February 2019

An efficient approach to LDI

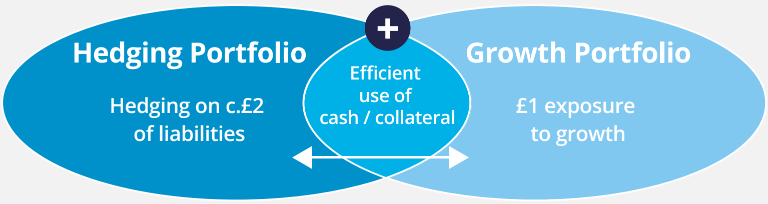
Liability hedging without sacrificing return potential

Aberdeen Standard Investments

Integrated Liability Plus Solutions (ILPS)

ILPS – a cash-efficient integrated approach

Every £1 invested in an ILPS fund provides both:



Each £1 in an ILPS fund has two objectives:

- Hedging Portfolio
  To provide c.£2 hedging against changes in the value of liabilities arising from movements in interest rates and (in the Real Funds) inflation expectations.
- Growth Portfolio
  At the same time, to seek a return in excess of cash on the £1 invested in the fund.

Growth Portfolios

Clients can choose from a range of ILPS Growth Portfolios, depending on their risk and return preferences. Every £1 invested in an ILPS fund works to provide £1 of growth asset exposure.

- Liability Aware Absolute Return III Fund (LA AR III) **– based on our multi-asset return strategies targeting cash* +5% per annum over rolling three-year periods, with expected volatility of 4% - 8% per annum under normal market circumstances.**
- Liability Aware Absolute Return II Fund (LA AR II) **– based on our absolute return bond strategies. Targeting cash** +3% per annum over rolling three-year periods, with expected volatility of 2% - 4% per annum under normal market circumstances.**
- Liability Aware Equity Fund (LA Equity) **– a new addition to our ILPS fund range, targeting returns in line with passive Global Equity markets (MSCI ACWI total return index).**

* cash is defined as 6-month LIBOR ** cash is defined as 3-month LIBOR
Target returns not guaranteed to be achieved

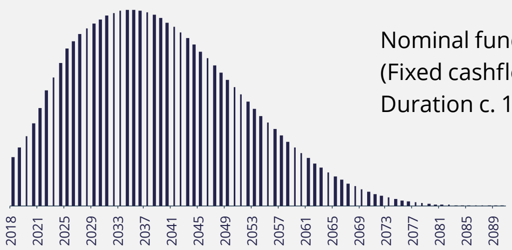
Key features

- **We developed our ILPS funds to help our defined benefit pension clients control both asset and liability risks while maintaining their return targets.**
- **ILPS is a unique, innovative approach to liability management that integrates a cash-efficient return engine with leveraged liability hedging within a suite of single pooled funds.**
- **Since 2005, we have successfully used a similar approach to restore our own Standard Life Staff Pension Scheme to a sustainable surplus.**

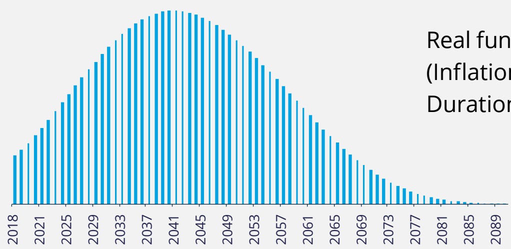
Hedging Portfolios

The ILPS Hedging Portfolios cover circa £2 of liability value for each £1 invested, providing capital efficiency. Clients can choose either nominal (fixed) or real (inflation-linked) interest rate hedging, based on two average pension scheme liability cashflow profiles.

Two cashflow profiles to build a liability hedge



Nominal fund
(Fixed cashflows)
Duration c. 19 years



Real fund
(Inflation-linked)
Duration c. 22 years

Source: Standard Life Investments, as at January 2019

The benefits of ILPS to clients

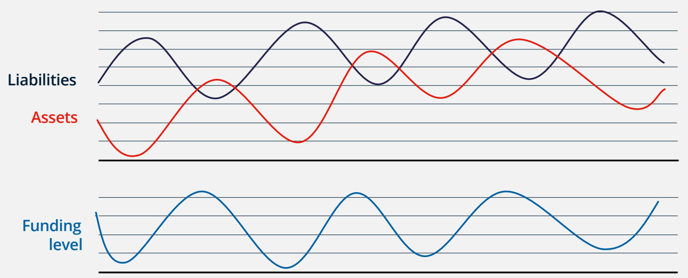
The function of the Hedging Portfolio within each ILPS fund is to help ensure the pension scheme's assets move in line with changes in the value of its liabilities, thus smoothing the path of the scheme's funding level (i.e. the ratio of its assets to liabilities).

The Growth Portfolio targets positive annualised returns over the long term.

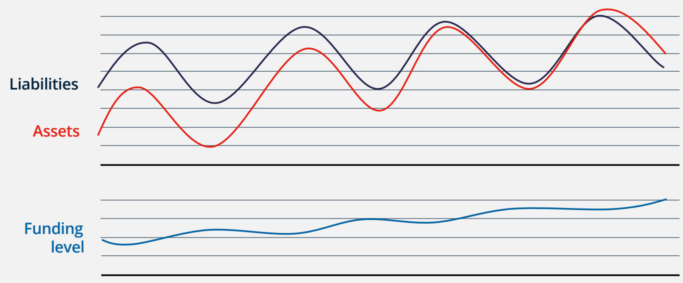
- **The integration of the Hedging Portfolio and Growth Portfolio means that each ILPS fund can target positive returns in excess of the scheme's liabilities. This should improve the scheme's funding level over time.**
- **Unlike using other liability hedging (or 'LDI') solutions available in the market, allocating some of a scheme's assets to ILPS need not entail a sacrifice of expected returns on those assets.**
- **We are able to achieve this unique structure through the efficient use of underlying cash collateral to support both the growth and hedging exposures within each fund.**

ILPS makes extensive use of derivatives to help meet performance objectives and for the purposes of efficient portfolio management. In some circumstances where the value of the liabilities and therefore the value of the assets falls substantially, we may ask for more capital to maintain the risk-tolerance levels of an ILPS fund.

The traditional investment approach: assets do not match liabilities



A liability aware investment approach: assets and liabilities move together



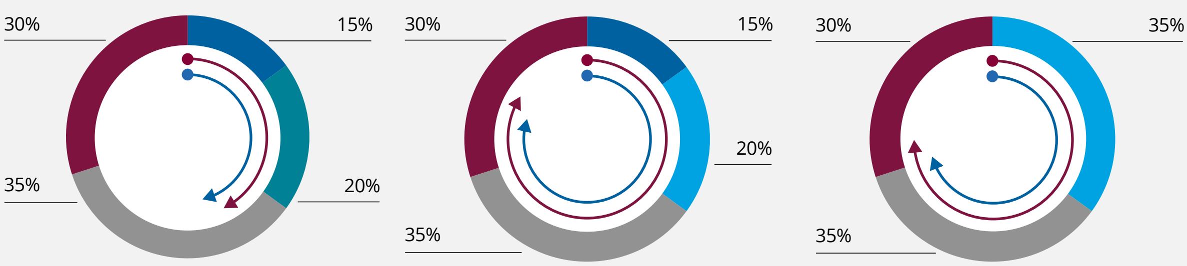
How ILPS may be used by clients

Our experience to date shows that clients are using ILPS funds as a flexible building block in a wide variety of ways, for example to:

- **retain liability hedging** while simultaneously **increasing growth potential**
- **replace growth assets in order to retain a similar level of expected return but with significantly reduced liability risks.** For example, LA Equity may be used to retain existing equity exposure, while LA AR III can be used to replace a diversified growth fund (see case study on following page), while increasing hedging in both of these cases.
- **replace or complement existing bond or LDI mandates.** For example, LA AR II might be used as a replacement for a traditional (index) gilt/bond portfolio to target a more precise liability hedge, while also increasing expected returns
- to **increase efficiency** within the 'matching' portfolio – ILPS provides circa £2 liability hedging for each £1 of investment, releasing funds to invest in other assets.

We illustrate some of these examples below, to show the **improved liability hedging** (illustrated by the size of the circling arrows) and higher expected returns.

1. Original portfolio | **2. Replace bonds with ILPS** | **3. Replace current LDI and bonds with ILPS**



Expected return	Cash + 3.4% p.a.
Interest rate hedging	48%
Inflation hedging	41%

Expected return	Cash + 3.9% p.a.
Interest rate hedging	79%
Inflation hedging	83%

Expected return	Cash + 4.3% p.a.
Interest rate hedging	70%
Inflation hedging	74%

External LDI · Bonds (Mixed) · ILPS (LA AR II) · Equities · Diversified Growth Funds
Interest rate hedging · Inflation hedging

Source: Standard Life Investments. Expected return figures are purely illustrative and not guaranteed. They are shown gross of fees. For full details of assumptions, please contact us.

Case study

Our client had over £500 million in scheme assets, with a substantial funding deficit. They had an existing LDI allocation in place. However, they wanted to increase their level of liability hedging, without sacrificing the growth asset exposure required to support their funding basis.

We worked with the scheme's trustees and investment consultant to explore alternative de-risking solutions. As a result, the client decided to switch some of their absolute return/diversified growth funds (DGFs) and external LDI mandate into the LA AR III Profile Funds, as shown in the charts below. This substantially increased the level of liability hedging (illustrated by the size of the circling arrows) while also increasing the scheme's growth potential.

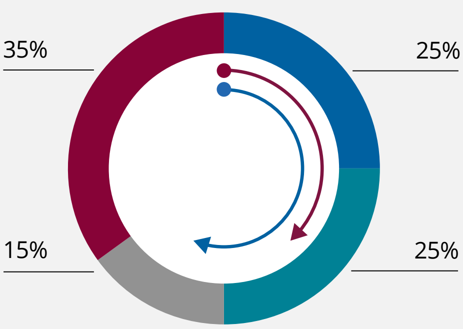
Balance sheet impact of a 0.5% p.a. fall in interest rates

	Before changes	After changes
Change in asset value	+£27m	+£43m
Change in liability value	£60m	£60m
Change in funding position	-£33m	-£17m
Change in funding level	**-2%**	**0%**

Source: Standard Life Investments. Expected return figures are purely illustrative and not guaranteed. They are shown gross of fees. For full details of assumptions, please contact us.

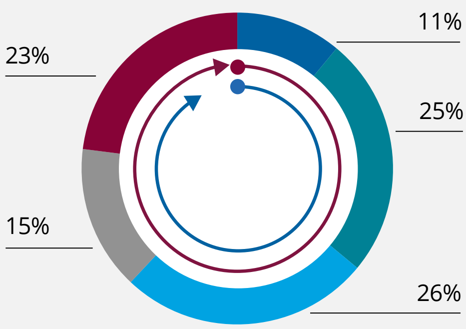
The existing LDI funds and ILPS both provide hedging against changes in the value of liabilities arising from movements in interest rates and inflation expectations. However, the charts and table show that, by using ILPS, the client was able to increase the expected return on the scheme's assets by around 0.7% p.a. (potentially worth over £3m a year). Crucially, ILPS was also able to reduce the impact of a 0.5% fall in interest rates by roughly £16m.

1. Before changes



Expected return	Cash + 3.1% p.a.
Interest rate hedging	58%
Inflation hedging	33%

2. After changes



Expected return	Cash + 3.8% p.a.
Interest rate hedging	94%
Inflation hedging	100%

External LDI, Multi-asset credit, ILPS (LA AR III), Equities, Absolute Return/DGFs
Interest rate hedging, Inflation hedging

Source: Standard Life Investments. Expected return figures are purely illustrative and not guaranteed. Returns are shown gross of fees, had such fees been deducted, returns would be lower. For full details of assumptions, please contact us.

ILPS history and current status

We launched our first range of ILPS funds (the LA AR III Nominal and Real Profile Funds) to external investors in the second quarter of 2016 and received the first external investments in May 2016. A couple of years later, we are delighted that we have had subscriptions of over £650 million into the ILPS funds across more than 50 clients. Additionally, the ILPS proposition has been widely supported by a large number of consultants.

Why Aberdeen Standard Investments for liability aware solutions?

Scale matters

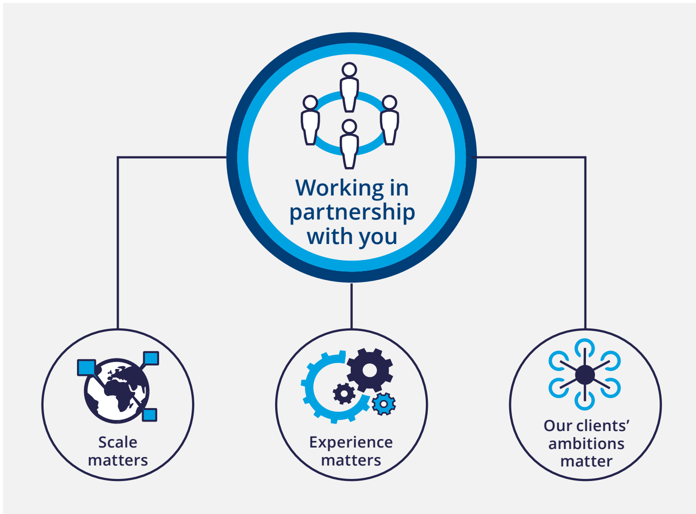
- **Benefits of scale without the drawback** – As one of the largest investment houses globally, we can take advantage of all of the benefits of scale. However, our optimum size enables us to remain nimble with our LDI portfolios and therefore ensure that our clients still benefit from the profitable opportunities that markets present.
- **Breadth of capability and depth of support** – Our liability aware capability, delivered by our LDI teams, is supported by a broad range of asset class expertise and a deep support network, including derivative specialism, client service and oversight.

Experience matters

- **Highly diverse and experienced LDI team** – Our LDI team, which includes portfolio managers and investment specialists, is extremely experienced. With insights and perspectives gleaned from roles at other asset managers, investment banks and consultancies, and a mix of professional qualifications, the team has the complete skill set in terms of LDI de-risking expertise.
- **Liability Aware solutions are embedded in our DNA** – We have a long history of adding value and delivering innovative solutions for our clients. Managing liability aware solutions is a fundamental part of our heritage as a business.

Your ambitions matter

- **Working in partnership with our clients as their requirements evolve** – We understand that every client's requirements are different and that these requirements will change over time as their hedging strategy evolves and their funding level improves. We use our skills and expertise to help our clients achieve their ambitions.
- **Uniquely placed to help our clients reach their end game** – Very few, if any, asset managers have the depth of capability that we have in LDI and Fixed Income (including liquids and illiquids) and can combine that with an insurance heritage. This leaves us perfectly placed to help clients not only with their existing LDI requirements but also guide them to their "end game" be that self-sufficiency or buy out ready solutions.



Mark Foster FFA
Email: mark.foster@
aberdeenstandard.com
Telephone: 0131 245 8199

Douglas Hogg FIA
Email: douglas.hogg@
aberdeenstandard.com
Telephone: 0131 245 2508

Keith McInally FFA
Email: keith.mcinally@
aberdeen-asset.com
Telephone: 0131 345 3600

Timea Varga
Email: timea.varga@
aberdeenstandard.com
Telephone: 0131 245 2963

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