London Borough of Camden Pension Fund

Appendix A – Non-equity portfolio review

July 2020

Isio have agreed to the disclosure of this redacted report subject to the paragraphs below:

- *Isio's work was designed to meet the London Borough of Camden's requirements and the engagement activities were determined by them at the time our report was written. Our report was completed in July 2020 and we have not undertaken to update our report for events or circumstances arising after that date. In preparing our report, we have relied upon information made available from Hymans Robertson. We do not accept any responsibility as to the completeness or accuracy of such information. We draw your attention to the risk warning and limitations of modelling set out in the appendix..*
- *The report should not be used or relied on by any party other than our client for any purpose or in any context especially given the report is redacted to protect confidentiality requirements and commercial interests.*
- *In consenting to the disclosure of this report, Isio does not assume any responsibility to you in respect of its work for the London Borough of Camden, the report or any judgments, conclusions, opinions, findings or recommendations that Isio may have formed or made and, to the fullest extent permitted by law, Isio accepts no liability in respect of any such matters to any third parties. Should any third party choose to rely on the report, they will do so at their own risk.*

Executive summary

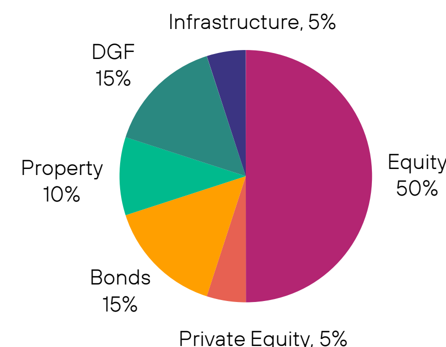
Addressee

- This report is addressed to the London Borough of Camden Council ("the Council") as Administering Authority of the London Borough of Camden Council Pension Fund ("the Fund"). This report reviews the Fund's investment strategy and outlines Isio's views on changes that will enhance the overall strategy.

Summary of paper

- Within this report we provide a detailed review of the Fund's current investment strategy, asset allocation and investment structure.
- Over recent years the Fund's investment strategy has delivered strong asset returns. Some of this was given back during 2020 amidst the significant market volatility in the wake of the Covid-19 outbreak. We estimate that the funding level was c. 93% as at 31 March 2020 (an increase from 76% at the 2016 Actuarial Valuation date). We expect the funding position to have improved since the end of March given the subsequent sharp recovery in equity markets.

Current Strategic Allocation



Key stats	
Expected Return (p.a.)	4.8%
Return Requirement (p.a.)	4.5%
Assets	c. £1,554m
Estimated Liabilities (Ongoing basis)[1]	c. £1,670m
Estimated Funding Deficit	c. £116m

Key recommendations

- Our analysis highlights that the Fund is exposed to significant equity risk. This is in part due to the overweight allocation vs the strategic benchmark. We believe that the Council should seek to reduce the equity exposure.
- The other key risk to which the Fund is exposed is that of higher inflation. This would drive the liability value higher given the inflation-linked nature of the benefit payments. To mitigate this risk, we recommend that the Council increases the Fund's allocation to directly inflation-linked assets (e.g. long lease/ residential property and/ or infrastructure).
- We believe that the Fund can achieve returns more efficiently through increasing its allocation to private markets (and thereby accessing an illiquidity premium for longer term investment).
- We believe that the Fund should reduce its exposure to diversified growth funds (DGFs). On the whole, these have not delivered and are relatively expensive in terms of the fees paid. Given the Fund's size, we believe diversification can be achieved with greater efficiency, control and increased cost effectiveness by allocating directly to a range of asset classes.
- There are alternative strategies, which utilise increased allocations to index-linked gilts and infrastructure equity, and new allocations to long lease property and private debt, in order to better manage risk, whilst continuing to achieve the required return of at least 4.5%.
- In addition, as part of this review we envisage c.15% of Fund assets moving to a "sustainable" equity fund and potentially a further c. 13% to a fund aligned with the Paris climate agreement (subject to detailed due diligence on this new proposition). This is considered further in the separate equity review paper. We also highlighted further areas of the portfolio where additional positive ESG changes can be made e.g. infrastructure equity. We believe these changes will make a significant impact without sacrificing expected return.

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Source: [1]Hymans Robertson

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Introduction

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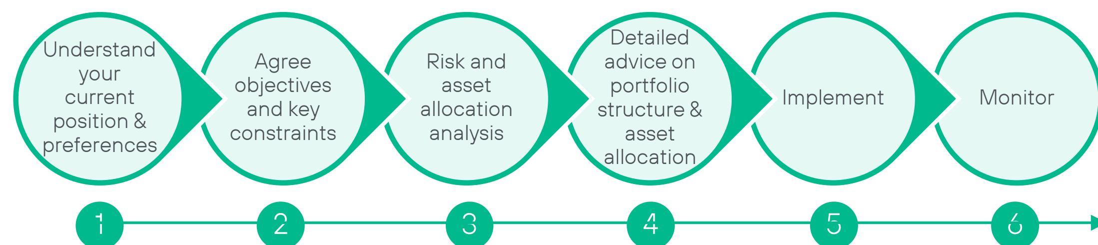
Introduction

Background

- The Fund's investment strategy delivered strong asset returns in recent years. Over the period between the 2016 and 2019 Actuarial Valuations, most growth asset markets trended upwards which, along with contributions, delivered an increase in the funding position from 76% to 103%. Following significant market volatility over Q1 2020, some of this improvement has been given back. We estimate the funding level was c. 93% as at 31 March 2020.
- The Council has now engaged Isio to undertake a detailed review of the Fund's investment strategy as a whole; to quantify the inherent risks and consider options for evolution of the strategy. This is being undertaken in parallel with a review of the equity allocation which is considered in a separate report.
- The diagram below highlights the key stages in our approach for the overall strategy review, with this paper focussing on stages 1-3.



Scope of this Paper

This paper provides a detailed review of the Fund's current investment strategy, asset allocation and investment structure, including:

- Detailed asset-liability modelling and risk and return analysis on the Fund's current investment strategy against the stated objectives and based on the Fund's specific liabilities and the current funding position.
- Assessment of whether the strategy remains aligned with the key objectives and whether an evolution to an alternative asset allocation may be preferable.
- Analysis of a range of potential alternative portfolios.
- Consideration of any proposed investment strategy changes in the context of the LCIV pool and the current/ expected future products available.
- The ESG impact and considerations of any proposed changes.

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Objectives

Objectives

- We understand that the Council's funding objectives, as outlined in the January 2020 Funding Strategy Statement, are:
  - to ensure the long-term solvency of the Fund, using a prudent long-term view. The primary reason for this is to ensure that sufficient funds are available to meet all members'/dependants' benefits as they fall due for payment;
  - to ensure that employer contribution rates are reasonably stable where appropriate;
  - to ensure affordability of long-term contributions which employers need to pay to the Fund, minimising these where possible, by recognising the link between assets and liabilities and adopting an investment strategy which balances risk and return.
- Thus the objective is to deliver a return that achieves full funding with as little volatility as possible (to maintain stable contributions). The assumptions underlying the Actuary's funding basis are important factors in determining the return requirement.
- As the Fund grows in absolute terms, it will also be important to ensure that stability, relative to sponsor budgets, is maintained.

Evolution

- The Fund remains open to new members and future accrual. It is therefore growing due both due to interest accruing on past service liabilities, and due to new liability accrual. The liabilities are also maturing (the proportion of pensioner members is growing) and this will change the cash flow profile of the Fund through time. Ultimately more cash will be paid out than is received in cash contributions, making income and volatility, in addition to generation of investment return, more important considerations going forward.

Key Considerations

- The Council has established clear beliefs regarding Environmental, Social and Governance ("ESG") factors, believing that a strong Responsible Investment approach will add value over the long-term and be mutually beneficial to wider society. These are documented in the Fund's Investor Belief statement. We believe the changes proposed in this report will make a significant difference, in terms of ESG, and provide a platform for further positive change.
- In conjunction with this strategic change, we believe that your beliefs should be translated into a set of clear principles which can then be used to measure and monitor the appointed managers and to assess the selection of any new investment managers in future.
- The Council also has established a set of financial beliefs which it uses to guide its approach to markets, asset allocation and investing in general. These are:
  - The Fund is a long-term investor and invests predominantly with this time frame in mind – not to make short-term gains.
  - Asset mix is important and drives performance over the long-term.
  - The Fund will take appropriate professional advice to inform strategy and decision making.
  - The Fund believes that there is a place for active and passive management and places equal weight on both.
  - Investment costs are important and should be minimised where possible after taking net performance into account.

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What return is required?

Overview

- At the March 2019 Actuarial Valuation, the discount rate used to value the liabilities was 4.5% p.a. The Actuary therefore requires the assets to deliver at least 4.5% p.a. to achieve full-funding based on the agreed contributions (all else being equal).
- The discount rate can be interpreted as the Actuary's prudent assessment of the return the assets are expected to deliver over the long-term. The Actuary estimates the likelihood of the Fund's current strategy achieving 4.5% p.a. return is c.70% over the next 20 years.
- The discount rate assumption used at the March 2016 Actuarial Valuation was 3.8% p.a. This assumption was not based upon the absolute level of returns that the asset portfolio was expected to achieve, but instead comprised of the yield available on UK Gilts, along with a prudent asset performance margin as an estimate of long-term asset performance.
- Whilst the discount rate used in the 2019 valuation has no explicit link to UK Gilt yields (like the 2016 assumption) or to price inflation, we would expect that there is some implicit connection – therefore it is reasonable to consider the discount rate relative to the expected rate of long-term price inflation ("CPI").
- As at 31 March 2019, the required return of 4.5% p.a. translated to a return of CPI + 1.6% p.a. (using Isio's long-term expected rate of CPI inflation). As at 31 March 2020, the required return of 4.5% p.a. translated to a return of CPI + 2.2% p.a.
- The current benchmark strategy has an expected return of 4.8% p.a. The difference between the expected and required return reflects an element of prudence in the Actuarial funding assumptions which is to be expected.

Key Considerations

- The Council's objective for the Fund is to achieve a stable and affordable contribution for the employers.
- Based on the current strategic asset allocation, we expect the Fund to return in excess of 4.5% p.a., however targeting this level of return comes with a material level of investment risk.
- It is likely that reducing the expected return from the investment strategy will increase pressure on the funding requirements. We believe that broadly maintaining the current level of expected return is likely to support the Council's key objective.
- We believe that the Council should continue to evolve the investment strategy to target a similar level of return, whilst seeking to find investment opportunities to reduce variability around this (reducing risk).
- The Council should consult the Actuary on any proposed changes to the Fund's investment strategy, to understand the impact, if any, to the underlying funding basis.

Source: Hymans Robertson

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Current Strategy

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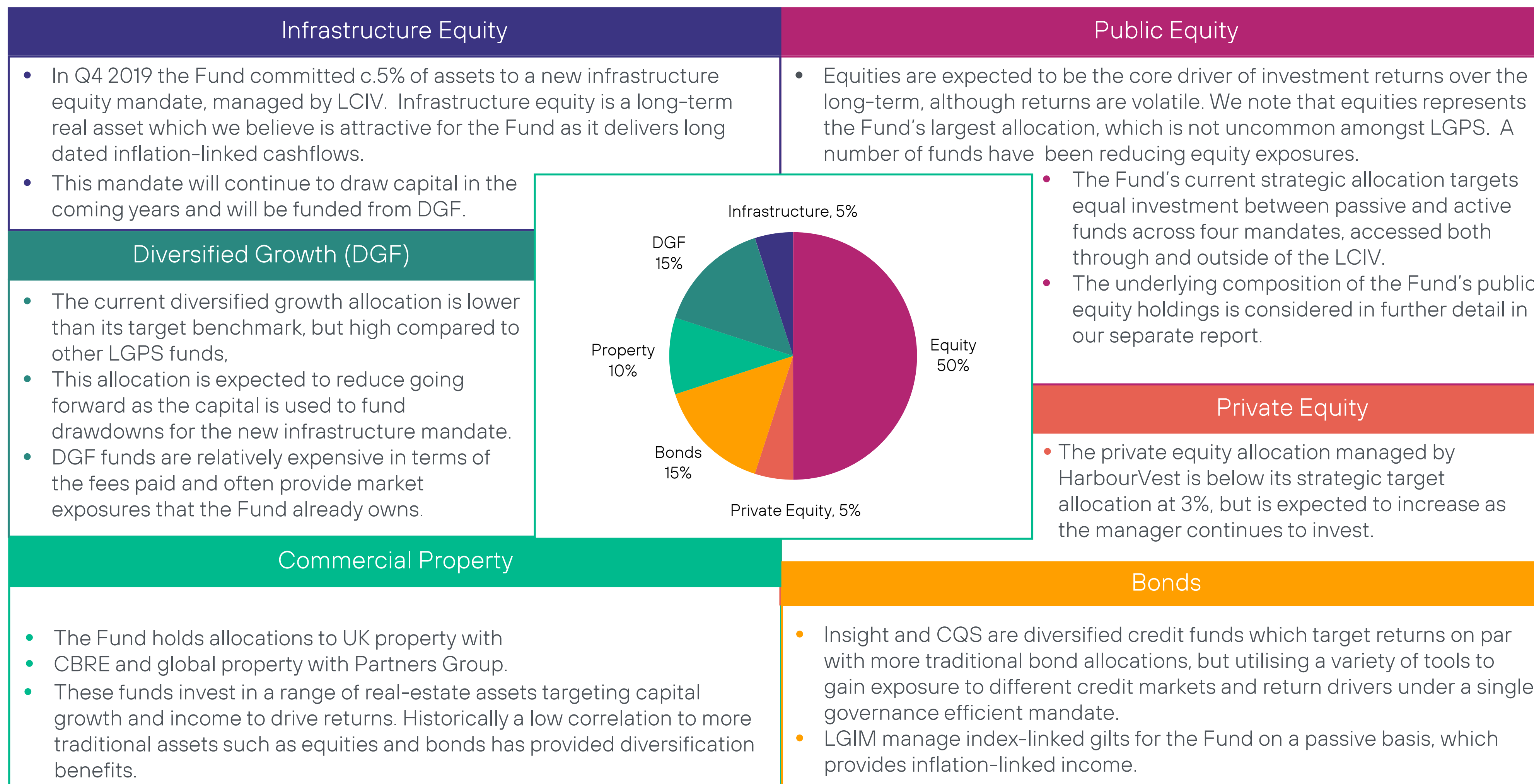
Investment strategy overview



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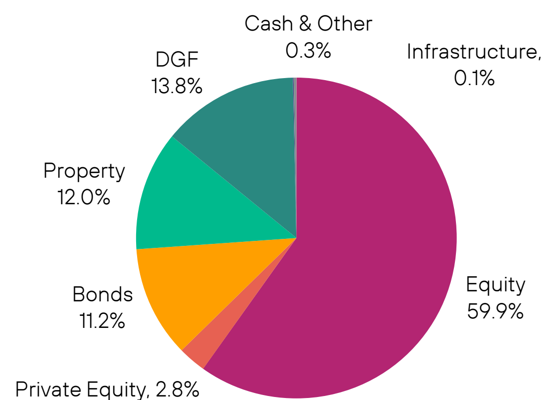
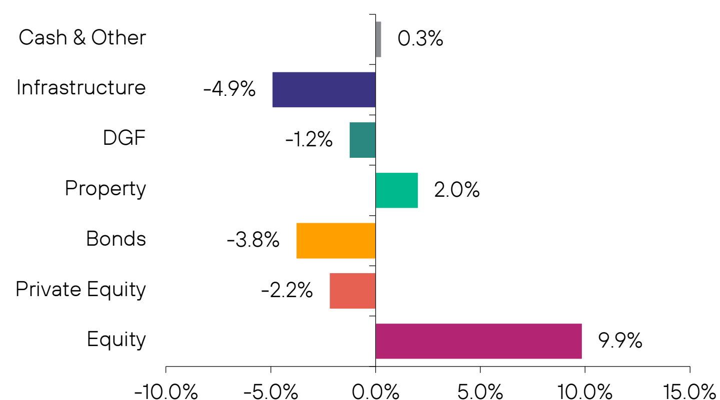
Current strategy – actual position

Current Actual Allocation – 31 March 2020



Current Allocation Relative to Strategic Allocation



Comments and Observations

- As at 31 March 2020, the Fund's asset portfolio comprised of 8 separate asset classes (splitting multi-asset credit and index-linked gilts) and 13 individual managers, with exposures across both public and private markets.
- The Fund is currently overweight in equities (+10% vs target). This is reflective of strong equity performance in recent years, and of holding of capital in public equities which is earmarked for the private equity mandate (2.2%) but not yet called. This corresponds to underweight positions in the Fund's other asset classes, with the exception of cash and property. Holding this significant overweight position to equity increases the risk profile of the Fund,
- The current 14% allocation to diversified growth funds ("DGFs") is split between three managers, The Fund currently intends to use two of these DGF holdings (Aberdeen Standard and Ruffer) to fund upcoming drawdowns into the newly appointed Infrastructure mandate, held with LCIV. The expectation is that this mandate will continue to call down capital over the next 18-24 months, which will reduce the underweight position to infrastructure and reduce the allocation to DGF, with only the allocation to Barings expected to remain. We support this direction of travel given Ruffer was appointed as an interim holding during the transition to infrastructure equity and ASI and Barings were appointed with a focus on downside protection relative to equity markets.
- The Fund has an 11% allocation to bonds, with 3% being held within index-linked gilts which provides direct inflation exposure. The remainder is held in absolute return bonds / multi-asset credit.
- There is also a 12% allocation to property, spread both globally and in the UK, this is broadly in-line with the benchmark allocation. These allocations are fully invested and the expectation is that they will continue to deliver return though a combination of capital appreciation and income.
- There is c.3% allocated to private equity, held with one manager, HarbourVest, This allocation will continue to increase towards benchmark weight as further commitments are made over the coming years. This has been funded from public equities to date.

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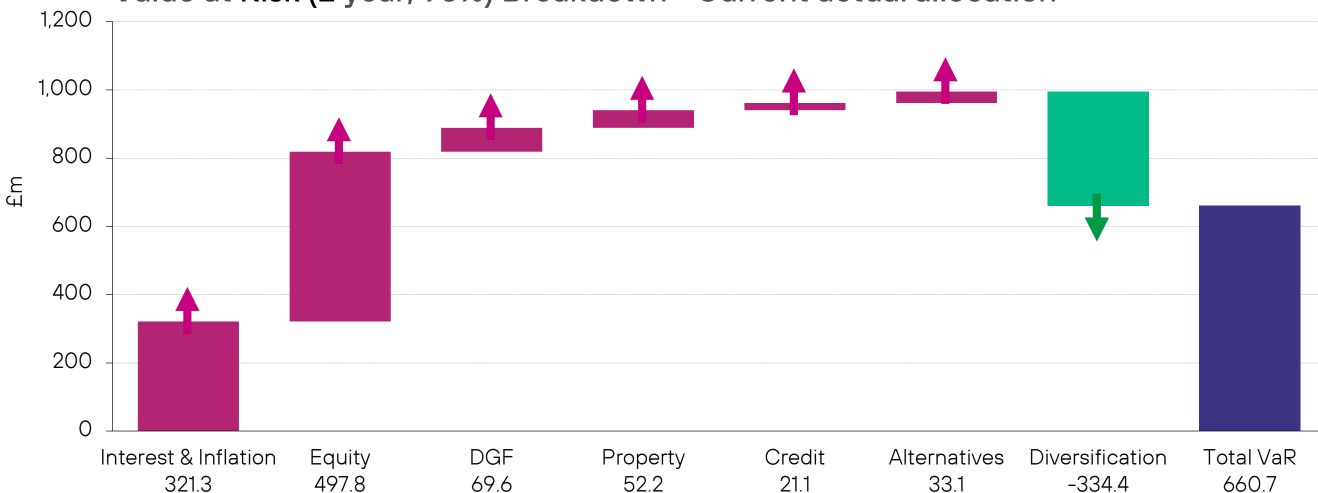
Risk analysis



Comments

- The charts to the left illustrate the overall level, and composition of, investment risk in both the strategic and current allocations, as measured by the 1 in 20, 2 year Value at Risk ("VaR").
- The VaR represents the difference in the funding trajectory in two years' time between the expected (median) outcome and the 5th percentile negative outcome.
- The total risk (2 year, 1 in 20 VaR) for the strategic allocation is c.£619m. We have chosen to show the 2 year VaR (as opposed to the more commonly used 3 year) to illustrate the risk prevalent over the period leading up to the next valuation.
- The Fund's key risk exposures are:
  - increasing in inflation – given the vast majority of pension payments are linked to inflation, an increase would increase the amount paid out to Fund members;
  - equity risk – given the 50% strategic allocation to equities, a further fall in equity valuations (in addition to the one we have recently witnessed) would result in a material decrease in the Fund's assets.
- The risk for the current actual allocation is slightly higher (+7%) than the strategic allocation, at c. £670m. This is due to the Fund's current overweight position in equities.
- The Fund has a 3% allocation to index-linked gilts which provides some direct inflation exposure. The infrastructure allocation will provide some directional protection against rising inflation once the capital is drawn.
- We believe that there is scope for the Fund to seek to better manager these key risks by evolving the strategic asset allocation.

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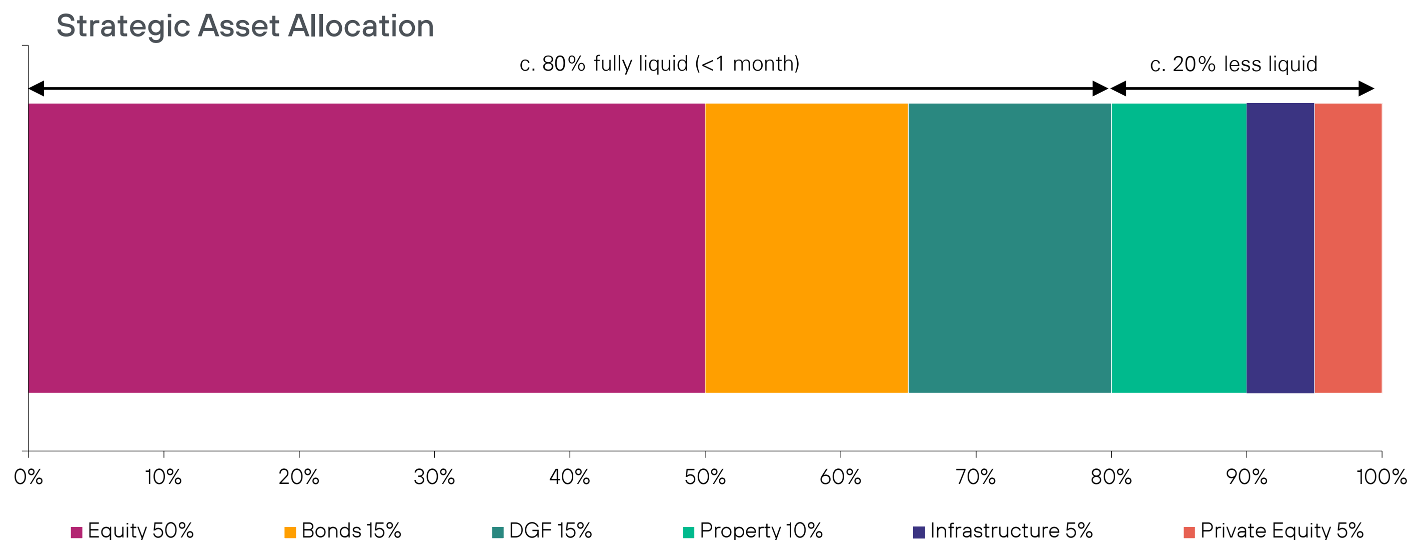
Liquidity profile



Observations

- Based on the target strategic allocation, the asset strategy is very liquid with c. 80% of assets able to be liquidated within a month and a significant proportion in a matter of days. The remainder of the assets (c. 20%) are in less liquid asset classes.
- Whilst the Fund is large, much of the portfolio could be liquidated relatively quickly with minimal market impact. We cannot envisage any circumstances where the Fund would need this level of liquidity or flexibility.
- As a long-term investor, the Fund has the ability to tie-up capital in long-term opportunities. We therefore believe that there is scope for the Fund to increase the allocation to less liquid markets if attractive investment opportunities with a premium for doing so are available.
- We consider the cashflow requirements overleaf.

Source: Investment managers

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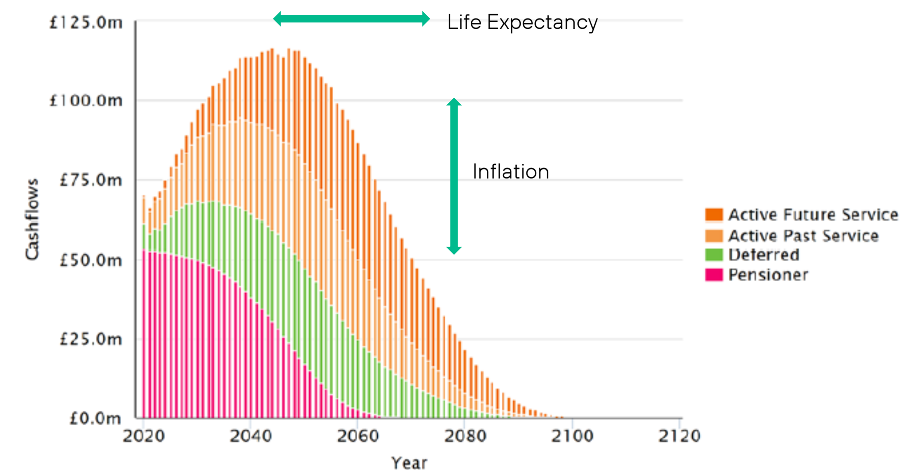
Cashflow profile

- The Fund is expected to have a number of cash outflows over the coming years, with an element of uncertainty in respect of the size and timing of some of these outflow payments. There will be three core capital outflows:
  - Monthly pension payroll (which is fairly predictable);
  - Lump sum / death grant member payments (there is a degree of uncertainty over such benefits as they are more variable in nature);
  - Expenses such as manager fees, transaction costs and other miscellaneous charges.
- The Fund Actuary has shared details of the annual contributions and expected pension payments over the next five years. We have summarised this information, along with an estimate of the Fund's expenses, in the table to the right. The figures do not account for the potential prepayment for three years' worth of the monetary elements of contributions, which we understand is currently under review.
- The analysis in the table shows that the expected contributions will broadly offset the Fund's outgoings, though there is likely to be a shortfall each year. Any shortfall can be met using existing investment income.
- Based on the current asset allocation, with the private equity, property, multi-asset credit and infrastructure mandates providing income, we estimate this to be c. £19m p.a. This is expected to increase to c. £25m p.a. once the infrastructure mandate is fully drawn.
- As noted on page 12, the Fund has more than sufficient liquidity to deal with any relatively small deviations in these amounts that may lead to a net cash shortfall. We understand that there is potential for an asset and liability transfer from the Fund if one of the sizeable employers, the Improvement and Development Agency, leaves. This would be a material change and one that should be kept under review.
- At this stage, we do not believe that there is a strong need to significantly increase the level of investment income within the strategy in the short-term. However, we note that this may be a natural consequence of reducing the overall level of risk by focusing on mandates which deliver more of their returns via contractual income.

Liability Profile



Cashflows (£m)	Year 1	Year 2	Year 3	Year 4	Year 5
Income					
Employer contributions	£54.2	£55.7	£58.2	£60.7	£61.6
Employee contributions	£11.5	£12.2	£12.5	£12.8	£13.2
Outgo					
Regular pension payments	(£54.9)	(£56.5)	(£58.5)	(£60.6)	(£62.8)
Lump sum pension payments	(£14.5)	(£9.1)	(£10.2)	(£9.5)	(£10.4)
Expenses[2]	(£9.5)	(£9.5)	(£9.5)	(£9.5)	(£9.5)
Net Cashflow	**(£13.1)**	**(£7.1)**	**(£7.5)**	**(£6.0)**	**(£7.8)**

Note: [1] Hymans note that the lump sum figure is slightly higher in the first year compared to other years as it is assumed that everyone over retirement age retires immediately. [2] Expenses are based on the average investment management expenses for the Fund across 2017/2018 and 2018/2019.

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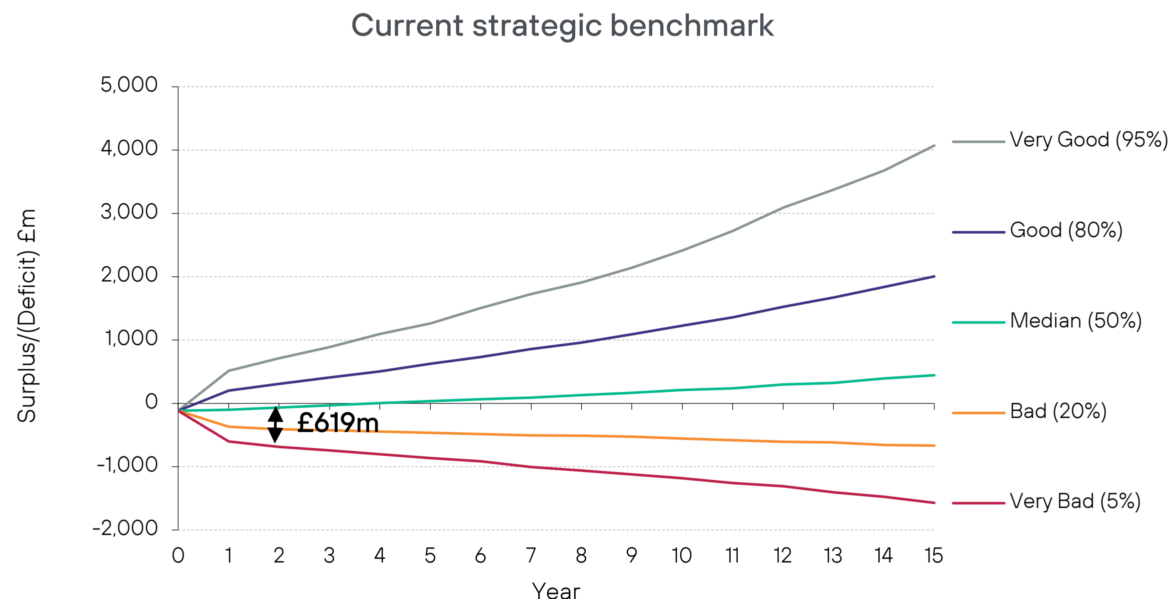
Source: Hymans Robertson

Funding trajectory



Funding Position – 31 March 2020	
Discount rate	4.5%
Current surplus (deficit)	(£116m)
Current funding level	c.93%

Forecast Funding Position – 2 Years' Time	
Expected deficit / surplus	(£66m)
Expected funding level	c. 96%
Estimated Funding Deficit 1 in 20 chance (5%)	£685m

Comments

- The central expectation is for the funding position to continue to improve and increase gradually over time due to contributions and investment returns .
- Based on the estimated 31 March 2020 position and median predicted outcome going forward, we expect the Fund to be in surplus in c. 5 years time and, after this point, for this surplus to steadily grow. Ultimately any surplus could be used to bring down the future service cost of the Fund to the employers.
- We have accounted for the estimated contribution rates based on the 2019 Actuarial Valuation results (c. £134m over the next two years for future service contributions). The figures do not account for the potential prepayment for three years' worth of the monetary elements of contributions, which we understand is currently under review.
- The chart highlights the degree of variation (both upside and downside) that the Fund is exposed to by the current investment strategy. This volatility could have a material impact on the funding position, and future cash funding requirements. There is a 1 in 20 chance that a deficit of c.£685m or more could arise by the 2022 Actuarial Valuation.
- We believe there is scope to reduce investment risk and lessen the impact of any potential downside scenarios, essentially narrowing the range of outcomes.
- We believe this can be achieved whilst maintaining the current level of expected returns. Some positive upside is sacrificed to remove some of the downside.

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Environmental, Social and Governance ("ESG") Considerations

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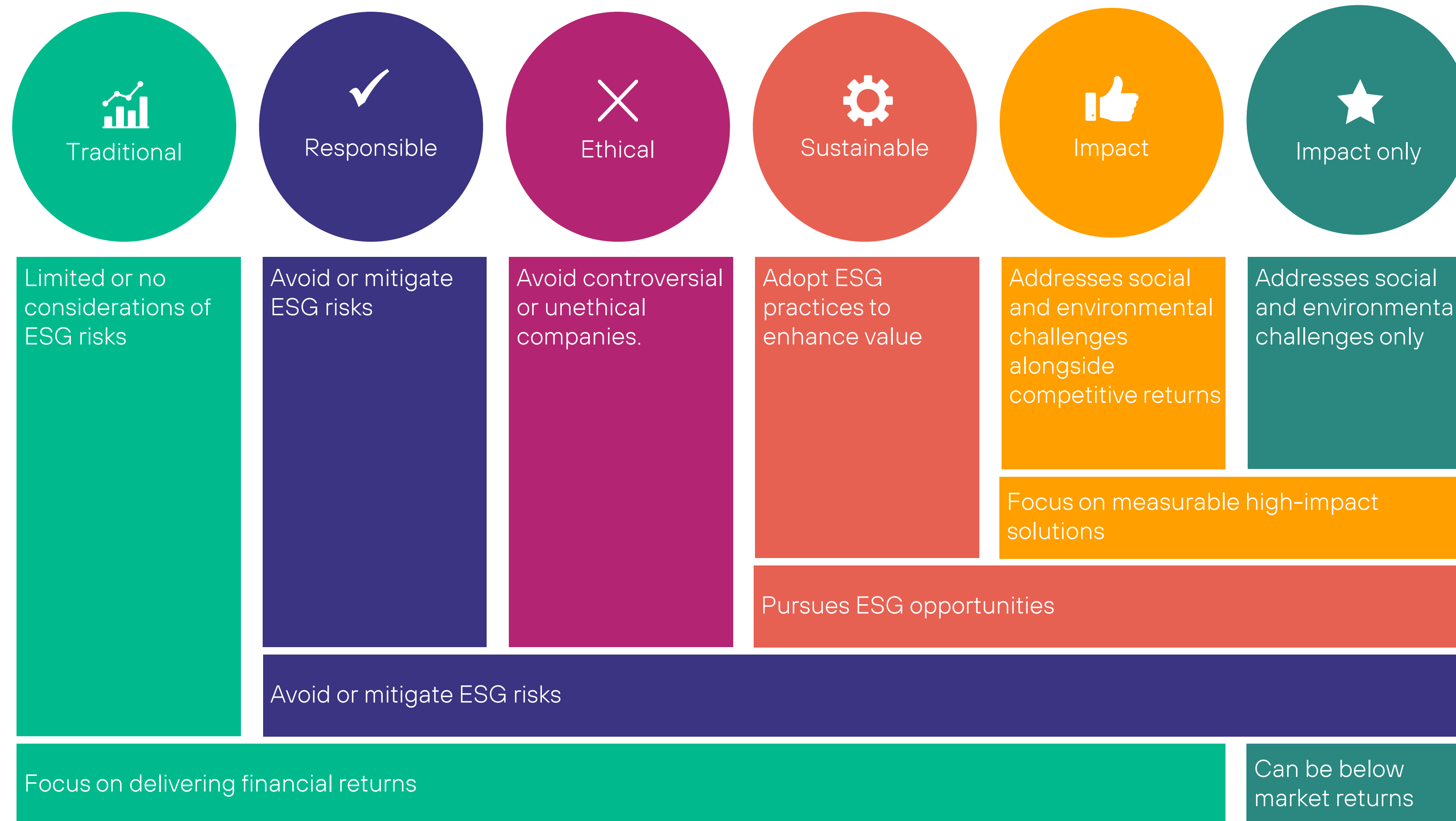
Responsible investment – spectrum of approaches



- We understand that the Council believes that a strong Responsible Investment approach will add value over the long-term and be mutually beneficial to wider society.
- As such, the Council has agreed a Responsible Investment Policy that explains how the Fund will incorporate Environmental, Social & Governance ('ESG') factors into investment decision making and demonstrate a responsible approach to investment across the Fund's portfolio . The chart to the left illustrates a spectrum of approaches that can be implemented.
- The Council has identified a sub-section of United Nations Sustainable Development Goals which represent the strongest investment risks and opportunities for the Fund and its Pension Committee.[1] The Council expects all investment managers and advisors to prioritise these when making investment decisions on behalf of the Fund.
- The Council also expects Investment managers to ensure that they select investments that help transition to the net-zero carbon economy and to not invest in stranded assets.

Note: [1] These include; Life below water (SDG 14), Life on land (SDG 15), Good Health and well-being (SDG 3), Clean Water and Sanitation (SDG 6), Affordable and clean energy (SDG 7), Sustainable cities (SDG 11), and Partnerships for goals (SDG 17).

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UN Sustainable Development Goals ("UN SDG") focus areas

The following United Nations Sustainable Development Goals ("UN SDGs") have been identified as key areas of focus for the Fund, its investment managers and advisors when making investment decisions. These have been documented in the Investor Beliefs Statement.

Environmental

Climate action (SDG 13) - Goal: Taking urgent action to tackle climate change and its impacts.
Life below water (SDG 14) - Goal: To conserve and sustainably use the world's oceans, seas and marine resources.
Life on land (SDG 15) - Goal: To sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.

Social

Decent work and economic growth (SDG 8) - Goal: To promote inclusive and sustainable economic growth, employment and decent work for all
Good Health and well-being (SDG 3) - Goal: To ensure healthy lives and promote well-being for all at all ages.
Clean Water and Sanitation (SDG 6) - Goal: To ensure access to safe water sources and sanitation for all.
Affordable and clean energy (SDG 7) - Goal: To ensure access to affordable, reliable, sustainable and modern energy for all.
Sustainable cities (SDG 11) - Goal: To make cities inclusive, safe, resilient and sustainable.

Governance

Gender Equality (SDG 5) - Goal: To achieve gender equality and empower all women and girls.
Partnerships for goals (SDG 17) - Goal: To revitalize the global partnership for sustainable development.

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UN SDG integration within current strategy

Steps to integrate UN SDGs into the Fund's current investment strategy:

1. **SDG targets set:** Council to agree on a subset of SDGs of most importance to the Fund
2. **Updated Investor Beliefs Statement:** Council to agree key objectives and outcomes for each UN SDG with input from Isio, including stewardship policies
3. **Manager collaboration:** Isio/Council to communicate with investment managers to understand how the Council's beliefs can be integrated and any restrictions e.g. data availability, conflicting stewardship policies
4. **ESG policy implementation:** Council to finalise and share clear ESG principles with managers
5. **Manager integration:** Managers to set KPIs with portfolio companies in alignment with the' principles
6. **Reporting:** Managers to report on KPIs, Isio/Council to monitor progress

SDG Framework Example	
SDG	Climate Action (13)
Outcome/Objective	Net zero portfolio
Metrics	Scope 1, 2, (3) green house gas/ $m revenue Voting & engagement data
KPIs	Reduction in green house gas emissions over a specified time period or relative to some specified benchmark Voting & engagement activities consistent with objectives
Journey	• Availability of data covering scope 1, 2 and 3 • Increased reporting by investment manager • Investment manager alignment with global frameworks e.g. Paris Agreement, TCFD, Transition pathways initiative

Scope 1 green house gas emissions are direct emissions from sources that are owned or controlled by the portfolio company. Scope 2 green house gas emissions are indirect emissions from sources that are owned or controlled by the portfolio company. Scope 3 green house gas emissions are from sources not owned or directly controlled by the portfolio company but related to their activities.

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Scope to improve UN SDG alignment in strategy (1)

Once the process outlined on the previous page has been completed with your current investment managers the Council will have a better idea what is/isn't possible within your investment portfolio in targeting impacts in line with the UN SDGs. If you decide that your investment portfolio and managers are not targeting your key objectives, you may decide to further evolve your strategy to achieve greater alignment.

In the table below we have explored the opportunities available to align the Fund's investments with the key UN SDGs, there are also funds that are aligned with all 17 SDGs.

<table>
<tr><th>Key SDG</th><th>Investment Examples</th><th>Current Opportunities</th></tr>
<tr><td>Climate action
SDG 13</td><td>• Energy production: companies that produce renewable energy (wind, solar, geothermal etc.)
• Forest conversation/management: companies responsible for maintaining, preserving or managing a forest(s)</td><td>• Climate aware funds are available across a range of asset classes, these are typically designed to capitalise on the long-term transition to a low green house gas emissions economy.
• Climate aware equity funds are considered in greater detail in our separate equity review report.
• The Council's existing infrastructure allocation is expected to have a significant exposure to renewable energy. Increasing the infrastructure allocation could be considered.</td></tr>
<tr><td>Life below water
SDG 14</td><td>• Farming companies: sustainable shellfish/fish farmers
• Multipurpose farming companies: packing/manufacturing/multi-purpose agribusinesses companies
• Food technology: companies that develop and produce products for sustainable agriculture businesses</td><td rowspan="2">• There is limited fund availability currently to specifically target SDG 14 and 15 directly. However there is an increased interest in sustainable food production and agriculture and so we are expecting rapid development in this space.
• We believe that engagement from your appointed investment managers on these issues is key to influencing corporate behaviour and the belief should be communicated to your managers.
• These SDGs may be captured by an impact fund following an approach that targets multiple SDGs</td></tr>
<tr><td>Life on land
SDG 15</td><td>• Farming companies: sustainable crop producers, cattle/animal farmers
• Food technology: companies that develop and produce products for sustainable agriculture businesses, plant-based food producers
• Forest conversation/management: companies responsible for maintaining, preserving or managing a forest(s)</td></tr>
<tr><td>Decent work and economic growth
SDG 8</td><td>• Vocational and professional training: companies that design and deliver vocational and professional training targeting students, educators and general professionals
• Financial services provider: companies and organisations that provide products and services including loans, savings, remittances, cash management, factoring, leasing and mortgages</td><td>• There are impact funds available with a focus on social issues. A market search would br required to identify opportunities available to the Fund.</td></tr>
</table>

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Scope to improve alignment in strategy (2)

Key SDGs	Investment Examples	Current Opportunities
Good health and well-being SDG 3	• Laboratories and pharmaceutical companies: companies responsible for managing laboratories and producing medicines • Health clinics and health facilities: companies responsible for managing health facilities • Tech companies: technology companies that develop and deliver products and services to health facilities and laboratories	• Your existing managers should be engaging on these issues with investee companies and also seeking to benefit from the opportunities in these areas. We would encourage the Fund to communicate the importance of these areas to your managers. • These SDGs may be captured by an impact fund following an approach that targets multiple SDGs
Clean water and sanitation SDG 6	• Water management/treatment: companies that manage water systems and/or treatment facilities • Water distribution/technology: utility companies that provide water and sanitation to urban and rural areas • Technology companies: companies that develop and deliver products and services to sustainable forests	
Affordable and clean energy SDG 7	• Energy production: companies that produce renewable energy (wind, solar, geothermal, biomass etc.) • Power storage: companies that produce batteries and other source of power storage • Transport: companies that produce electric vehicles • Energy products: companies that products energy products (turbines, solar panels)	• There are a range of funds specialising in sustainable energy infrastructure and clean energy. The Fund already has some exposure via the Infrastructure allocation, but this could be extended in due course. • Some renewable energy green bonds have been issued but this is currently a very small market but may grow in future.
Sustainable cities SDG 11	• Green building technologies: clean tech companies that create products or services for green buildings • Housing construction: construction firms that adopt green building practices and strategies • Affordable homes: companies that built and/or sell affordable housing to low-income groups	• Similarly to the above, there are funds specialising in sustainable infrastructure available. It is important to engage with the LCIV around these issues to understand how this might be addressed by the infrastructure allocation.
Gender equality SDG 5	• Gender equality policies: companies that lag behind on gender equality policies e.g. discriminatory recruitment policy, commitment to pay a fair wage to all employees, protections for employees reporting harassment • Women-lead businesses: increasing venture capital to women-led businesses • Accessible housing: improving access to housing for women and gender & sexual minorities	• There are opportunities to invest in socially responsible funds that invest in gender equality leaders, a market search to identify those opportunities available to the Fund across all asset classes • We strongly believe that all investment managers should engage on gender equality and that your current managers should be assessed on their approach to this.
Partnership for goals SDG 17	• Knowledge distribution: companies that improve access to technology and knowledge to share ideas and foster innovation • International trade: companies that promote international trade, and help developing countries increase their exports	• There currently aren't funds available that are specifically aligned with SDG 17 as it feels like a goal that is overriding all other SDGs.

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Proposed Direction of Travel

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Proposed direction of travel

Equity allocation

- For a number of years the Fund's equity allocation has been significantly overweight versus its strategic target. Recent market volatility has highlighted the risk to the funding level posed by holding a large equity allocation.
- We believe that a robust, well diversified equity portfolio should remain a core part of the Fund's asset allocation to drive long-term growth, however we believe there is scope to reduce the allocation from its current position.
- At a minimum, we believe the current position should be realigned to the current target allocation. This will increase diversification within the portfolio and remove a material level of risk.
- Our separate report comments on the structure of the equity portfolio and its ESG characteristics.

Diversified growth fund ("DGF") allocation

- The Fund currently has a 14% allocation to DGFs, split across three mandates.
- In recent years, DGF's have not delivered performance in-line with expectations. Given this, and the significant overall size of the Fund, we believe that diversification can be achieved with greater efficiency, control and increased cost effectiveness, simply by allocating to a diverse range of asset classes directly on a stand-alone basis.

Increase exposure to inflation-linked assets

- The Fund has already introduced allocations to index-linked gilts and infrastructure equity, which provide some inflation protection to help address the risk that rising inflation poses to the Fund.
- Increased inflation protection could be achieved through a top-up of these existing allocations, or through consideration of a new asset classes with returns linked directly to inflation, e.g. long lease property, or indirectly linked to inflation e.g. residential property.

Consider allocating to illiquid credit assets

- The Fund has a very long-term investment horizon. as such, there is an ability to lock up capital for longer periods of time and earn a return premium for doing so. This is a key advantage compared to other investors.
- Private debt assets offer access to this "illiquidity premium" whilst delivering the majority of their returns through contractual income, as opposed to equities where returns can be volatile as they rely on capital growth.
- These markets offer opportunities across a broad spectrum of risk/return profiles and asset classes e.g. direct corporate lending, real estate debt and infrastructure debt, or funds which invest in a combination of these.

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Alternative Strategies

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Alternative asset classes – real assets

Real Assets

Long Lease Property	Residential Property	Infrastructure Equity
Long lease property funds consist of a diversified portfolio of commercial property assets with the aim of providing a predictable, inflation-linked and growing income stream. They offer a much higher degree of certainty over future rental income than traditional balanced property investments. The underlying contracts are typically RPI-linked with lease contracts extending over 20 years on average.	Residential property funds own residential property developments to cater for long-term rental tenants. Fund can vary in focus from the Private Rented Sector, Build to Rent, Affordable Housing and Social Housing. Developments are often purpose built and designed to take advantage of economies of scale. Rental contract prices are typically fixed in nature and have been set with either a direct link to inflation or fixed increases with inflation in mind.	Infrastructure opportunities provide a potential source of inflation-linked income and can also offer government backed income streams at attractive yields. Infrastructure equity involves equity investments across a range of sectors including renewable energy, toll roads, electricity and gas transmission, telecommunications, etc. Investments are in either brownfield (infrastructure assets already in operation) or greenfield (new construction) assets which can help investors meet future cashflow needs.
Expected return (net): Gilts + 2-3% p.a.	**Expected return (net):** Gilts + 2-4% p.a.	**Expected return (net):** Gilts + 5% p.a.
Cash yield: c.4-5% p.a. net paid quarterly	**Cash yield**: c.4-5% p.a. net paid quarterly	**Cash yield**: 5-7% p.a.
Volatility: 8% p.a.	**Volatility**: 12-14% p.a.	**Volatility**: 10-15% p.a.
Liquidity: Semi-open ended, semi-annual redemptions after 18 months from initial investments	**Liquidity**: Depending on product – either semi-open ended with limited quarterly following some initial yearly lock-ins or closed-ended	**Liquidity**: Depending on product – either semi-open ended with limited quarterly following some initial yearly lock-ins, or closed-ended
Inflation linkage: High	**Inflation linkage**: Some – can vary depending on product focus	**Inflation linkage**: High
Potential for positive ESG impact: Medium	**Potential for positive ESG impact:** High	**Potential for positive ESG impact:** High

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Alternative asset classes – private debt

Private Debt

Private Corporate Lending

Private corporate debt involves providing finance (loans) in private markets, mainly to small to medium sized businesses. Investments are drawn down over a 3 year investment period.

Returns from the funds are generated from coupon payments, origination fees, as well as the principal repayment at the end of the loan, and provide pension schemes with a stream of contractual cashflows.

	Unitranche	
	Senior	Junior
Expected net return p.a.	Gilts + 3%	Gilts + 5%
Cash yield p.a.	3-5%	4-6%
Risk p.a.	6-8%	8-10%.
Liquidity	5-8 year closed-end structure	
Inflation linkage	Low, floating rate	
Potential for +ve ESG impact:	High	

Commercial Real Estate Debt

Commercial Real Estate Debt funds are comprised of a concentrated portfolio of loans for the purpose of refinancing and refurbishments, backed by commercial real estate.

Unlike traditional property investments, which can rely heavily on capital appreciation for returns, the returns on CRED funds are in the form of coupon payments and origination and prepayment fees.

	Whole loan	
	Senior	Junior
Expected net return p.a.	Gilts + 2%	Gilts + 5%
Cash yield p.a.	5%	6%
Risk p.a.	6-10%	12-16%.
Liquidity	5-8 year closed-end structure	
Inflation linkage	Low, floating rate	
Potential for +ve ESG impact:	Medium	

Infrastructure Debt

Infrastructure debt involves lending for the construction/expansion, refinancing or purchase of infrastructure assets. The senior debt sits at the top of the capital structure whilst junior debt sits in the middle of the capital structure, protected by the equity tranche (typically 15% - 40%).

The two broad types of assets are Brownfield (lending to established projects) and Greenfield (lending whilst project still in development stage). They have differing risk/ return profiles.

	Senior	Junior
Expected net return p.a.	Gilts + 1-2%	Gilts + 3%
Cash yield p.a.	4%	5%
Risk p.a.	6%	9%.
Liquidity	30+ year	0+ year
Inflation linkage	Largely inflation - linked over the investment period	Low, floating rate
Potential for +ve ESG impact:	Medium	

Private Multi-Asset Credit

Gives the manager flexibility to invest across a range of private debt assets, mainly those described in the boxes to the left. Typical portfolio composition would be; 25-75% corporate debt; 10-60% real estate and infrastructure debt; 0-30% opportunistic debt which may include distressed investments

This is a lower governance alternative to making separate allocations and allows the manager to make active decisions in terms of asset allocation. They can be accessed via open or closed-ended funds, but the latter is the most common.

Expected return (net)	Gilts + 4-6%
Cash yield	4-6%
Risk	8-12%
Liquidity	5-8 year closed-end structure
Inflation linkage	Low, floating rate
Potential for +ve ESG impact:	Low

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Portfolio options

	Current Strategy	Alternative strategy 1 Reduce DGF, increase ILGs and add LLP/ Residential Property	Alternative strategy 2 Remove DGF, increase ILGs and add LLP/ Residential Property	Alternative strategy 3 Reduce DGF & Equity, increase ILGs and add Private Debt	Alternative strategy 4 Reduce Equity, remove DGF, increase ILGs add Private Debt & LLP / Residential Property
Allocation	Infrastructure Equity, 5% DGF 15% Commercial Property, 10% Multi Asset Credit, 12% ILGs 3% Private Equity, 5% Equity 50%	LLP / Residential Property, 5% DGF 5% Infrastructure Equity, 5% Commercial Property, 10% Multi Asset Credit, 12% ILGs 8% Private Equity, 5% Equity 50%	LLP / Residential Property, 6.5% Infrastructure Equity, 6.5% Commercial Property, 10% Multi Asset Credit, 12% ILGs 10% Private Equity, 5% Equity 50%	Infrastructure Equity, 8.0% DGF, 7.5% Commercial Property, 10% Private Debt, 7.5% Multi Asset Credit, 12% ILGs 10% Private Equity, 5% Equity 40%	LLP / Residential Property, 7.5% Infrastructure Equity, 8% Commercial Property, 10% Private Debt, 7.5% Multi Asset Credit, 12% ILGs 10% Private Equity, 5% Equity 40%
Expected return (% p.a.)	4.8%	4.6%	4.6%	4.7%	4.6%
VaR (2 yr, 1 in 20 chance)	£619m	£577m (-7%)	£552m (-11%)	£520m (-16%)	£491m (-21%)
Expected 2 yr funding deficit	(£66m)	(£67m)	(£70m)	(£61m)	(£60m)
Assets linked to inflation (%)[1]	8%	18%	23%	18%	26%
Assets in illiquid opportunities[2]	20%	25%	28%	31%	38%
Indicative annual fees	£8.1m	£7.4m	£7.0m	£8.1m	£7.8m
Number of new asset classes	Currently 8 asset classes and 12 underlying mandates	Asset classes: +1 Mandates: -1	Asset classes: +1 (& remove DGF) Mandates: -2	Asset classes: +1 Mandates: -1	Asset classes: +2 (& remove DGF) Mandates: -1

Note: [1] Assets include: index-linked gilts, property & infrastructure equity. [2] Assets include: property, private equity, private debt & infrastructure equity.

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Investment strategy considerations (1)

	Comments	Considerations
Funding of private equity mandate	• The Fund invests in an illiquid private equity fund with HarbourVest which is currently 63% drawn. • HarbourVest expect the fund to be fully-drawn by 2025. Over this period the fund will be making distributions as well as drawing on commitments, however due to the uncertainty regarding timing and size of these distribution payments, it may not be possible to offset the two cashflows against each other. This means that the capital required to fund drawdowns may need to be sourced from another area of the portfolio. • From 2025 onwards the fund is expected to distribute the remaining capital until it is fully paid out in 2029.	• Historically, the private equity mandate has been funded using the L&G UK passive equity mandate. We are comfortable that the Council continues to use the equity allocation as a source for these drawdowns but this should be done whilst taking a view on the asset positioning relative to strategic target, with any drawdowns aiding in re-aligning the allocation with its strategic weight. We note that the composition of the equity allocation is currently under review which may result in the process for disinvesting changing slightly if a different equity mandate (from L&G passive UK) is required as a funding source. • When the private equity fund is fully drawn in c. 5 years, the Council will need to review the Fund's strategy to determine how the subsequent capital distributions should be re-invested.
Funding of infrastructure mandate	• Towards the end of 2019 the Fund made a 5% allocation through the LCIV to an infrastructure mandate managed by Stepstone. • This fund is in the early stages of drawing down capital, having called only 1% of the £106m commitment.	• The expectation is that this mandate will continue to call capital over the next 18-24 months, which will reduce the underweight position to infrastructure. • We expect that taking secondary interests in infrastructure funds may be an attractive opportunity as stressed sellers are forced to exit – we understand that the LCIV has scope to exploit this opportunity should it arise.

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Investment strategy considerations (2)

	Comments	Considerations
Practicalities surrounding closed-ended investments	• Some of the alternative asset classes proposed would likely be accessed using closed-ended funds e.g. private corporate lending, commercial real estate debt and private multi-asset credit. • It is not practical to rebalance the allocations to investments which are in closed-ended funds and allocating to these type of vehicles reduces the overall liquidity of the assets.. • The funds also operate on a drawdown basis which increases governance requirements.	• The Council should ensure that the Fund is diversified across asset classes, funds and vintages. The size of the Fund's total assets means that even an allocation as small as 5% can take some time to be invested by the underlying manager. The Council should ensure that it is comfortable with the liquidity of, and the expected time taken to implement these allocations, and establish a source elsewhere within the portfolio from which capital is called. • We believe there is sufficient liquidity in the current portfolio to allocate more to closed-ended vehicles.
Environmental, Social and Governance consideration	• There is a regulatory need, and a desire by the Council, for any investment decision to take into account ESG risks and considerations (including climate change). • The Council has established its stance regarding ESG factors, believing that a strong Responsible Investment approach will add value over the long-term and be mutually beneficial to wider society.	• The Council should consider the ESG impact and credentials of any investment strategy changes, and could use this review to introduce a more meaningful and impactful ESG intention in the Fund's portfolio. • This can be done through a variety of asset classes; the asset management industry has developed an increasing range of products in recent years in this respect. • As part of this review we envisage c.15% of Fund assets moving to a "sustainable" equity fund and potentially a further c. 13% to fund aligned with the Paris climate agreement. This is considered further in the separate equity review paper. Furthermore, the increased allocations to infrastructure equity and private debt presented in alternatives 2,3 and 4 could be achieved via renewable energy or sustainably focused mandates.
Management fees and transition costs	• The Fund is currently paying c.£8.1m per annum in investment manager fees. The Council should continue to identify ways to reduce fees and could streamline management arrangements to do so.	• The impact to ongoing management fees of any strategy changes, as well as the transaction costs, should be considered prior to any implementation.

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Investment strategy considerations (3)

	Comments	Considerations
Governance	• The Council does not have an unlimited governance budget should any portfolio changes be made.	• The number and complexity of any new asset classes, investment strategies and investment managers is an important factor to consider prior to any implementation.
LCIV	• The Council, through government regulation, is required to allocate the Fund's assets to the LCIV pool where a suitable investment option is available. • There have been ongoing staffing and governance issues at LCIV as well as uncertainty and delays around product launches.	• The Council met with representatives from LCIV at the Oct 2019 Committee meeting for a governance update and expressed a reluctance to allocate new capital to the pool until an improvement in governance could be demonstrated. • Although since then we have seen recent developments with the hire of three new senior staff members, the Council should continue to monitor governance and staff turnover at the LCIV on an ongoing basis. • When implementing the target investment strategy, the Council should continue to assess the fund range available on the pool and how this aligns to the target strategic requirements of the asset allocation. If LCIV are unable to provide a suitable proposition, within a suitable timeframe, then the Council should consider investing outside of the pool and the wider implications of doing so.
Index-linked gilts	• All of the alternative strategies proposed in this paper increase the strategic holding to index-linked gilts.	• Given real yields have trended downwards over recent years, current market pricing is high relative to historical averages. In addition, there is currently an ongoing government consultation in relation to Retail Price Index ("RPI") inflation reform. The income and principal payments of index-linked gilts are linked to RPI inflation so the outcome of this consultation, which is expected in August 2020, could affect market pricing. • These implementation factors should be considered if the Council decide to increase the strategic allocation to index-linked gilts. Please see Appendix 4 for further information.

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Implementation

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LCIV current product range

Fund	Size	Number of investors
Equity		
LCIV Global Alpha Growth Fund	£2,415m	13
LCIV Global Equity Fund	£584m	3
LCIV Global Equity Focus Fund	£678m	5
LCIV Global Equity Income Fund	£210m	2
LCIV Emerging Markets Equity Fund	£302m	6
LCIV Sustainable Equity Fund	£382m	3
LCIV Sustainable Equity Exclusion Fund	£210m	1
LCIV Global Equity Core Fund	Recently open for subscriptions	
Multi-Assets		
LCIV Global Total Return Fund	£309m	5
LCIV Diversified Growth Fund	£589m	8
LCIV Absolute Return Fund	£862m	10
LCIV Real Return Fund	£113m	2
Fixed Income		
LCIV MAC Fund	£713m	12
LCIV Global Bond Fund	£276m	3
Real Assets		
LCIV Infrastructure Fund	£339m committed	6

Source: LCIV

- Listed is the range of funds currently available on the LCIV platform. The yellow highlighted funds are those in which the Fund is already invested.
- On the following page we detail funds that LCIV have in the pipeline for future launch.
- We have identified those that could be utilised in implementing the proposed alternative strategies, however the majority of new asset classes that we have explored are not currently accessible though the LCIV platform. For these asset classes the Council should consider investing outside of the pool but would need to consider the wider implications of doing so.

Source: LCIV

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LCIV pipeline

Fund	Description	Anticipated launch date	Potential Suitability for Strategy
Inflation Plus Fund	The Inflation Plus Fund is expected to be structured to deliver contracted cashflows which increase with inflation; the expected income yield of the fund is 3% p.a. The fund's portfolio will comprise of long lease property, infrastructure debt, real estate debt, ground rents, real instate income strips and private corporate debt.	Q2 2020	The core element of the fund is expected to be long lease property. The Fund would therefore be a suitable option for consideration in implementing proposed portfolios 1, 2 or 4 from pg 24.
Renewables Fund	The proposed 100% renewable infrastructure fund is currently in the 'development phase', so specific details of the fund are yet to be established.	c. 12 months	The fund could potentially be utilised in implementing the top-up allocation to infrastructure equity, considered in proposed portfolios 2, 3 or 4 from pg 24, however the details of the fund are not yet sufficiently established to enable assessment of its suitability.
London Fund	The intention of the London fund is to access investment opportunities in Greater London across real estate, infrastructure and growth capital. It is expected to target a financial return of inflation plus, with a blended portfolio target return of [CPI+3%]. Its secondary investment objective is to generate social impact in Greater London i.e. job creation, area regeneration and positive environmental impact, thereby aiding the development of the city whilst generating long-term investment opportunities. It is currently in the 'client demand assessment' phase.	Uncertain	The return target of the fund is explicitly linked to inflation, meaning it therefore has the potential to provide a good strategic fit for meeting inflation linked liability payments. However the details of the fund are not yet sufficiently established to enable assessment of its suitability
UK Residential Property	This proposed fund is currently in the 'client demand assessment phase', so specific details of the fund are yet to be established	Uncertain	The Fund currently has no residential property exposure. We have proposed an allocation in some of our alternative portfolios, however the LCIV offering is not yet sufficiently established to enable assessment of its suitability
Private Debt	This proposed fund is currently in the 'client demand assessment phase', so specific details of the fund are yet to be established.	Uncertain	The Fund currently has no private debt exposure. We have proposed an allocation in some of our alternative portfolios, however the LCIV offering is not yet sufficiently established to enable assessment of its suitability

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Source: LCIV

Summary and Next Steps

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Summary

Summary

- The Fund has delivered strong investment returns in recent years during a period in which most asset markets have trended upwards. This performance led to a strong funding position, of 103%, being achieved at the March 2019 actuarial valuation.
- During Q1 2020 asset markets experienced a severe stress event due to the spread of COVID 19. As a result of this, we estimate the funding level had fallen back to c. 93% as at 31 March 2020.
- The implementation of the currently agreed investment strategy is not yet complete, with the commitments to private equity and infrastructure equity expected to be drawn over the coming months/years. We support the continued deployment of the intended commitments to these allocations.
- The Fund continues to take a material level of investment risk, the key drivers of which are equity risk, due to the large strategic allocation to equities, and inflation risk, due to the inflation-linked nature of the Fund's liabilities.
- We believe the Fund can better manage these risks, whilst maintaining broadly similar expected returns to the current strategy. Maintaining returns will be important so as not to increase strain on the funding basis and to maintain stable and affordable contributions.
- We have analysed several alternative strategies and new asset classes for consideration. The alternative strategies presented within this paper offer an evolution from the Fund's current investment strategy in order to reduce the level of risk, whilst keeping the expected returns broadly similar.
- These alternatives focus on:
  - Increasing exposure to inflation-linked assets
  - Reducing equity risk and focusing the equity portfolio on sustainable investments.
  - Allocating to private debt
  - Making better use of the Fund's key advantage as a long-term investor
  - The ESG impact of any proposed investment strategy change and how a platform can be built in the investment strategy for further positive change.
- The underlying composition of the equity mandate is considered in a separate report.
- The Council should consider the alternative investment strategies and recommendations outlined in this report in the regulatory context of pooling (the current and expected future investment options available on LCIV) and the ESG impact of any new allocations and the Fund's assets as a whole. These two aspects are considered in this report alongside the asset allocation proposals.
- We are conscious that, when making any investment strategy changes, the Council should also consider both the governance implications of the number of mandates/managers and the potential ongoing management costs.
- Finally, we note that, as shown earlier in this report, the current asset allocation has deviated significantly from the strategic target due to market movements and ongoing implementation of less liquid mandates.
- The current asset allocation position as well as any anticipated cash movements for funding previous commitments yet to be drawn down i.e. infrastructure and private equity should be accounted for when considering implementation of the target strategy.

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Next steps

Next Steps

- The Council should consider:
  - The implementation of the existing strategy and whether they are happy with the current committed amounts or whether a top-up to the allocations to infrastructure equity or private equity is desired.
  - Its view on the current investment strategy and whether there is an appetite to adopt any of the alternatives proposed.
  - Whilst secondary to the decision on the strategic asset allocation, the Council will also have to consider the Fund's investment manager line-up in the context of pooling, whether any streamlining of this might be desired, and the impact of any proposed investment strategy changes on this line-up.
- We look forward to discussing this report further.

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Appendices

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A1: Alternative portfolio considerations – transition costs

- There are explicit transition costs associated with the movement of any assets. The estimated transaction costs in normal market conditions for the relevant asset classes (as a % of assets moved) are provided in the table to the right.
- The Council should note that the actual transition fees charged may differ from those shown; especially when market conditions are volatility. We advise that the Council assesses the current cost of transitioning assets ahead of the implementation of any investment strategy changes.

Asset Class	Trading costs
Equity	Up to 0.3% exit
Diversified growth funds	Up to c.1.0% exit
Index-linked gilts	c.0.1% entry
Infrastructure equity	Up to c.1.0% entry
Private credit	None expected
Long lease property	c.5.0% entry

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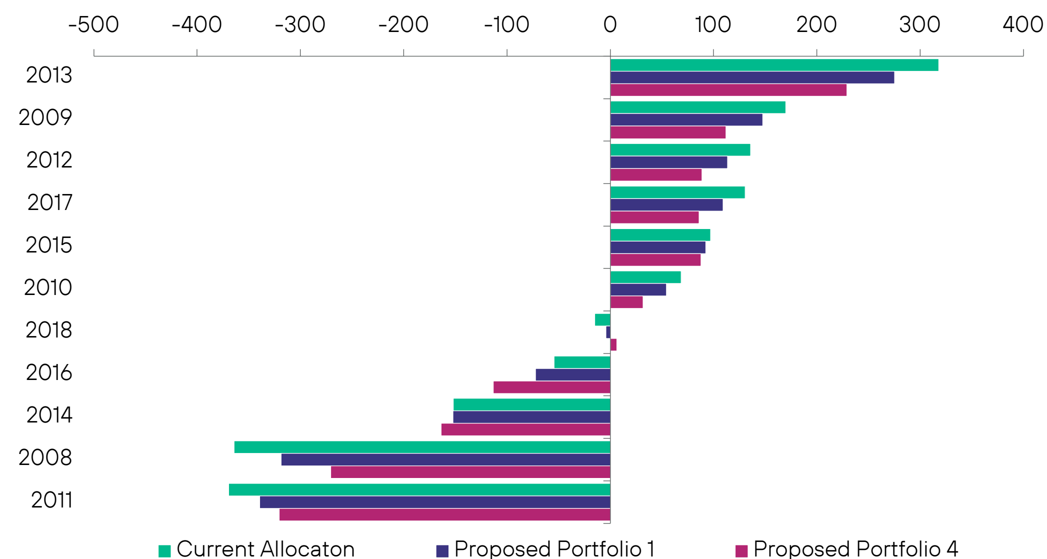
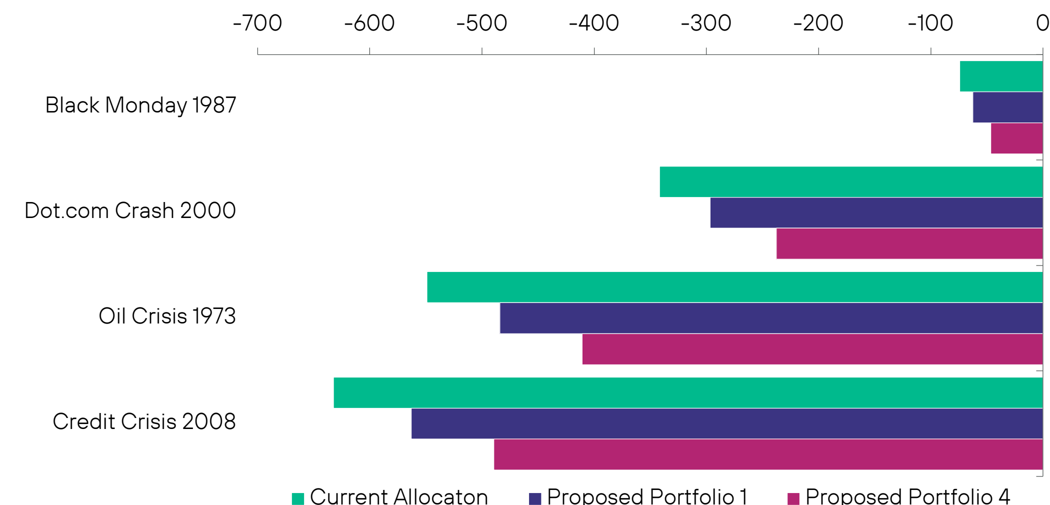
A2: Historic scenario testing

Historic Scenario Analysis – Estimated Deficit Impact (past 10 years)



- The chart above shows the impact on the funding position if we were to re-run each of the past 10 calendar years from today. It displays the impact based on three portfolios:
  - The Fund's current allocation
  - Proposed portfolio 1 from pg 24
  - Proposed portfolio 4 from pg 24
- The result show that, whilst the proposed portfolios do not outperform the current strategy in periods of strong market performance, they are better positioned to weather stressed markets or economic downturns.

Past Crises Scenario Analysis – Deficit Impact



- The chart above shows the illustrative impact on the funding position should past crises play out again in today's market conditions.
- It again considers the impact on three separate allocations.
- Though we note that these past crises events were extreme in nature, and arose as a result of specific shocks to investment markets, they do show the Fund's sensitivity to significant market events, should anything similar occur in the future.
- Again, the result show that the proposed portfolios would have fared better in historical crises events.

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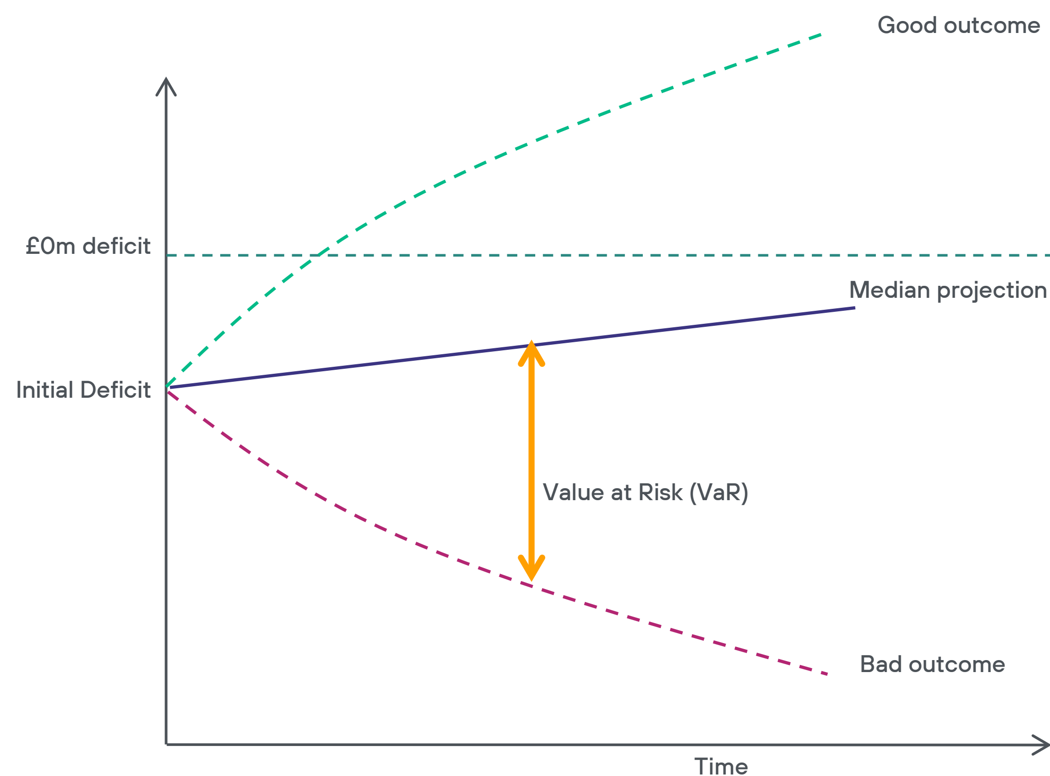
A3: Value at Risk – an explanation

Value at Risk ("VaR")

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



Note: the above chart is for illustrative purposes only.

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A4: Historical yield movement

Summary

These charts show yield movements at the 20-year tenor over the past year.

Gilt Yield Changes

20-year Real Gilt Yield

January	-0.19%
February	-0.06%
March	+0.13%
Quarter	-0.12%

20-year Nominal Gilt Yield

January	-0.31%
February	-0.09%
March	-0.08%
Quarter	-0.48%

20-year Gilt-Implied Inflation

January	-0.12%
February	-0.03%
March	-0.22%
Quarter	-0.37%

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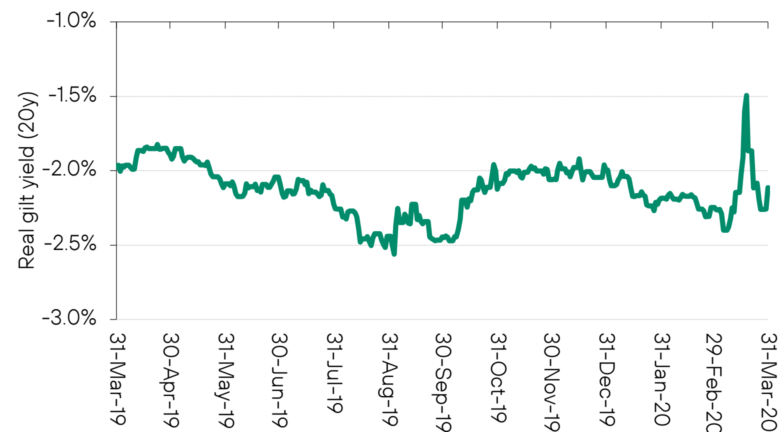
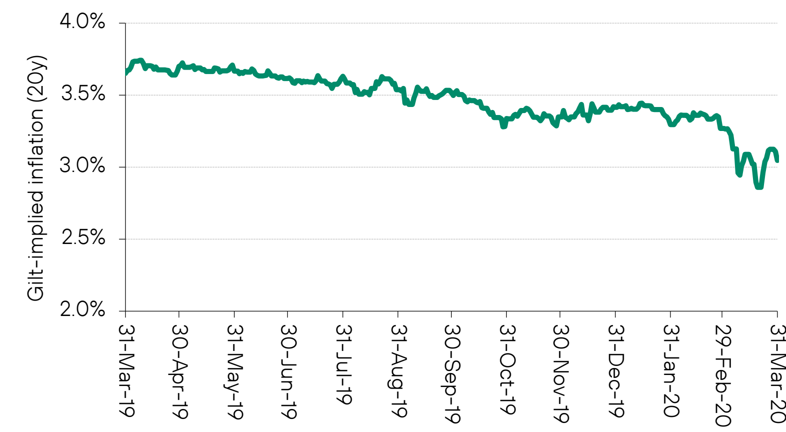
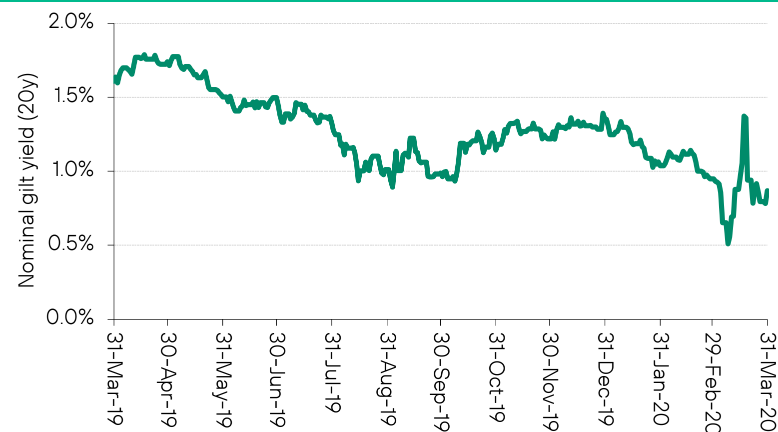
Real Gilt Yields – Last 12 months



Gilt-Implied Inflation – Last 12 months



Nominal Gilt Yields – Last 12 months



Commentary

- Nominal and real gilt yields have trended downwards over the past decade driven by central bank and government policies. This has caused fixed and index-linked gilt prices to rise above historical averages.
- Real yields have continued to fall over the past 12 months and have been particularly volatile 2020 YTD due to the impact of the Covid -19 pandemic on markets.
- We believe, given the current economic and market environment there are valid reasons why yields could remain low for some time or even move lower.
- In addition, there is currently an ongoing government consultation in relation to RPI inflation reform. The outcome of this consultation, which is expected in August 2020, could affect market pricing.
- These implementation factors should be considered if the Council decide to increase the strategic allocation to index-linked gilts.

Note: Please see the 'Explanation of Market Backgroun' appendix for details of the example liabilities. Monthly yield changes may not sum to quarterly changes, due to rounding.
Source: Bank of England, Isio Calculations

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A5: Impact of COVID 19 (1)

- Following the global outbreak of COVID 19, a large number of asset classes have suffered extreme volatility. Our research team has been closely monitoring markets and summarise the performance and outlook of the asset classes relevant to Camden as below.

Asset classes currently utilised within the portfolio	
Equity	Global equities experienced significant drawdowns over Q1. Investors flocked to 'safe haven' assets following the COVID-19-induced market uncertainty, causing equity market volatility to reach levels not experienced since the Global Financial Crisis. The resulting oil price war thrust greater uncertainty into equity markets. The combination of these two events caused indiscriminate selling across risk assets, with cyclical sectors (such as Energy, Hospitality and Financials) being hit the hardest.. Any outperformance achieved was primarily driven by the manager's style tilts towards high quality, growth stocks and an underweight to sectors with greater cyclicality.
Multi-Asset Credit	The general performance of Multi-Asset Credit manages was disappointing, as we would have expected more downside protection versus the indices they are compared to. That said, the sell off was broad, deep and fast, and so managers were unable to protect value as they otherwise would for a less severe downturn. Having a manager with the scope to deploy across asset classes is key from here, and we would expect these managers to recover from the mark-to-market losses, building robust portfolios that are relatively insulated from the risks that would otherwise be apparent in broad market exposure.
Balanced Property	Balanced property mandates have been hit by valuation write-downs over Q1 2020 and we expect headwinds to continue. Most funds have suspended dealing given the material valuation uncertainty clauses attached to valuations. We believe that Balanced property mandates will continue to face a number of headwinds, with COVID-19 only adding to concerns. We expect returns to be driven by income in the medium term, funds with low vacancy rates and sustainable rent levels will fare better.
Diversified Growth (DGF)	In Q1 DGFs were able to protect on the downside relative to broader global equity markets, though there were a range of outcomes dependant on manager style. Since quarter end, the majority of managers have participated in the upside as markets have begin to recover somewhat. Managers typically remain cautious regarding their equity allocations.

A5: Impact of COVID 19 (2)

Infrastructure Equity	Performance of infrastructure assets over the quarter has been varied. Contracted/regulated assets have shown stable cashflows and valuations, whereas more cyclical assets have been hit by the impact of the lockdown. We continue to believe that infrastructure equity can offer attractive, long term, inflation-linked returns.

Asset classes currently being considered for the portfolio

Long Lease Property	Performance in LLP has held up well when compared to other growth assets, and it has acted more defensively than balanced, as expected. Income has driven the majority of returns and capital values have remained broadly static over Q1. In the short term, we might see some valuation write downs in worst hit sectors, as the full impact of COVID-19 is realised. Transaction activity has fallen and we might expect clients buying into LLP to face slower drawdown timeframes than pre-crisis. Longer term, we still think that LLP offers good value, long term, inflation-linked income for clients. We might expect a short term impact on income and distribution yields.
Private Corporate Lending	The impact on portfolios is not likely to be seen in performance of most recommended managers for months but there should be an expectation that losses will pick up from previous vintages. A lot of companies have breached covenants due to the fall in revenue. The market for new deals is effectively shut currently and is expected to be shut for several months.
Commercial Real Estate Debt	Despite the challenging market conditions over Q1, the funds that we monitor in this space have been largely unimpacted in terms of IRRs so far, as loan defaults have not come through. In general, managers have taken the approach of focusing on protecting/monitoring existing investments rather than looking for new investments in the volatile environment. We believe the approach we have seen from managers have been sensible. Our main concern is the potential long-term impact on deployment of funds, which will depend on how long the crisis lasts.
Infrastructure Debt	Defaults are yet to feed through to portfolios with managers concerned in particular about transport related projects. Nonetheless, infrastructure deals typically have a substantial liquidity buffer built in to help mitigate forthcoming revenue impacts. Opportunities and deal flow are expected to pick up over the next year for two reasons; certain investors will be required to offload fallen angel assets at cheap prices while the market for more senior assets is also expected to pick up driven by more attractive pricing availability already.

A6: Return and volatility assumptions (1)

Introduction to the Assumptions

- These are our "best estimate" asset class return, volatility and correlation assumptions. We believe there is a 50:50 chance that the actual outcome will be above/below our assumptions.
- The assumptions are long-term, for a 10-year period, expressed in Sterling terms.
- Return assumptions are:
  - Annualised (i.e. geometric averages), rounded to the nearest 0.1%.
  - Expressed relative to the yield on fixed interest gilts (the annual yield at the 10-year tenor on the Bank of England spot curve). This yield was 0.4% at 31 March 2020.
  - Net of management fees.
  - Before tax. UK pension schemes are exempt from tax on investments. The impact of taxation may reduce returns for other investors.
- Volatility assumptions are based on the standard deviation of annual returns over a 10-year period, rounded to the nearest 0.5%.
- Bond volatilities are sensitive to the duration of the index. Our Fixed Interest Gilts (FIG) and Index-Linked Gilts (ILG) assumptions both relate to Over 15 Year indices, but the cashflow profile of the ILG index is considerably longer than the FIG index. Hence the difference in volatilities does not necessarily mean that real yields are assumed to be more volatile than fixed yields.
- Correlation assumptions are based on the correlation of annual returns over a 10-year period, rounded to the nearest 5%.

Limitations and Risk Warnings

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

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A6: Return and volatility assumptions (2)

Asset Class	Sector [1]	Return [2]	Volatility [3]
Equity	Developed Markets – Passive	4.0%	20.0%
	Developed Markets – Core Active	4.5%	20.5%
	Global Unconstrained	5.0%	21.0%
	Developed – SmallCap Passive	4.6%	24.0%
	Emerging Markets – Passive	5.0%	30.0%
Property	UK Balanced Property	2.3%	13.0%
	Long Lease Property	2.5%	8.0%
	Private Rented Sector	3.0%	13.0%
	Global Property Secondaries	6.0%	30.0%
Hedge Funds	Multi-Strategy Fund of Funds	2.5%	10.0%
	Global Macro	3.0%	13.0%
DGF	DGF (lower risk) [5]	2.8%	10.0%
	DGF (higher risk) [5]	3.5%	12.5%
Alternatives	Private Equity	6.5%	30.0%
	Diversified Alternatives	6.0%	22.0%
	Infrastructure Equity	4.6%	12.0%

Asset Class	Sector [1]	Return [2]	Volatility [3]
Credit [4]	Corp. Bonds (IG All-Stk) – Passive	1.5%	7.5%
	Corp. Bonds (IG All-Stk) – Active	1.8%	7.5%
	Corp. Bonds (IG >15y) – Passive	1.3%	9.5%
	Corp. Bonds (IG >15y) – Active	1.6%	9.5%
	Absolute Return Bonds	1.5%	4.0%
	CLO	2.5%	8.5%
	Direct Lending	4.2%	10.0%
	Distressed Debt	7.0%	16.0%
	Diversified Credit	3.0%	11.5%
	Infrastructure Debt – Senior	1.8%	6.0%
	Infrastructure Debt – Junior	3.2%	9.5%
	Multi-Asset Credit (lower risk)	2.8%	7.0%
	Real Estate Debt – Senior	1.8%	7.0%
	Real Estate Debt – Junior	5.0%	14.0%
	Semi-Liquid Credit	4.0%	9.0%
Gilts	Fixed Int. Gilts (>15y) – Passive	0.0%	6.0%
	Index-Linked Gilts (>15y) – Passive	0.0%	11.0%
Cash	Cash	0.0%	1.0%

Notes:
Please refer to full explanations and caveats on previous pages.
1 Includes active management except where specified as passive.
2 Expected return per annum, net of fees, relative to the yield on fixed-interest gilts.
3 Expected standard deviation of absolute annual returns.
4 Includes allowances for downgrades and defaults.
5 "Lower risk" and "higher risk" are relative descriptions within the asset category only, with no wider meaning.
Source: Isio

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A7: Modelling Methodology (1)

Data and Sources

- Information on characteristics of the Fund's liability profile, including the split between membership types, was taken from information provided by Hymans Robertson in relation to the 31 March 2019 actuarial valuation.

Modelling Principles

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

Modelling Results

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

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A7: Modelling Methodology (2)

Compliance Statement

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

Material Assumptions

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

Limitations and Risk Warnings

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

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A7: Modelling Methodology (3)

Liability Basis

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

Contribution Basis

- The model's projections may be based on either fixed or variable contributions:
- "Fixed contributions" means that the current schedule of deficit contributions is assumed to remain in place for the full projection period. The purpose of this is to illustrate pure investment risk, showing the effect of differing investment strategies without the distorting impact of different amounts of money being contributed. In practice, however, the long-term downside outcomes would be less likely to be reached, as poor intermediate outcomes would lead to a requirement for additional contributions after future valuations.
- "Variable contributions" means that the model simulates future actuarial valuations every three years, and calculates the future deficit contributions that might be required under the particular situations being projected. This illustrates the range of possible future contribution requirements.
- In addition to the deficit contributions, the model also calculates contributions required to fund future service accrual, if there are active members accruing additional pension entitlements. In this case a small amount of variability arises from the range of possible future inflation projections. Therefore the "fixed contribution" projections may still show minor differences in contributions between, for example, Median and Bad outcomes.

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