFC meeting.

A separate paper will be provided to Committee members, describing the high level due diligence review of the BCPP UK Opportunities strategy.

Performance

The Fund outperformed the composite benchmark over the quarter, 1 year and 5 year periods but underperformed over the 3 year period.

Market Background and Investment Outlook

In Q4 2023, global equity markets rose due to a strong rally in November and December as market participants expected a greater chance of interest rate cuts in 2024. Over the quarter, the MSCI ACWI rose 9.5% in local currency terms.

Global bond yields moved lower as major central banks around the world kept their interest rates unchanged.

The 'everything-up' market rally late last year is just starting to be tested. The betting has been heavy on the global economy doing a successful landing trick that allows further falls in inflation and large cuts in interest rates even as growth holds up. This set of market expectations is well ahead of plausibility.

Equity markets remain heavily bifurcated by the handful of seemingly invulnerable US companies that leave the rest of the US and global markets trailing.

Investment grade credit is benefiting from stronger institutional demand, but recent spread moves leave little return upside vis a vis government bonds. Sub-investment grade credit is more expensive on a similar basis.

Key actions

1. Committee members to consider the contents of this report, noting the UK Opportunities review will be discussed separately at the March PFC meeting
2. Further discussions around short-term tactical asset allocation changes and rebalancing opportunities are set to take place with Officers and Advisors, prior to the March PFC meeting. Any subsequent recommendations will be tabled at the March PFC meeting for consideration.

*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)

Key Stats – Q4 2023

Assets

£4,478m

Assets reduced by £157m since 2022 valuation

£4,635m at 2022 valuation

Funding level

114%

Funding level decreased by 2% since 2022 valuation

116% at 2022 valuation

Return on Assets since 2022 Valuation

-1.9% pa

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

+6.7%

0.8% increase since 2022 Valuation

5.9 % at 2022 valuation

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

+6.8%

0.7% 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)

£873m

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

£846m

Estimated Total Employer cost

14.9%

Estimated Total Employer cost decreased by 2.5% 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

114%

at end 31 December 2023

Down from 116% at 31 March 2022

Surplus

£536M

at end 31 December 2023

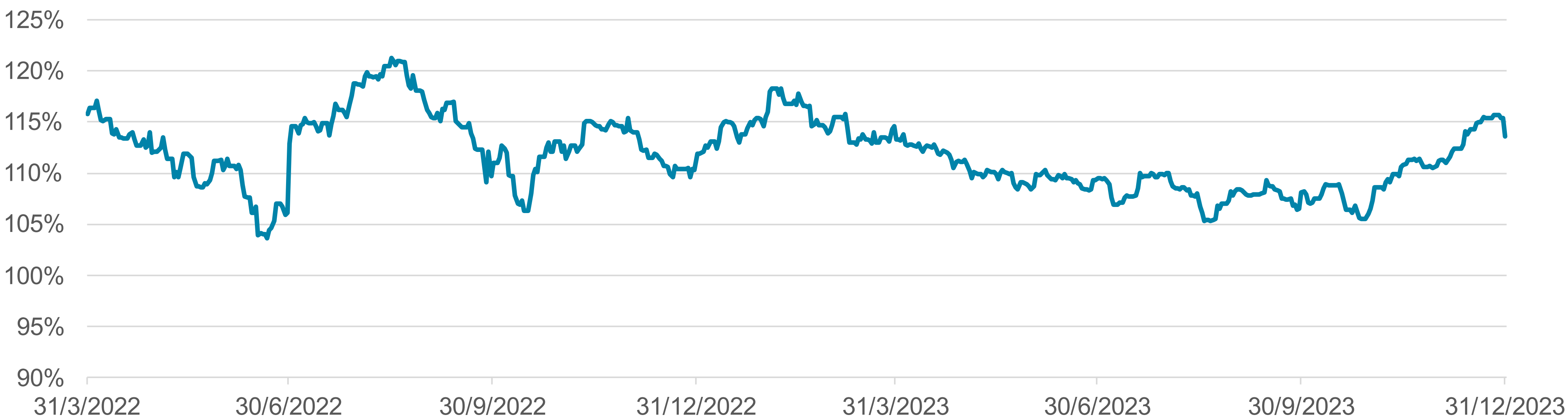
Down from £640m at 31 March 2022

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 £104M.

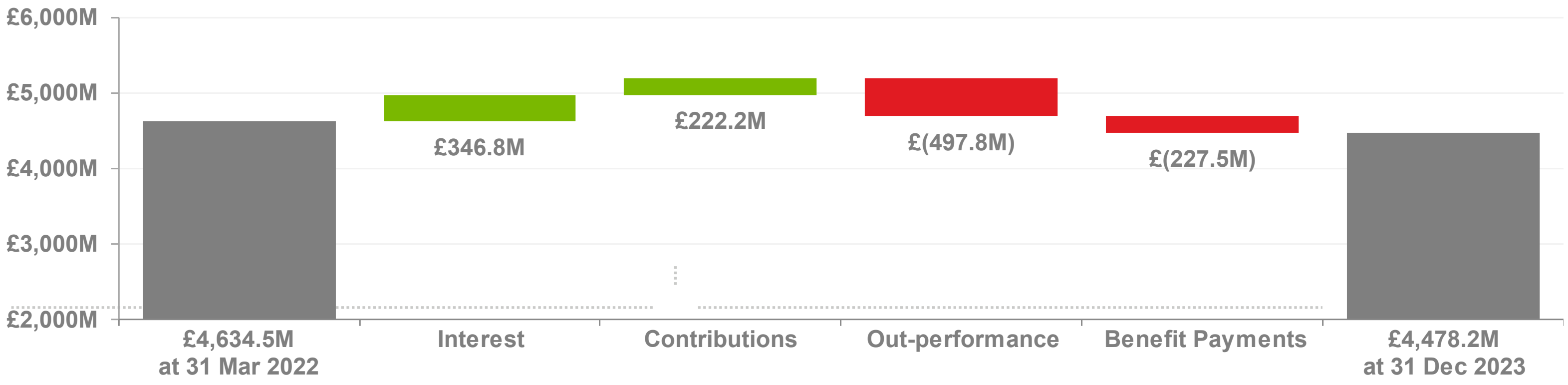
This has been primarily driven by a reduction in asset values although this has been partially offset by an increase in the net discount rate.

Change to funding level since 31 March 2022

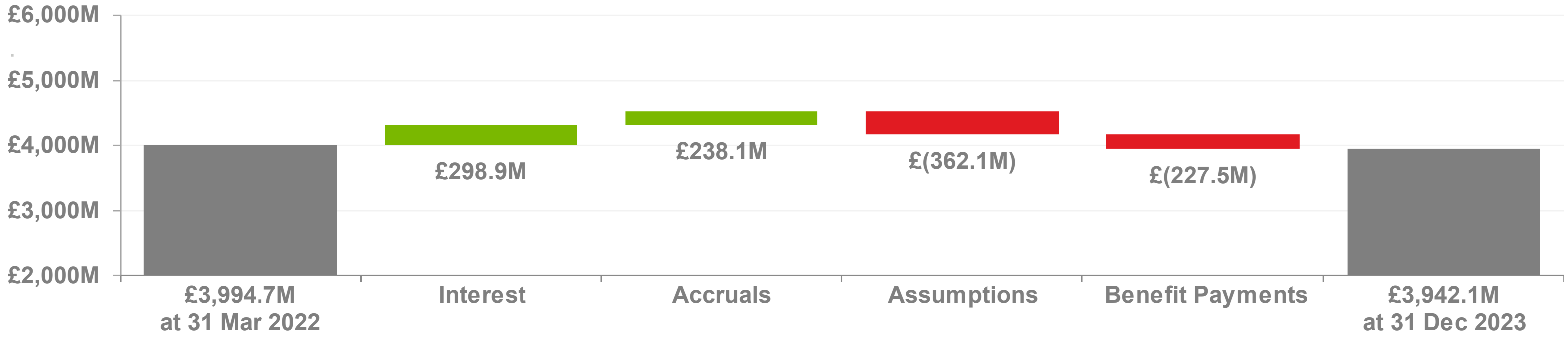


Analysis – ongoing funding target

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 £104M.

Aggregate Employer contributions – ongoing funding target

Total employer contribution rate

14.9% ▼

at 31 December 2023

Down from 17.4% at 31 March 2022

Employer cost of accrual

16.7% ▼

at 31 December 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 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 – Q4 2023

Asset Group	Manager	Valuation (£m)	Current allocation	31 December 2023 Long-term strategy	Difference	Rebalancing Range	Possible action
Equities		**2,186.3**	**48.8%**	**50.0%**	**-1.2%**		
	BCPP UK Equity	175.6	3.9%	4.0%	-0.1%	TBC	
	BCPP Global Equity	1,272.2	28.4%	28.0%	+0.4%	+/- 5%	
	Baillie Gifford LTGG	738.4	16.5%	18.0%	-1.5%	+/- 3%	
Absolute Return		**7.0**	**0.2%**	**0.0%**	**+0.2%**		
	Leadenhall Remote Risk	2.9	0.1%				
	Leadenhall Diversified	2.7	0.1%				
	Leadenhall Nat Cat	1.5	0.0%				
Property		**274.4**	**6.1%**	**7.5%**	**-1.4%**	**TBC**	
	Hermes	31.9	0.7%				
	L&G	44.4	1.0%				
	Threadneedle	198.1	4.4%				

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

Asset allocation – Q4 2023 (cont'd)

Asset Group	Manager	Valuation (£m)	Current allocation	Long-term strategy	Difference	Rebalancing Range	Possible action
		31 December 2023					
Infrastructure		**576.6**	**12.9%**	**10.0%**	**+2.9%**		
	BCPP Infrastructure	288.9	6.5%				
	BCPP Listed Alts	264.3	5.9%				
	BCPP Climate Opportunities	23.4	0.5%				
Private Credit		**179.2**	**4.0%**	**5.0%**	**-1.0%**		
	BCPP Private Credit	138.0	3.1%				
	Arcmont	26.3	0.6%				
	Permira	14.8	0.3%				
Non-Investment Grade Credit		**236.8**	**5.3%**	**5.0%**	**+0.3%**	**TBC**	
	BCPP Multi Asset Credit	236.8	5.3%				
Investment Grade Credit		**322.0**	**7.2%**	**7.5%**	**-0.3%**	**TBC**	
	BCPP Investment Grade Credit	322.0	7.2%				

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

Asset allocation – Q4 2023 (cont'd)

Asset Group	Manager	Valuation (£m)	Current allocation	31 December 2023 Long-term strategy	Difference	Rebalancing Range	Possible action
Gilts		**595.8**	**13.3%**	**15.0%**	**-1.7%**	**TBC**	✓
	BCPP Index Linked Bonds	595.8	13.3%				
Cash		**100.1**	**2.2%**	**0.0%**	**+2.2%**	**TBC**	✓
	Internal Cash	100.1	2.2%				
Total		**4,478.2**	**100.0%**	**100.0%**			

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

Investment strategy update

Equity allocation options

- At the November PFC meeting, the Committee considered a review of the Fund's equities and options for changing the allocations. It was agreed to:
  - Reduce the strategic allocation to Baillie Gifford's LTGG fund from 18%, with 10% being the proposed target
  - Remove the strategic allocation to UK Equities of 4%
  - Reduce the Baillie Gifford allocation to 13%, use the proceeds to rebalance the BCPP Investment Grade Corporate Bonds allocation to target weight, with the remaining proceeds invested in cash
  - Further exploration of the impact listed equity market be undertaken, through meetings with additional managers
  - Consider a short-term tactical asset allocation changes through investments in cash and bonds at an appropriate time in the near future in light of decisions on the previous recommendations

Asset allocation and rebalancing opportunities

- Further discussions around short-term tactical asset allocation changes and rebalancing opportunities are set to take place in Q1 2024 with Officers and Advisors, prior to the March PFC meeting.

UK Opportunities

- A separate paper will be provided to Committee members, describing the high level due diligence review of the BCPP UK Opportunities strategy prior to any commitment.

Transitions and cashflows

The following rebalancing activities took place over the quarter:

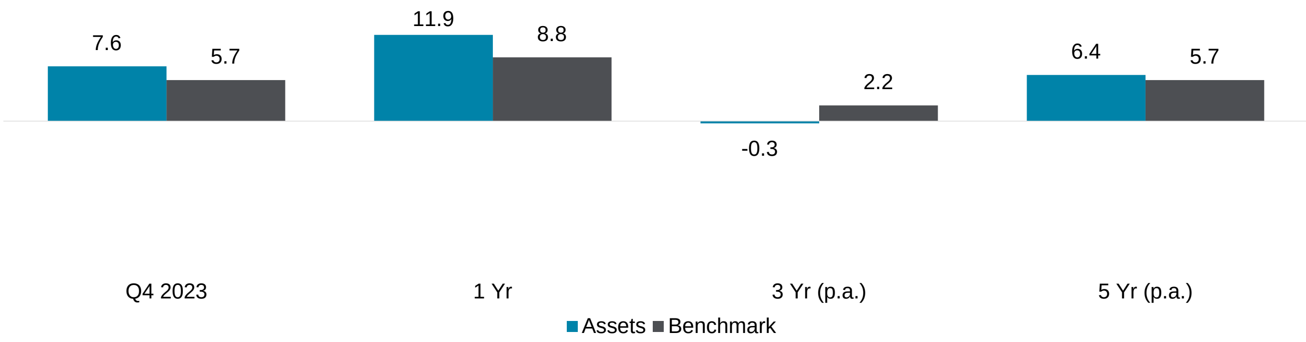
- 2 divestments from Baillie Gifford, totalling £80m.
- Border to Coast made:
  - Climate opportunities, 12 calls for £2.2m.
  - Infrastructure, 21 calls, 6 distributions, £14.6m paid net
  - Private Credit, 17 calls, 11 distributions, £8.2m paid net
- 1 distribution from Permira, £0.2m.
- A redemption instruction was submitted to Hermes, to proceed with the disposal of 5,344,757 units held by NYPF in the Federated Hermes Property Unit Trust. Further updates will be provided as this disposal request is actioned in subsequent Quarters.

4. Fund performance

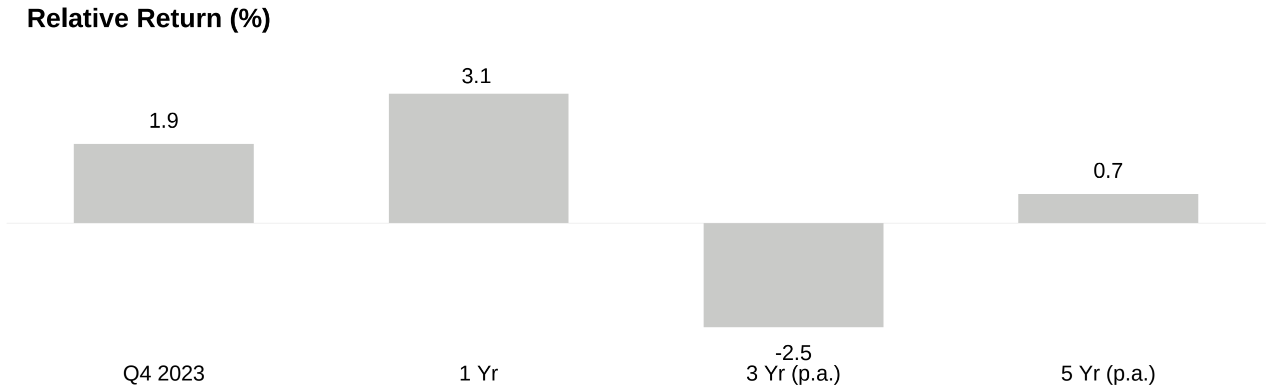
A review of your investment performance

Total Fund performance – Snapshot

Fund performance & benchmark



Relative performance



Quarterly (relative)

1.9%

The Fund outperformed the benchmark returning 7.6% vs 5.7% over the quarter.

3 year (relative)

-2.5%

Over 3 years the Fund has underperformed the benchmark returning -0.3% vs 2.2%.

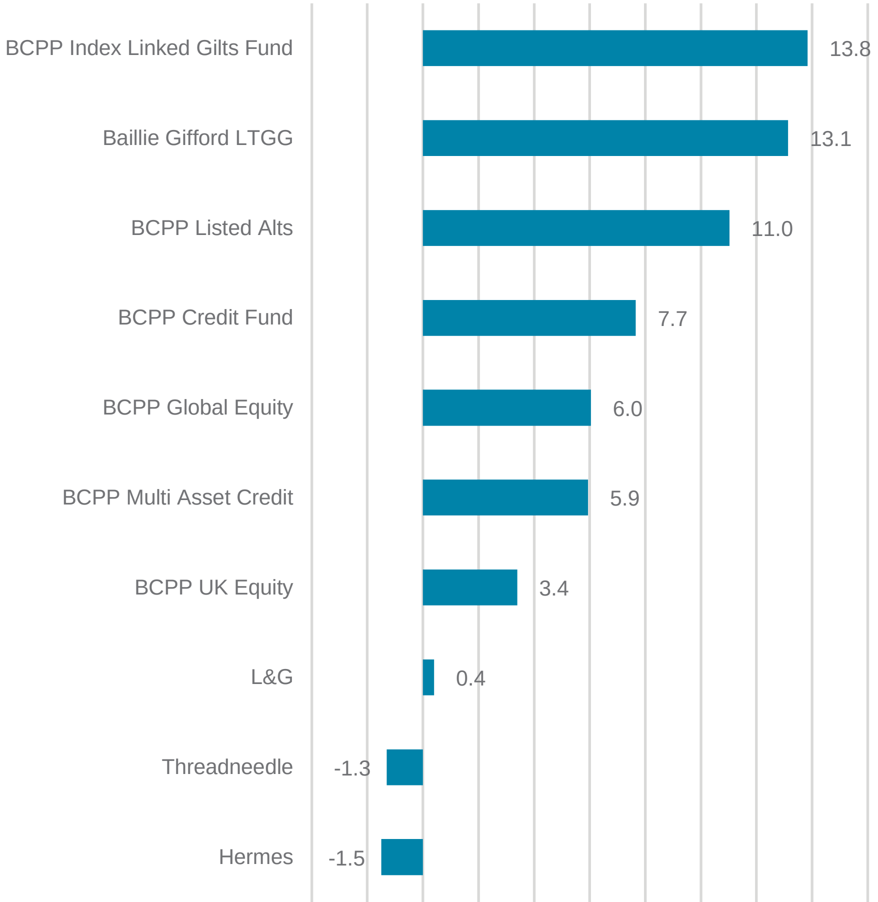
Comments

Total Fund performance is ahead of the composite benchmark over the quarter, 1 year and 5 periods but behind over the 3 year period to 31 December 2023.

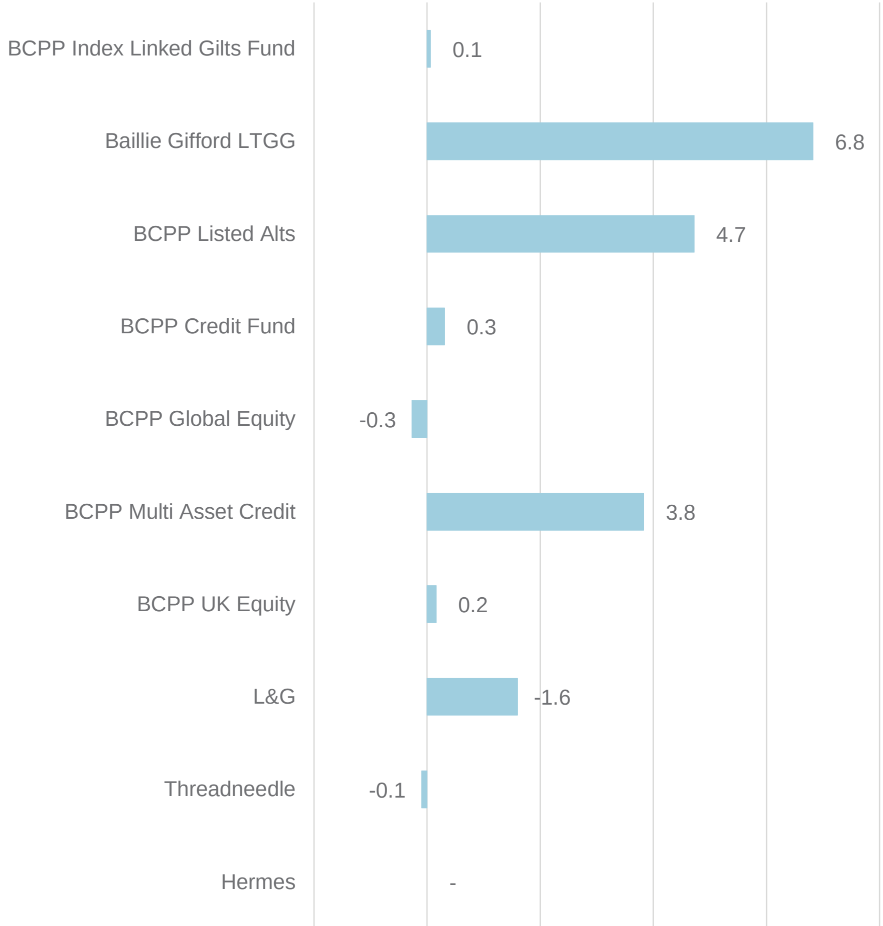
Source: Northern Trust, Aon

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.)			5 Years (% p.a.)			Since inception			
	Perf	B'mark	Rel	Perf	B'mark	Rel	Perf	B'mark	Rel	Perf	B'mark	Rel	Inception date
Equity													
UK Equity													
BCPP UK Equity	8.0	7.9	0.1	4.3	8.6	-4.3	-	-	-	3.0	4.5	-1.5	Jun-19
Global Equity													
BCPP Global Equity	16.9	15.3	1.6	9.1	8.4	0.7	-	-	-	9.9	10.1	-0.2	Oct-19
Baillie Gifford LTGG	30.7	15.7	15.0	-6.2	8.8	-15.0	16.1	12.2	3.9	14.5	9.5	5.0	Sep-06
Property													
Hermes	-2.4	-2.0	-0.4	1.5	1.8	-0.3	1.1	1.2	-0.1	-	-	-	Mar-12
L&G	-1.2	-1.4	0.2	2.8	2.1	0.7	2.0	1.3	0.7	-	-	-	Dec-12
Threadneedle	0.2	-1.4	1.6	2.9	2.1	0.8	1.6	1.3	-0.3	-	-	-	Jun-12
Infrastructure													
BCPP Listed Alts	9.7	15.3	-5.6	-	-	-	-	-	-	0.9	5.3	-4.4	Feb-22
Investment grade credit													
BCPP Investment Grade Credit	10.0	8.6	1.4	-3.8	-4.7	0.9	-	-	-	-2.2	-3.4	1.2	Aug-20
Non-investment grade credit													
BCPP Multi-Asset Credit	10.4	8.2	2.2	-	-	-	-	-	-	-0.7	-	-	Nov-21
Gilts													
BCPP Index Linked Bonds	-4.2	-4.3	0.1	-18.9	-19.2	0.3	-	-	-	-16.5	-17.3	0.8	Oct-20
Total	**11.9**	**8.8**	**3.1**	**-0.3**	**2.2**	**-2.5**	**6.4**	**5.7**	**0.7**	**7.0**	**7.3**	**-0.3**	**Jan-02**

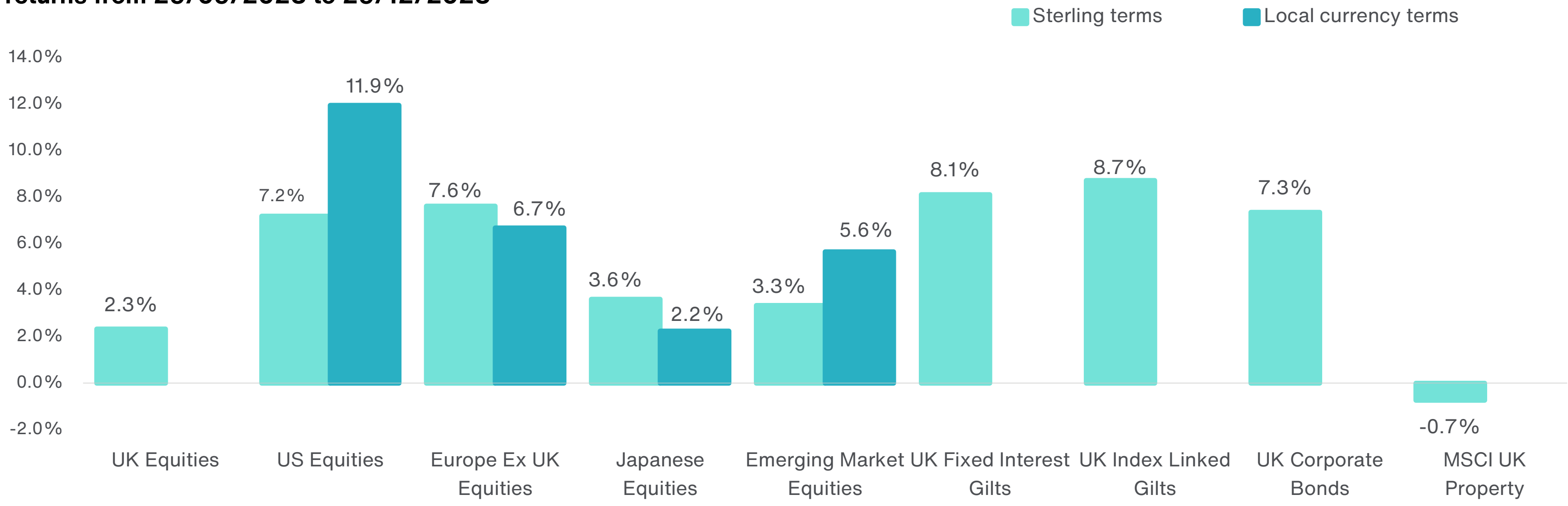
Source: Northern Trust, Managers, Aon. Numbers may not sum due to rounding.
Note: Hermes, L&G, Threadneedle; MSCI data was used fund performance and benchmarking purposes. BCPP Infrastructure returns and BCPP Private Credit returns not shown during initial investment drawdown phase. Performance for Leadenhall 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 Q4 2023

Index returns from 29/09/2023 to 29/12/2023



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

Equities

In Q4 2023, global equity markets rose due to a strong rally in November and December as market participants expected a greater chance of interest rate cuts in 2024. Over the quarter, the MSCI ACWI rose 9.5% in local currency terms. However, sterling appreciation against the US dollar pushed down returns in sterling terms to 6.4%.

Bonds

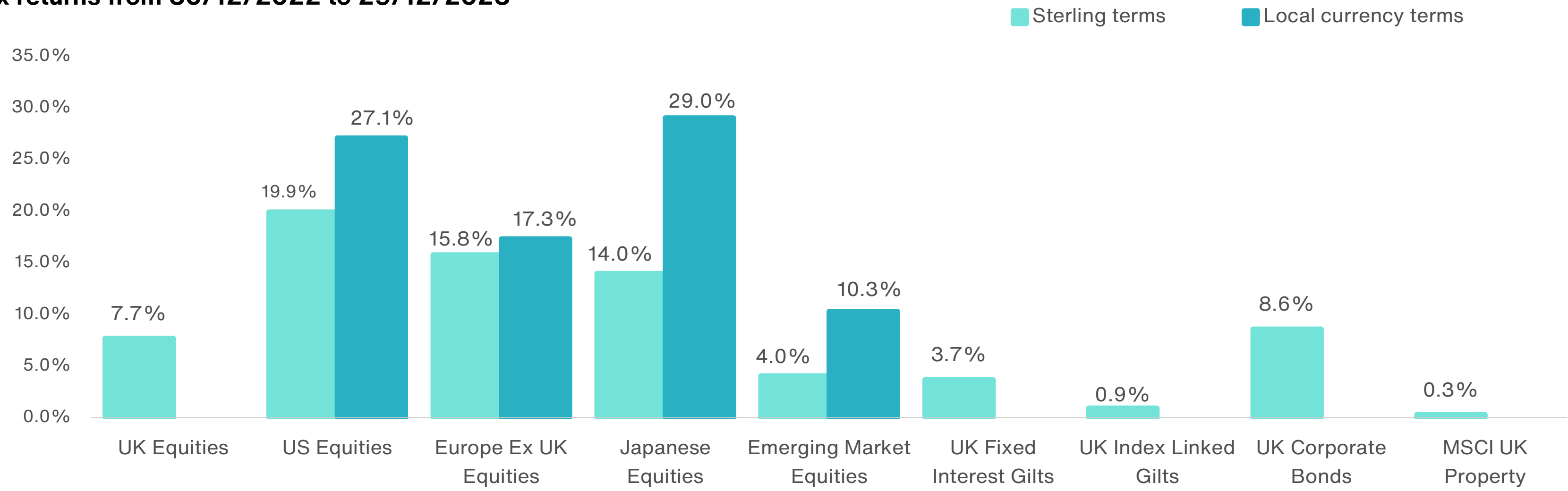
UK investment grade credit spreads fell by 0.22% to 1.21%, based on the IBoxx Sterling Non-Gilts index. Higher-quality bond credit spreads contracted less than their lower-quality counterparts, with AAA-rated non-gilt spreads falling by 0.06% to 0.41% whilst BBB-rated non-gilt spreads fell by 0.30% to 1.76%. The IBoxx Sterling Non-Gilts Index posted a return of 7.3%.

Gilts

The UK nominal gilt curve shifted downwards over the quarter as yields fell sharply across maturities.

Market – Background 12 month

Index returns from 30/12/2022 to 29/12/2023



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

Equities

Global equities generated positive returns over the last twelve months, rising sharply particularly over the first half (14.4%) and last quarter (9.5%) of 2023. The MSCI ACWI rose 22.2% in local terms in 2023. Inflation began to moderate in most major economies as the global economy proved more resilient than previously anticipated. The rally in Information Technology stocks (MSCI ACWI - IT 51.5%) was a major contributor to equity market gains in 2023, as investor excitement over artificial intelligence grew.

Bonds

The UK credit market performed positively 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 0.46% to 1.21%. The index rose 8.6% over the year.

Gilts

The UK gilt curve rose at shorter and longer maturities over the year whilst falling at medium maturities. In Q1 2023, the UK nominal gilt curve fell across all maturities except for the shortest end of the curve, as markets priced in additional rate increases in the immediate future but a lower terminal rate thereafter. In Q2 2023, the UK nominal gilt curve rose back up across all maturities with yields rising more at the short end of the curve relative to longer maturities. In Q3 2023, the UK nominal gilt curve fell at short to medium maturities but rose at the longer end of the curve. In Q4 2023, the UK nominal gilt curve shifted downwards over the quarter as yields fell sharply across maturities. Overall, according to FTSE All-Stocks indices, UK fixed-interest gilts rose by 3.7% and index-linked gilts rose by 0.9% over the last twelve months.

Quarterly Investment Outlook – January 2024

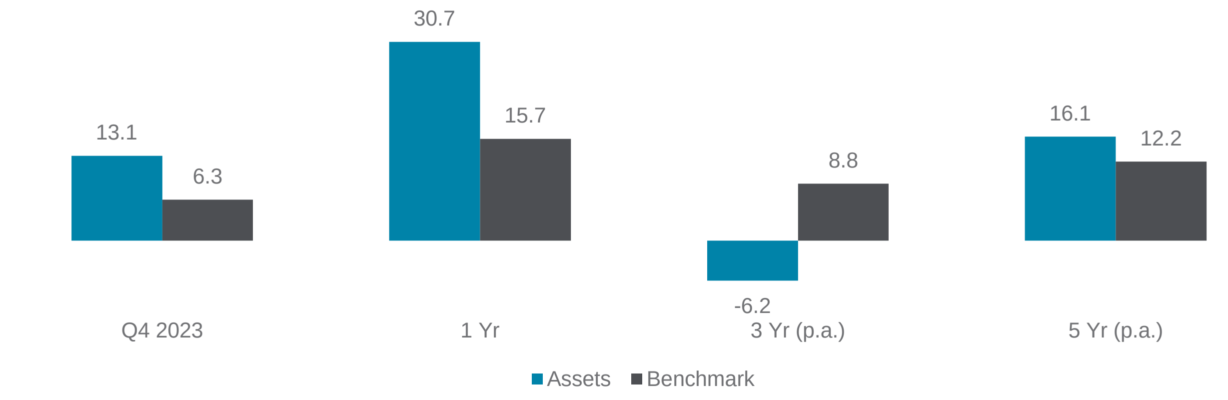
- The ‘everything-up’ market rally late last year is just starting to be tested.
- The betting has been heavy on the global economy doing a successful landing trick that allows further falls in inflation and large cuts in interest rates even as growth holds up. This set of market expectations is well ahead of plausibility.
- 2023’s UK rates’ rollercoaster swings from pessimism to optimism will hopefully not repeat, but there are still troublesome crosscurrents. Gilt yields still have room to ease but this may come later rather than sooner.
- Investment grade credit is benefiting from stronger institutional demand, but recent spread moves leave little return upside vis a vis government bonds. Sub-investment grade credit is more expensive on a similar basis.
- Equity markets remain heavily bifurcated by the handful of seemingly invulnerable US companies that leave the rest of the US and global markets trailing.
- Our weaker than market-consensus confidence in the global economy and the valuation challenges to equities from bonds/cash encourage us to rebalance into recent gains to keep portfolios at no higher than target equity weights.
- The search for diversification is more pressing given the positive relationship between bonds and equities in the past few years. With portfolio liquidity more of a priority today, the more readily transactable alternative asset classes appeal. Insurance-linked securities and some absolute return and hedge-fund strategies appear better suited as diversified return sources in the current market environment.

6. Manager review

Aon ratings and understanding manager performance

Baillie Gifford - LTGG

Fund performance & benchmark



Performance comments

The strategy outperformed during the period, extending outperformance for the year. Longer-term performance remains attractive, though the three-year number remains weak, highly influenced by the weak calendar years of 2021 and 2022. Moderating expectations of inflation and global interest rates provided a favourable backdrop to relative performance for a strategy such as this.

The largest contributors to performance over the quarter were PDD Holdings, Adyen and Shopify.

PDD Holdings (Chinese e-commerce) has delivered high revenue growth over the past year, taking share from rivals and being one of the few Chinese consumption stocks to outperform.

Adyen posted a favourable trading update, with both volume and profit growing over 20%.

Shopify outperformed as the market rewarded its greater focus on profitability, for example, disposing of its logistics business.

Among the largest detractors from performance over the quarter were Meituan (Chinese internet), The Trade Desk and CATL (EV batteries).

Buy

Reviewed: January 2024

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.

Source: Aon, Northern Trust, data for periods longer than 12 months are annualised.

Baillie Gifford – LTGG (cont.)

Positioning and Transactions

During the quarter, the team made a new purchase in Enphase Energy, which offers renewable generation hardware and software. Illumina was sold after a 10-year holding period, with the team losing confidence in management.

The strategy remains concentrated (c. 40 holdings), with significant exposure to tech-related businesses.

One area of differentiation, and now more overlapping with value-oriented global peers, is the strategy's exposure to China, with around 13% of the portfolio allocated here, of which PDD is c.6.5%. Despite very negative sentiment towards this market the team remains confident in its holdings, believing they are supported by policy tailwinds, global thematic trends (e.g., EV), and low valuations.

Major Developments – Team Update

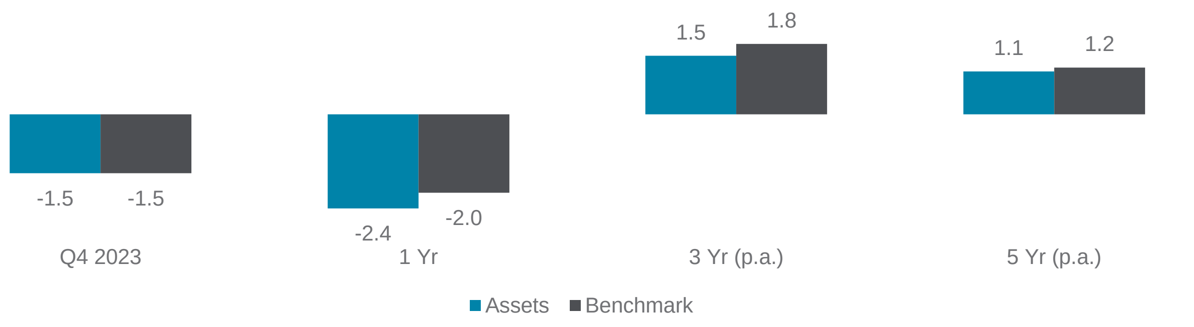
During the quarter it was announced that Robert Wilson will move from LTGG to join the International Growth Team. Other decision makers on LTGG remain in place, including of most note to us, Mark Urquhart (Head of LTGG Team) and John MacDougall.

Kyle McEnery will join LTGG as an analyst. McEnery has been at Baillie Gifford for nine years, working on an AI project and within the Global Alpha, Multi Asset and Global Discovery teams.

There is no change to our ratings or views.

Hermes – Property Unit Trust

Q4 Fund performance & benchmark



Qualified

Reviewed: November 2023

Q3 2023 Monitoring comments

Performance of the fund has moderated since Dermot Kiernan became portfolio manager in 2020 and medium-term performance is now in line with the benchmark compared to the fund's historical consistent outperformance. Initial good performance under Mr. Kiernan was mainly generated by assets acquired by the previous team completing their business plans.
His appointment in 2020 marked a new chapter for FHPUT, with Russell Black, the then fund manager, leaving to join his fellow former colleagues and Hermes Property Unit Trust (HPUT) portfolio managers Chris Mathews and Mark Beattie at Elwood. Other members of the HPUT team also left for Elwood prior to Mr. Black resigning. Please note that HPUT was rebranded to FHPUT following the acquisition of the Hermes business by Federated.

The new FHPUT team have been unable to match the success of the former HPUT team despite having several years to establish themselves. Aon believes that the independent FHPUT Appointments Committee should have looked externally before appointing Mr. Kiernan following the resignation of Mr. Black and we do not believe the current team and fund manager will be able to deliver consistent outperformance in the future.

Given the fund's medium-term performance prospects (where we expect it to under-perform its' peer group), weaker ESG integration and our negative view on the current fund management team we have changed the fund's rating from Buy to Qualified and will not be putting FHPUT forward for new property mandates.

Key info

Appointed: 27 February 2012

Vehicle: Property Unit Trust

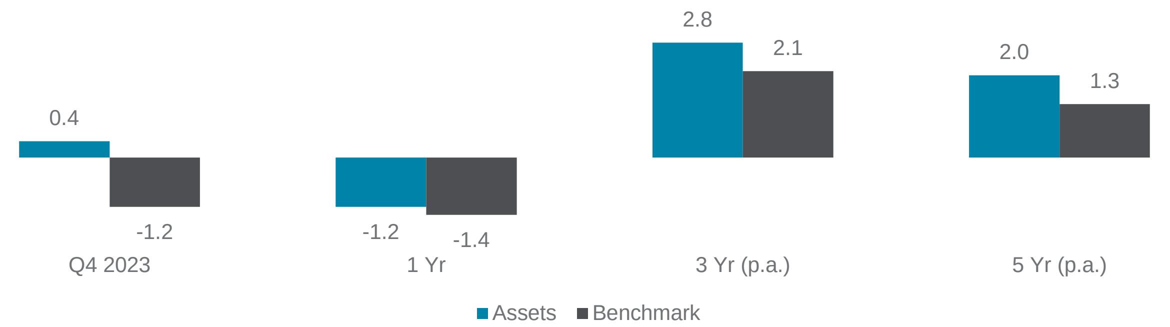
Mandate: UK Property Pooled Fund

Benchmark: IPD Other Balanced Property Fund Index

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

LGIM – Managed Property Fund

Q4 Fund performance & benchmark



Qualified

Reviewed: November 2023

Q3 2023 Monitoring comments

As of Q3 2023, the Fund exhibits a predominant overweight position in the alternatives sector and cash compared to the benchmark. Compared to the benchmark, the Fund is heavily underweighed to the industrial sector by 5.3%, 2.7% in the office sector, 2.3% in the retail sector and overweight to the alternatives and cash by 4.4% and 5.7%, respectively. The Fund's sector exposures are as follows: 16.6% to retail, 19.6% to office, 33.3% to industrial, 17.5% to alternatives, and 13.0% to cash (based on GAV %). The current underweight position in the industrial sector is expected to be corrected, moving to 38% with the acquisition of the £300 million Woodside Industrial Estate in Dunstable. Simultaneously, the exposure to the office sector will be further reduced through strategic sales.

The Fund's cash level remains considerably above the benchmark at 13% (as a % of GAV), following large DC pension inflows into the Fund (net inflows of £18 million monthly over the trailing 12 months) and is yielding 5.6% in the Fund's cash account.

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.)

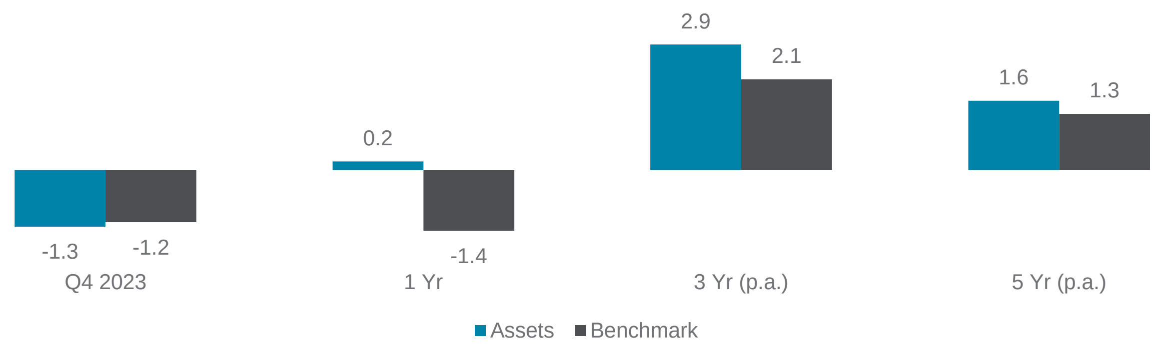
Q3 2023 Transactions

During the last quarter, the Fund executed the sale of two industrial assets totalling £51 million and acquired one Build to Rent (BtR) unit. The Fund's purchase of Mansbridge House, a purpose-built BtR property consisting of 45 units totaling over 40,000 sqft in Battersea, amounted to £37 million, reflecting a net initial yield of 4.5%. This acquisition aligns with the Fund's strategic objective to increase exposure in the BtR sector, with the asset demonstrating strong reversionary potential, as the current letting is over 10% below the market rent.

Conversely, the Fund divested the Mersey Multimodal Gateway in Widnes for £32 million to ILP UK Propco Limited, yielding 10.8% IRR p.a. over the last ten years. Additionally, the Eastway Industrial Estate in Witham was sold for £19 million to Columbia Threadneedle, generating a return of over 20.5% p.a. over the holding period, which significantly outperformed against the industrial benchmark of 6.4% p.a.. The Manager emphasised that these sales were in line with the Fund's strategy, as the Widnes site has a short remaining lease length of 11 years and ground contamination, while the Eastways Industrial Estate presents potential ESG and Capex risks. Proceeds from these sales will be recycled to acquire the remaining 50% share of Woodside Industrial Estate in Dunstable, thereby enhancing the overall profile of the industrial holdings, and increasing exposure to approximately 38%.

Threadneedle – TPEN

Q4 Fund performance & benchmark



Buy

Reviewed: September 2023

Q3 2023 Monitoring comments

Q3 commentary is not available at the time of publishing this report.

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%.

BCPP – Quarterly high level monitoring (Q4 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. The risks associated with recruitment, retention and resourcing have now crystallised – there has been some progress in hiring of replacements, however. There are also questions over the support by the wider business for Equity and more specifically this strategy.
- BCPP UK Equity Alpha
  - Redwheel: The manager was placed on the Watchlist during December following the UK Value team's launch of a new Global Value strategy. Whilst the UK Value team will increase from 5 to 8, with three additional analyst resources, who are moving internally to the UK Value team, BCPP are concerned that this may not adequately compensate for the additional time required to manage a global strategy as well as maintaining the current level of focus on the UK strategy.
  - BCPP are due to have an Annual Review meeting with Redwheel in January, at which point the Global strategy will have been live for over a month. As part of the Annual Review BCPP will further discuss the impact on the UK strategy, their expectations for responsibilities and coverage going forward, and will meet with the new team members.
  - BCPP have negotiated a fee saving arrangement, equating to a 10% (c. £100k) saving in year 1.

Changes to Senior Management at BCPP

- Richard Hawkins joins BCPP's board, as a non-executive director, who brings in-depth technology and cyber security experience as well as significant experience operating at senior levels within financial services.

Source: Aon, BCPP External Quarterly Reports (UK and Global Equity Alpha, and Fixed Income Q4 2023), BCPP Quarterly investment Report (NYPF) Q4 2023. Note: BCPP quarterly assurance data will now be released annually and has not been included above.

Border to Coast Pensions Partnership – RI Quarterly Report Snapshot

UK Equity Alpha Fund

Fund	Q4 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
UK Equity Alpha	**47.1**	**7.8**
Benchmark (FTSE All Share)	**85.8**	**7.8**

Global Equity Alpha Fund

Fund	Q4 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Global Equity Alpha	**66.8**	**7.1**
Benchmark (MSCI ACWI)	**124.7**	**6.9**

Sterling Investment Grade Credit Fund

Fund	Q4 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Sterling Investment Grade Credit	**63.4**	**7.2**
Benchmark (iBoxx Sterling Non Gilt Index)	**66.9**	**7.5**

Listed Alternatives Fund

Fund	Q4 2023 Position	
	Weighted Average Carbon Intensity	Weighted ESG Score
Listed Alternatives	**163.0**	**7.3**
Benchmark (MSCI ACWI)	**125.0**	**6.9**

Source: BCPP/MSCI[1]

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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:

	Key
Advanced	The fund management team demonstrates an advanced awareness of potential ESG risks in the investment strategy. The fund management team can demonstrate advanced processes to identify, evaluate and potentially mitigate these risks across the entire portfolio.
Integrated	The fund management team has taken appropriate steps to identify, evaluate and mitigate potential financially material ESG risks within the portfolio.
Limited	The fund management team has taken limited steps to address ESG considerations in the portfolio.

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 31 December 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 *	Discount rate – Low risk funding target	CPI inflation – Low risk funding target
31 March 2022	4.20%	3.55%	2.30%	1.7%	3.4%
30 September 2023	4.70%	3.35%	2.10%	4.8%	3.2%
31 December 2023	4.60%	3.35%	2.10%	3.9%	2.9%

* 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 31 December 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%	18.7%
Property	6.5%	12.6%
Infrastructure	7.7%	15.8%
Listed alternatives	6.8%	19.3%
Illiquid credit	7.9%	6.6%
Investment grade credit	4.8%	9.5%
Non-investment grade credit	6.0%	8.9%
Absolute Return	6.1%	5.3%
Gilts	3.2%	9.6%
Cash	3.5%	1.3%

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%	37%	62%	100%	25%	2%	54%	21%	-8%	-2%
Property		100%	19%	36%	24%	4%	28%	9%	-1%	7%
Infrastructure			100%	63%	13%	2%	22%	20%	-3%	1%
Listed Alternatives				100%	24%	2%	53%	21%	-8%	-2%
Illiquid credit					100%	57%	62%	15%	6%	24%
IG Credit						100%	26%	17%	50%	39%
Non-IG Credit							100%	18%	1%	9%
Absolute Return								100%	9%	33%
Gilts									100%	29%
Cash										100%

Data and assumptions

Date of calculation	31 December 2023
Number of simulations	5000
Time horizon	10 years
Asset value	£ 4,478,170,873

- 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 that 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.

TAS compliance

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

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This document, and the work relating to it, complies with 'Technical Actuarial Standard 100: General Actuarial Standards' ('TAS 100') (updated July 2023).

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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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