Lancashire County Pension Fund

Triennial Review Summary of Strategic Asset Allocation

Summary

- The Fund's 2022 Valuation funding level of 116% provides flexibility to move its Strategic Asset Allocation ('SAA') up or down the risk spectrum.
- The current economic environment is volatile; markets are facing higher inflation, interest rates and expected asset returns than at the previous Valuation, but outcomes appear considerably more uncertain.
- The Fund's Current SAA is on track to deliver on LCPF's Investment Objectives, balancing central expected outcomes for funding and contributions against risks of adverse scenarios.
- Our recommendation is to **modestly evolve the Current SAA to benefit from higher yields in Fixed Income** today compared with at the 2019 Valuation with a move largely away from the Fund's Real Assets exposure in Real Estate and Infrastructure (28.5% → 26%) into Fixed Income (1.5% → 5%). There is a slight reduction in Global Equities but equities (public and private) in general continue to form almost half of the asset allocation while there is a small reduction in Cash to reflect the operational efficiency required to maintain portfolio liquidity.
- These changes are expected to **maintain the strong funding position out to a 10-year horizon with reduced modelled severity of downside scenarios**. The **additional liquidity** in the Proposed SAA provides helpful optionality for the Fund.
- We believe the **Proposed SAA to be more robust than the Current SAA**, whilst still expecting to generate strong funding and contribution outcomes along with income generation in excess of its net benefit payments. In keeping with our desire to increase the robustness of the allocation, LPPI's **Proposed SAA generates more stable outcomes across the different long term economic scenarios** that we have modelled, tempering expected underperformance in downside scenarios and outperformance in "Overheat" upside scenarios (high growth and inflation).

Proposed SAA weights compared with the Current SAA

Asset Class	Current		Proposed SAA		
	SAA	Tolerance	SAA	Change	Tolerance
Global Equities	45.5%	40% - 53%*	**45%**	↓ 0.5%	40% - 52.5%
PE	5.0%	0% - 10%	**5%**		0% - 10%
Fixed Income	1.5%	0% - 10%	**5%**	↑ 3.5%	0% - 10%
Credit	18.0%	12.5% - 22.5%	**18%**		12.5% - 22.5%
Infrastructure	16.0%	10% - 20%	**15%**	↓ 1.0%	10% - 20%
Real Estate	12.5%	7.5% - 17.5%	**11%**	↓ 1.5%	6% - 16%
Diversifying Strat.	---	0% - 5%	---		0% - 5%
Cash	1.5%	0% - 5%	**1%**	↓ 0.5%	0% - 5%
Total	100%		100%		
Total Equity	50.5%		50%	↓ 0.5%	
Total Fixed Income + Credit	19.5%		23%	↑ 3.5%	
Total Real Assets	28.5%		26%	↓ 2.5%	
Cash	1.5%		1%	↓ 0.5%	

*Global Equities currently has a waiver for the upper tolerance range (from 50% to 53%)

Objectives and Risk Appetite

The below box summarises the Fund's Objectives, as derived from the Investment Objectives detailed in the Fund's Investment Strategy Statement. Alongside we summarise the key metrics from a proposed update to the Fund's Risk Appetite Statement ("RAS"). These metrics help to frame LCPF's priorities when setting its SAA and managing the trade-offs between funding and contribution risks, returns and liquidity risk.

Objective	Risk Appetite Statement	Tolerance
1 Funding Level Maintain a future funding level at or above 100%	The Fund shall seek to maintain an expected Triennial valuation basis funding level at or above 100% and will seek to take action to prevent it falling below 80%.	100% ≤ Funding Level 80% ≤ Funding Level <100% Funding Level < 80%
2 Contributions Enable employer contribution rates to be kept as stable as possible	LCPF shall seek to limit expected Total Contributions in three years' time (assessed on the triennial valuation basis at whole Fund level) to between 10% and 30% of pensionable salary p.a. while aiming for a total expected contribution rate in the range of 21.0% to 25.6% of pensionable salary p.a.	21.0% ≤ Total Contributions ≤ 25.6% Total Contributions < 21.0% 25.6% < Total Contributions ≤ 30% 30% < Total Contributions
3 Liquidity Optimise the returns from investments whilst keeping risk within acceptable levels and ensuring liquidity requirements are met at all times	A sufficient buffer of cash and cash equivalent instruments will be maintained to meet between 5 and 12 months of peak net liability outflows and no less than 3 months of peak net liability outflows	5 months ≤ Cash ≤ 12 months outflows 3 months ≤ Cash < 5 months 12 months ≤ Cash Cash < 3 months outflows
4 Asset Allocation Optimise the returns from investments whilst keeping risk within acceptable levels and ensuring liquidity requirements are met at all times	The Fund shall aim to maintain investments within +/- 70% of agreed strategic asset allocation while observing agreed maximum and minimum levels at all times	Within 70% of the difference between max/min and the SAA benchmark Between 70% and 100% of difference between max/min and the SAA benchmark Outside the upper or lower SAA tolerance range

In this document we include and analyse modelled outputs for Objectives 1 & 2, which relate to funding and contribution risks that are directly impacted by the Fund's SAA. Objectives 3 & 4 (liquidity and asset allocation measures) relate to the implementation of the asset allocation once the SAA is set, and other than to the extent that the Fund's liquidity objective necessitates LCPF to hold some Cash, these two Objectives are not directly strategic.

SAA Proposal

- The Fund's Current SAA is well suited for its Investment Objectives. The **Proposed SAA evolves rather than overhauls the Current SAA**.
- Higher expected returns from Fixed Income combined with surplus funding mean we look to modestly increase the Fixed Income weight from 1.5% to 5%. This is largely funded by a reduction to Real Estate and Infrastructure, where we still recommend material allocations of 11% and 15%, respectively.
- Proposed changes see central modelled funding and contribution outcomes maintained, but with a **more stable expected distribution and less modelled risk**, particularly in stagflationary or deflationary scenarios. This is offset by a tempering of expected performance in overheat scenarios.
- The increase in Fixed Income results in **greater portfolio liquidity** (despite the small respective reductions to Global Equities and Cash), which we believe to be a sensible course given wider macroeconomic uncertainty and market volatility observed today.
- We estimate that **portfolio income is sufficient to match or exceed the Fund's net liability outflow** in the majority of scenarios.
- Our assessment of the **Proposed SAA's tolerance ranges confirms that they are appropriate for the implementation of LCPF's SAA**, and do not allow for excessive scope to increase risk to funding or contributions.

The table below provides LPPI's rationale for each asset class's proposed target allocation alongside updated tolerance range. We consider aspects such as the expected return, risk, diversification properties, liquidity profile and ability to generate cash flow when determining each allocation.

Global Equities	**45% proposed** (down from 45.5% currently) Asset Allocation maintained within a range of 40% to 52.5% (currently 40% - 50%, with waiver to 53%) Equities are expected to provide strong returns, while also provide liquidity to support either cashflow shocks or investment opportunities that may arise in other asset classes. The proposed allocation size balances the benefits of higher growth and liquidity against the Fund's tolerance for risk to the triennial funding level and contributions.
Private Equity	**5% proposed** (no change from current) Asset Allocation maintained within a range of 0% to 10% (currently 0% - 10%) Private Equity provides opportunities for enhanced returns versus public equities, but at the cost of illiquidity and higher risk into an uncertain macroeconomic environment. We propose to retain the 5% target and existing tolerance range.

Fixed Income	**5% proposed** (up from 1.5% currently) Asset Allocation maintained within a range of 0% to 10% (unchanged) With the return outlook for government and corporate bonds improving over the last year, Fixed Income is now able to provide a degree of diversification away from equities in addition to a higher cash yield. We propose an increase to the target allocation to reflect the broader appeal of this still relatively low returning asset class. The tolerance band has been retained at 0-10%, providing a symmetrical range around the target allocation.
Credit	**18% proposed** (no change from current) Asset Allocation maintained within a range of 12.5% to 22.5% (unchanged) The recommendation to maintain a significant allocation to Credit is justified by our relatively favourable view on the asset class's return potential, combined with its diversification and income generation.
Infrastructure	**15% proposed** (down from 16% currently) Asset Allocation maintained within a range of 10% to 20% (unchanged) Stable income and moderate growth potential alongside a relatively high degree of expected inflation participation contribute to Infrastructure's appeal. However, in order to fund the increase to Fixed Income, we propose to slightly decrease the target Infrastructure allocation to 15%.
Real Estate	**11% proposed** (down from 12.5% currently) Asset Allocation maintained within a range of 6% to 16% (currently 7.5%-17.5%) Real Estate is expected to provide relatively stable portfolio income and returns, justifying its large, proposed allocation. However, the return environment is facing greater headwinds and when combined with the asset class's illiquidity we believe it makes sense to direct a small proportion of the Fund's allocation to Fixed Income.
Diversifying Strategies	**0% proposed** (no change from current) Asset Allocation maintained within a range of 0% to 5% (unchanged) LPPI views Diversifying Strategies as a valuable portfolio lever, providing expected returns that align with the Fund's Investment Objectives whilst also providing diversification and, historically, a significant degree of inflation participation. Our modelling shows that an allocation to Diversifying Strategies modestly improves the funding position relative to funding and contribution risks. Our central proposal has been mandated to include a 0% target weight.
Cash	**1% proposed** (down from 1.5% currently) Asset Allocation maintained within a range of 0% to 5% (unchanged) The Cash target is reduced from 1.5% to 1.0%. The change to Cash comes in light of our view on operational Cash requirements combined with LCPF's Risk Appetite Statement. The Fund's Current SAA Cash target is equivalent to over 9 months outflow (almost double the amber minimum Cash level). As we do not believe this degree of Cash is required for LPPI's day-to-day management of the Fund's operations, we recommend reducing the Cash target to a value that equates to slightly more than 6 months' outflow.

Modelled Impact of Recommended Changes to SAA

The Current SAA remains well suited to deliver on the Fund's Investment Objectives from LCPF's starting point of a strong 2022 Valuation funding position. The Fund is expected to grow its asset base whilst paying benefits and maintaining net contribution rates within implied Risk Appetite Statement targets.

This section hopes to provide the Committee with comfort that the **Proposed SAA continues to deliver on the Fund's Investment Objectives** and **provides an improvement on the balance between risk and return relative to the Current SAA**. The Proposed SAA delivers a minor reduction in expected return to just below 6.6% p.a. over the next decade (this effect is masked when figures are rounded to 1 decimal place, such as in the table below), while the **projected median funding level remains broadly unchanged** (126.2% → 125.8%). This is balanced by a **lower likelihood of adverse funding scenarios**, particularly in the extreme downsides of possible funding (scenarios where funding is below 80% and 70%) and contribution (scenarios where contributions are above 30%) outcomes.

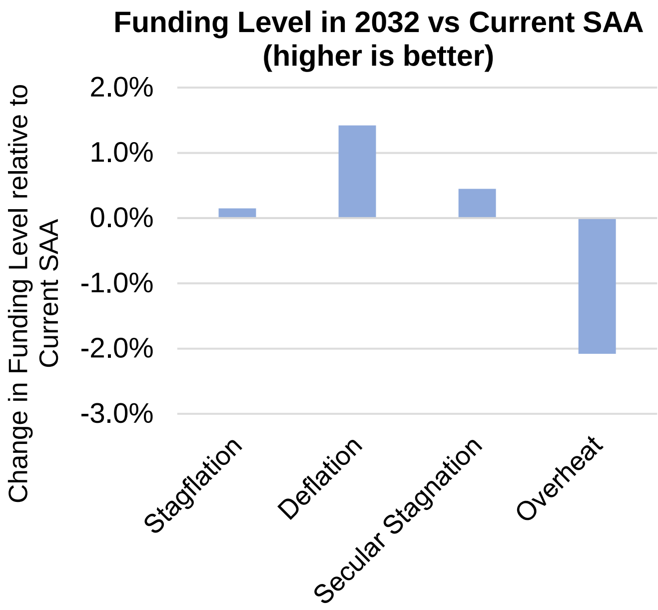
Metrics derived from Risk Appetite Statement	*Current SAA*	*Proposed SAA*
Funding Level (Triennial, '32) %, capped		
Median Funding Level (Triennial)	126.2%	125.8%
% scenarios where funding level < 100%	22.3%	22.2%
% scenarios where funding level < 80%	7.3%	7.0%
% scenarios where funding level < 70%	3.3%	3.0%
Standard deviation of funding level	42.6%	41.3%
Contributions (uncapped, '22-'32) % of pensionable base		
Triennial Valuation date ('22)		
Mean Contributions (p.a.)	20.6%	20.5%
% scenarios contributions > 30%	14.1%	13.9%
Asset Class Returns (10y)		
Total Fund returns (mean, annualised)	6.6%	6.6%
Standard deviation of Total Fund returns	7.7%	7.7%

Source: LPPI Investment Strategy, Ortec, Mercer, Northern Trust

Mean contribution rates are also lower for the Proposed SAA compared with the Current SAA (20.6% p.a. → 20.5%) and **crucially more stable**. We acknowledge that the differences in modelled results are small, and that the Proposed SAA ultimately represents an evolution of the Current SAA amid the higher yield environment today combined with the relatively strong funding position of the Fund.

Scenario Analysis

In addition to analysing modelled central and downside outcomes, we have also looked at four distinct stress scenarios over the next ten years. Stagflation, Deflation and Secular Stagnation reflect potential downside scenarios where economic growth and inflation are either at low or extreme levels. We have balanced these downside scenarios with an Overheat environment whereby growth and inflation are both at high levels, which would favour growth-oriented assets.



Source: LPPI Investment Strategy, Ortec, Mercer, Northern Trust

Compared to the Current SAA, **average funding levels improve with the Proposed SAA portfolio in all downside scenarios**. Although sacrificing additional gains in the upside Overheat case, the Fund would still be estimated to reach a funding position of approximately 140% at 2032 while benefiting from a smaller reduction in funding in the downside scenarios, and improved expected funding and contribution tail performance in aggregate.

Portfolio Income

We have also assessed the Fund's cashflow resiliency under the Proposed SAA. On an annual basis **portfolio income is sufficient to match or exceed the Fund's net liability outflow** (contributions less benefit payments) in the majority of scenarios.

At the 3-year horizon, c.88% of modelled scenarios see annual portfolio income matching or exceeding the net liability outflow. The pre-payment (paid in April 2023) was estimated to reduce regular contributions through the rest of the forecast period, leading to decreases in both median excess income and consequently the probability of income falling short of pension outflows. At the 5-year horizon, cashflow coverage rises to 100% as the 5-year forward projections are not directly impacted by pre-payment factors.

Modelled future harvestable portfolio income, net liability outflow and income-liability coverage

	3 Years Forward ('24-'25) In this period, contributions are reduced as a result of 2023 pre-payments; net liability outflows are thus increased, and harvestable portfolio income is expected to only modestly exceed pensions benefit payments net of contributions			
	Portfolio Income	Net Liability Payment	**Net Income in Excess of Liability**	Income Liability Coverage
75th %ile	+ 2.6%	- 2.0%	**+ 1.1%**	174%
Median	+ 2.4%	- 1.7%	**+ 0.9%**	154%
25th %ile	+ 2.3%	- 1.5%	**+ 0.7%**	135%

Source: LPPI Investment Strategy, Ortec, Mercer, Northern Trust

	5 Years Forward ('26-'27) This period does not include an assumption about pre-payments after the publication of 2025 valuation results. Accordingly the 5 years forward projection is smoother than the 3 years forward projection, and we currently expect a more significant margin of excess harvestable income			
	Portfolio Income	Net Liability Payment	**Net Income in Excess of Liability**	Income Liability Coverage
75th %ile	+ 2.6%	- 1.2%	**+ 2.2%**	658%
Median	+ 2.4%	- 0.7%	**+ 1.8%**	354%
25th %ile	+ 2.2%	- 0.4%	**+ 1.4%**	217%

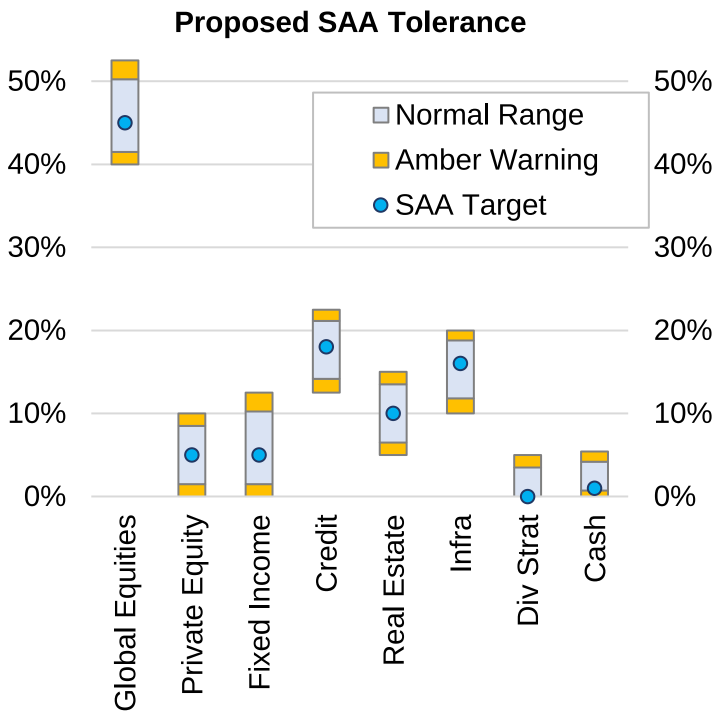
Source: LPPI Investment Strategy, Ortec, Mercer, Northern Trust

Asset Class Tolerance Bands

The SAA includes tolerance bands within which LPPI is mandated to try to maintain asset class exposures. The asset class tolerance bands serve two functions. They provide a small amount of room for LPPI to undertake tactical allocation decisions, but the primary purpose relates to portfolio implementation of the SAA.

LCPF's Risk Appetite Statement and quarterly risk reporting include amber warning levels if any asset classes move outside 70% of the distance from their SAA target to their SAA tolerance (see chart).

As part of the SAA Review process, we have looked to stress the permissible portfolios to see the worst outcomes that could result from asset allocation within the tolerance bands with the aim of providing comfort that funding and contribution risks remain well managed within the approved range of asset class weights.



The analysis undertaken suggests that **the tolerance bands do not allow for excessive risk taking nor allow for material risk of under-investment in context of the Fund's Risk Appetite Statement**. Therefore, we consider the tolerance bands for the Proposed SAA as appropriate.

Annex: Modelling Assumptions

Numbers presented herein are based upon September 2022 valuations and Ortec's Q3 2022 economy calibrated to represent LPPI's in-house macroeconomic views and capital market assumptions and utilise the updated 2022 valuation basis.

It should be noted that quarterly risk framework reports prepared for the Fund use Ortec Finance's standard quarterly economic calibrations that are not adjusted to reflect LPPI's in-house macroeconomic views and capital market assumptions.

Liability valuations use 2022 Triennial valuation assumptions, updated for market conditions and **without any change in the assumed real investment return for future service over and above CPI.**

Funding level liability projections calculated using 2022 Triennial valuation cashflows and methodology.

Simulations are performed assuming total contributions are capped at 30% p.a. and floored at 10% p.a., as well as assuming they are uncapped.

Should a deficit arise or a surplus greater than the funding buffer of 110%, simulations assume a 16 year recovery period to achieve full funding (assumed to be 100% if in deficit and 110% if in surplus) at whole fund level via positive or negative employer secondary contributions (respectively).

Contributions are assessed at whole Fund level using 2022 liability cashflows and the Triennial valuation basis (updated for market conditions but no change in assumed real investment return over CPI + 1.90%).

Projections allow for agreed prepayment contributions at the date of reporting, the Fund to return surplus above 110% to employers via a reduction in primary contributions over a 16 year recovery period and a 10% floor on total contributions.

Funding level buffer remains static at 110% as per the 2022 valuation approach, therefore Total contributions may be overstated where projected funding levels are between 100% and 110%.

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