

# DEFINED BENEFIT PENSION SCHEME DE-RISKING

MADE SIMPLE GUIDE





#### ACKNOWLEDGEMENTS

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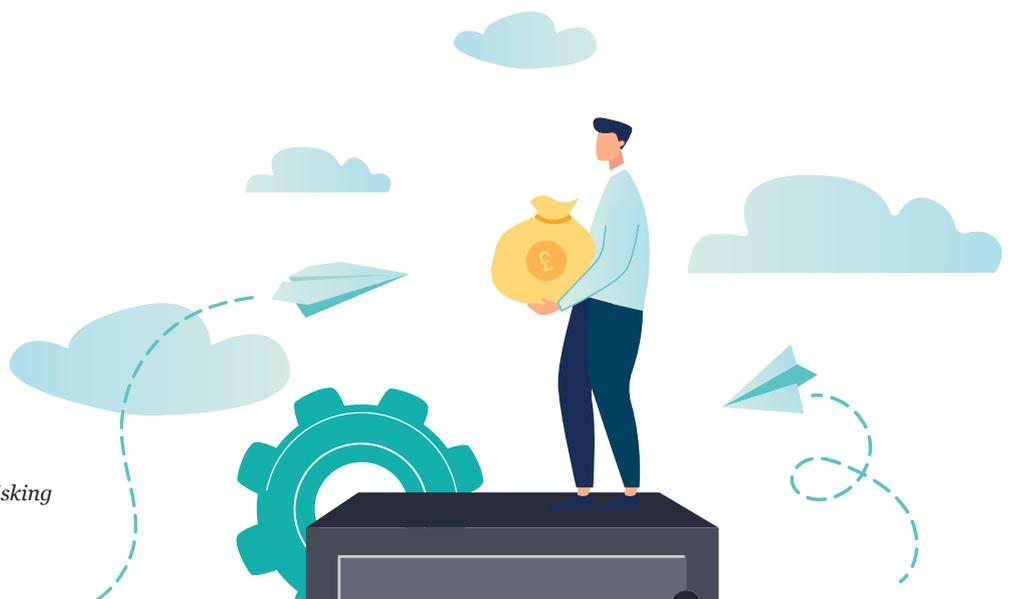
# 1 FOREWORD

**PENSION SCHEMES ARE RUNNING OUT OF TIME. THE TARGET DESTINATION IS GETTING CLOSER AS SCHEMES ARE MATURING, INCREASING FUNDING LEVELS ARE ENABLING SCHEMES TO CONSIDER MORE SOPHISTICATED OPTIONS TO FULLY SECURE ALL THEIR LIABILITIES AND CASHFLOW NEGATIVITY IS A NEW CHALLENGE THAT SCHEMES FACE. THESE CHANGES ARE LEADING MANY SCHEMES TO RECONSIDER THEIR APPROACH TO INVESTMENT AND RISK.**

This guide is designed to provide an overview of the de-risking strategies pension schemes are adopting to increase the certainty of achieving their objectives in a targeted and structured way.

Pension scheme de-risking is a complex topic and how any scheme decides to proceed will depend on a wide range of factors, with no one solution suitable for all.

We hope this guide touches helpfully on a range of strategies and topics which may be relevant to you.



## 2

# DEFINING DE-RISKING

## DEFINED BENEFIT PENSION SCHEME DE-RISKING REFERS TO THE ADOPTION OF INVESTMENT STRATEGIES TO INCREASE THE LIKELIHOOD OF A PENSION SCHEME PAYING PENSION BENEFITS IN FULL AND ON TIME.

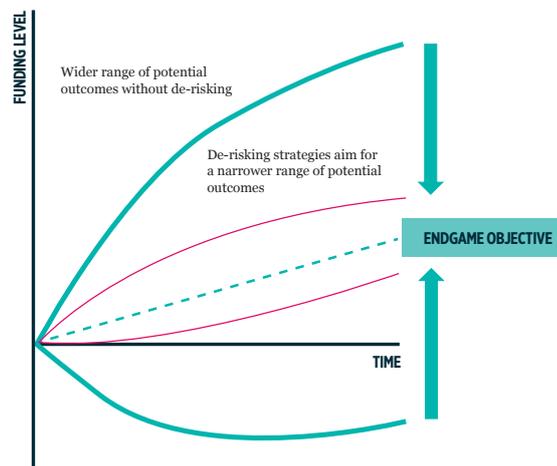
Historically, many schemes did not worry about de-risking. They had healthy funding levels, strong sponsors and the majority of pensions to be paid were far into the future. Exactly how they would fulfil their pension promise in practice was not an immediate concern.

However, following significant funding level volatility, sponsor insolvencies and a range of other factors including new regulatory developments, there is a sharper focus on risk and the strength of the sponsor covenant. Also, as schemes have closed to new members and matured – leading to a higher proportion of pensions in payment – there is less time for them to make up for any shortfalls. This means the desire to increase the certainty of being able to pay pension benefits has grown.

Against this backdrop, pension schemes are increasingly identifying their ‘endgame’ and adopting a range of de-risking options to help them achieve that goal.

The most common analogy for the choices facing pension schemes is that of a flight plan. Having identified the destination, pension schemes can choose between different paths to their destination. Strategies that narrow the range of potential future outcomes increases the chance of being able to achieve the chosen endgame (see Figure 1). This is the broad objective of most pension schemes’ de-risking strategies.

**FIGURE 1: PENSION SCHEMES ARE SEEKING TO INCREASE THE CERTAINTY OF ACHIEVING THEIR ENDGAME**



### TERMS EXPLAINED

- **Funding level:** A measure of a pension scheme’s ability to afford all its future obligations. It is calculated by comparing a scheme’s assets with its liabilities. This will incorporate assumptions on how the assets and liabilities will grow in future and can use different sets of assumptions for different purposes.
- **Sponsor covenant:** The legal obligation and financial ability of a pension scheme’s sponsor to support the pension scheme.

## 3

# WHAT IS YOUR DESTINATION? ENDGAME OPTIONS

**FOR MANY PENSION SCHEMES TODAY, THE NEXT STEP BEFORE ANY DE-RISKING DECISION IS TO IDENTIFY THE POINT AT WHICH YOU CAN BE CONFIDENT OF SECURING ALL THE MEMBERS' BENEFITS.**

The two most common endgame options are:

- ▶ **Insurance buy-out:** The pension scheme transfers all assets and liabilities to an insurance company which takes on legal responsibility for fulfilling obligations to scheme members. The corporate sponsor divests all responsibility for the scheme, and scheme members become policyholders with the insurer.

This is widely deemed the most reliable way to secure payments for all members' benefits, assuming the insurer remains solvent. However, insurers need to comply with stringent regulatory restrictions on investments and will also be seeking to generate a profit for their owners. This means buy-outs are typically relatively expensive. In other words, the pension scheme's assets have to cover its projected liabilities by a significant margin.

A buy-out differs from an **insurance buy-in**, under which a scheme transfers some of its assets to an insurance company. In return, the insurer is committed to paying future cashflows that reflect a portion of the pension payments for the scheme membership. The insurance company makes payments to the scheme, which in turn makes payments to the pensioners. The buy-in is effectively an asset of the scheme.

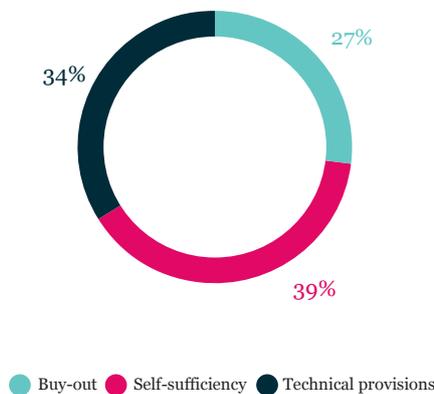
- ▶ **Run-off:** The pension scheme pays off liabilities as they fall due over time. To achieve this, a pension scheme will typically aim to be 'self-sufficient', meaning it will seek to establish an investment portfolio that gives the scheme a high probability of fulfilling all its pension obligations, with no or very low levels of sponsor dependency.

Achieving self-sufficiency typically means hedging major risks such as interest rates, inflation and increasingly longevity risks, and establishing an investment strategy to generate sufficient liquidity to meet benefit payments.

Practically, the liabilities will be run off until the incremental cost of a full buy-out is acceptable relative to the costs and risks associated with governing the scheme on an ongoing basis.

Most UK pension schemes are explicitly targeting self-sufficiency or buy-out (see Figure 2), while the remainder have yet to explicitly identify either endgame target, seeking at this stage to focus on the minimum statutory funding requirement (known as technical provisions).

**FIGURE 2: LONG-TERM FUNDING OBJECTIVES FOR UK DEFINED-BENEFIT PENSION SCHEME<sup>1</sup>**



<sup>1</sup> Source: European Asset Allocation Survey 2019, Mercer. A similar result was found in the Aon Global Pension Risk Survey 2019.

## CONSOLIDATION

Commercial consolidators are still new to the market and untested over the long term, but they present a third possible endgame for pension schemes to consider.

Under this approach, a pension scheme's assets and liabilities are transferred to a new entity, the consolidator, which is responsible for managing the assets and paying the liabilities. The sponsor may also need to make a one-off payment.

Different consolidator models exist with some targeting a buy-out whilst others running off the liabilities.

A consolidator does not have a sponsor that provides contributions. Security is provided through a capital buffer, underwritten by capital investors, that is used to support the solvency of the scheme if necessary.

The level of capital support is typically lower than that provided by an insurance company in a buy-out. For this reason, consolidation may be considered less secure, but it is also backed by the Pension Protection Fund and requires a lower level of funding to implement.

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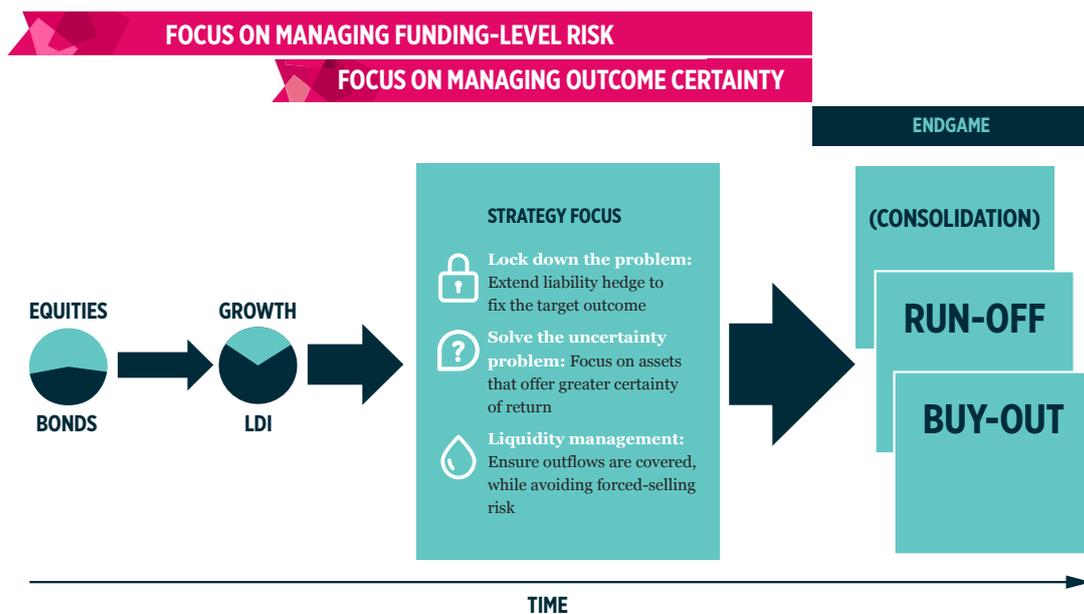
## 4

# WHAT IS YOUR FLIGHT PLAN? DE-RISKING STRATEGIES TO ACHIEVE THE ENDGAME

SO HAVE TO ADOPT STRATEGIES TO ACHIEVE IT WITHIN THE SHORTEST REALISTIC TIMEFRAME WITH THE LOWEST LEVEL OF RISK.

De-risking strategies can be broadly divided into those focusing on **managing funding-level risk** and strategies focusing on **managing outcome certainty** (see Figure 3). We cover these strategies in the following sections.

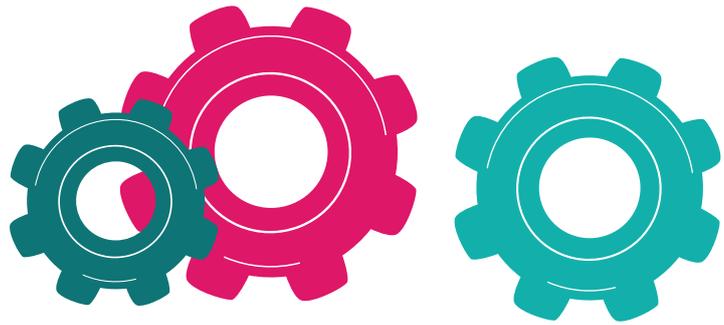
FIGURE 3: A TYPICAL DEFINED BENEFIT DE-RISKING JOURNEY



## WHAT IS THE DIFFERENCE BETWEEN FOCUSING ON FUNDING-LEVEL RISK AND FOCUSING ON OUTCOME CERTAINTY?

Managing **funding-level risk** focuses on reducing the mismatch between a pension scheme's assets and liabilities, which will reduce the ongoing volatility of the funding level.

Managing **outcome certainty** involves focusing on achieving the chosen endgame objective while meeting cashflows along the way.

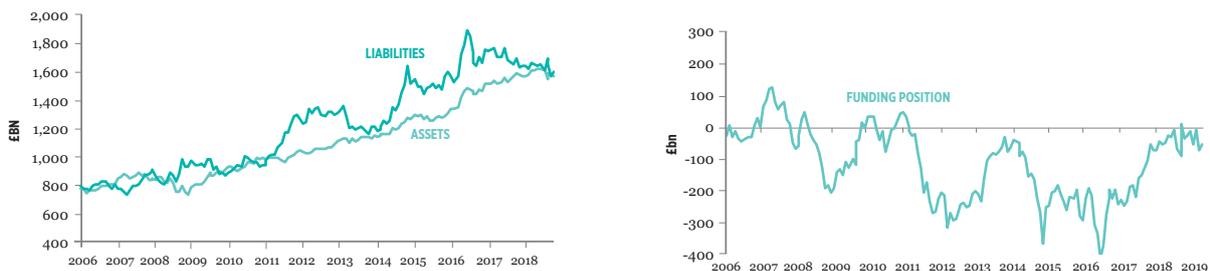


## FOCUS ON MANAGING FUNDING-LEVEL RISK

The first step for a pension scheme seeking to de-risk is typically to manage the risk that asset and liability values would not move in the same way.

In recent years, funding levels have been volatile as liability values have grown substantially and shown continued volatility (see Figure 4).

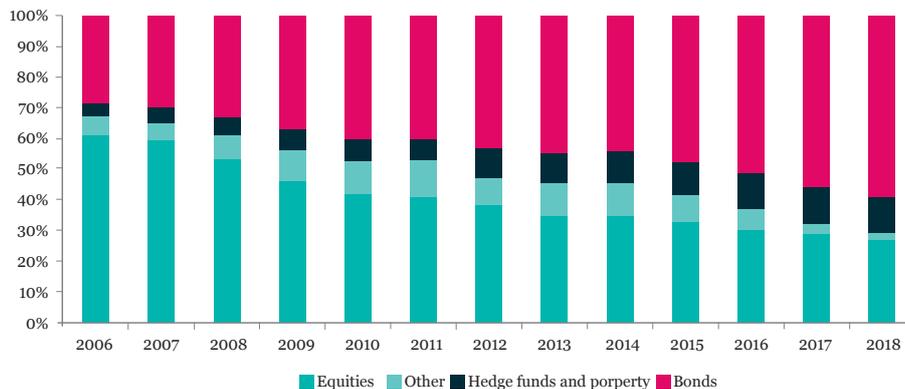
**FIGURE 4: THE MISMATCH BETWEEN ASSET AND LIABILITY VALUATIONS HAS BEEN VOLATILE – LEADING IN TURN TO FUNDING-LEVEL VOLATILITY?**



This has led many pension schemes to invest in assets that are sensitive to the same factors that change liability values: interest rates, inflation and longevity (see section titled *How liabilities are valued*). If asset and liability valuations react to these factors in the same way, funding-level volatility can be greatly reduced.

Many pension schemes use bonds to hedge some of their liability risks and this may reflect some of the shift into the asset class in recent years (see Figure 5). Bonds offer a predictable schedule of future payments (assuming no defaults) and, like liabilities, they change in value in response to movements in interest rates and inflation.

**FIGURE 5: UK PENSION SCHEMES HAVE SHIFTED OUT OF EQUITIES AND INTO BONDS <sup>3</sup>**



<sup>2</sup> Source: PPF 7800 Index data. As at 30 June 2019.

<sup>3</sup> Source: Pension Protection Fund Purple Book 2018.

Investing in bonds means a scheme uses assets to buy the bonds rather than invest them elsewhere for growth. As a result, many schemes also use repurchase agreements (repos) and swaps to enable them to hedge liabilities while keeping capital free to invest elsewhere.

This approach lies at the heart of liability-driven investment (LDI) strategies, which now account for a significant proportion of UK pension scheme assets<sup>4</sup>.

Some schemes have also implemented solutions to help manage longevity risk, the next largest liability risk for most schemes after interest rates and inflation. These solutions include longevity hedges and insurance buy-ins. We address these in the section titled *Focus on managing outcome certainty*.

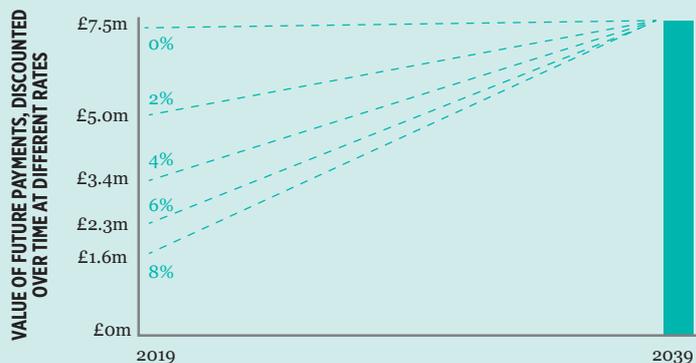
### HOW LIABILITIES ARE VALUED

There are two stages to valuing a pension scheme's liabilities: projecting future benefit payments and valuing those future payments in today's money.

- ▶ **Projecting future payments:** Payments to the beneficiaries of a pension scheme will depend on the specific terms promised to them, such as how the payments are linked to inflation. By taking the specific benefit promises into account, together with forecasts and assumptions about how factors such as inflation and life expectancy will develop, it is possible to produce projections of a scheme's future annual benefit payments.
- ▶ **Calculating the value today of future benefit payments:** After projecting a pension scheme's future payments, it is possible to calculate how much money will be required today to meet those future payments. This amount is known as the 'present value' of the scheme's liabilities and allows a pension scheme to assess its funding position. The present value is calculated using an assumed rate of return, known as a discount rate. A lower discount rate would lead to a larger present value of liabilities. Discount rates are typically linked to government bond yields.

In Figure 6, a 2039 benefit cashflow is forecast at c.£7.5m. If we use a discount rate of 4%, meaning a rate that assumes assets will grow at 4% a year between now and 2039, the cashflow is valued at £3.4m in today's money. We will need more in today's money if we use a lower discount rate, and less if we use a higher discount rate.

**FIGURE 6: CALCULATING THE PRESENT VALUE OF FUTURE PAYMENTS**



<sup>4</sup> Source: Liability Driven Investment: Unique insights for UK pension schemes, Annual Survey 2018, XPS Investment.



## HOW REPOS AND SWAPS COULD HELP PENSION SCHEMES HEDGE LIABILITIES WHILE ALSO INVESTING FOR GROWTH

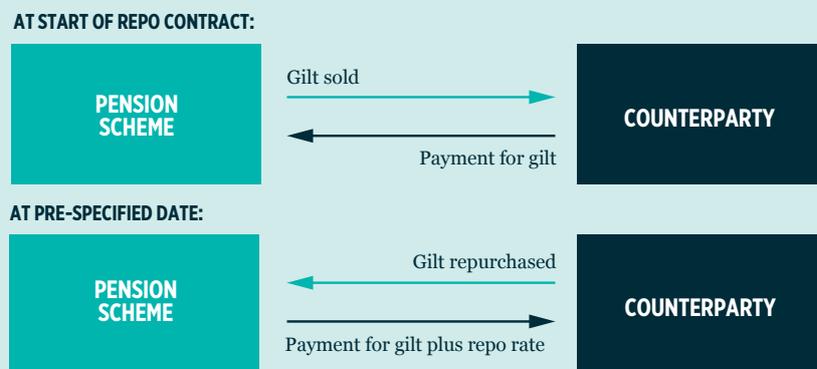
Repos (a term used to refer to a ‘sale and repurchase agreement’) and swaps can help a scheme to hedge liability risks without the need to tie up as much capital as if it is solely invested in bonds. This enables it to continue to invest in return-seeking assets to help improve its funding level.

- ▶ **Repos:** Under a repo, one party sells an asset (in the context of UK pension schemes, typically a UK government bond, known as a gilt) to another, typically a bank, and agrees to buy the bond back at a pre-agreed price at a specified time in the future (see Figure 7).

Repo transactions provide a source of additional cash for the party selling the government bond. As the seller has committed to repurchase the bond in the future at a fixed price, the seller also retains exposure to the performance of the original gilt.

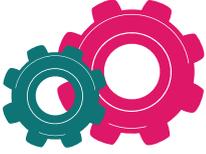
This means many pension schemes use repos to fund the purchase of more bonds for liability-hedging purposes.

**FIGURE 7: HOW REPO CONTRACTS WORK**



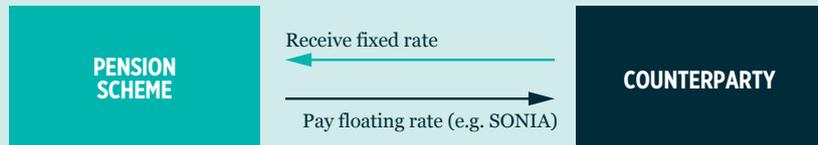
- ▶ **Swaps:** A swap is an agreement between two parties to exchange payments in the future. A pension scheme seeking to access bond-like returns might use an interest rate swap to receive a fixed rate of interest from a bank. In exchange, the scheme would pay the bank a variable interest rate, linked to a market rate such as SONIA (see Figure 8). If the market rate falls, the value of the swap contract would increase for the scheme, because it will still receive the agreed fixed rate from the bank, but the variable rate it has agreed to pay in return will fall. Other types of swap work on the same principle, but link the payments exchanged to other measures, such as inflation.

Swaps are a big component of an LDI strategy because the present value of swaps can change in line with the present value of a pension scheme’s liabilities.

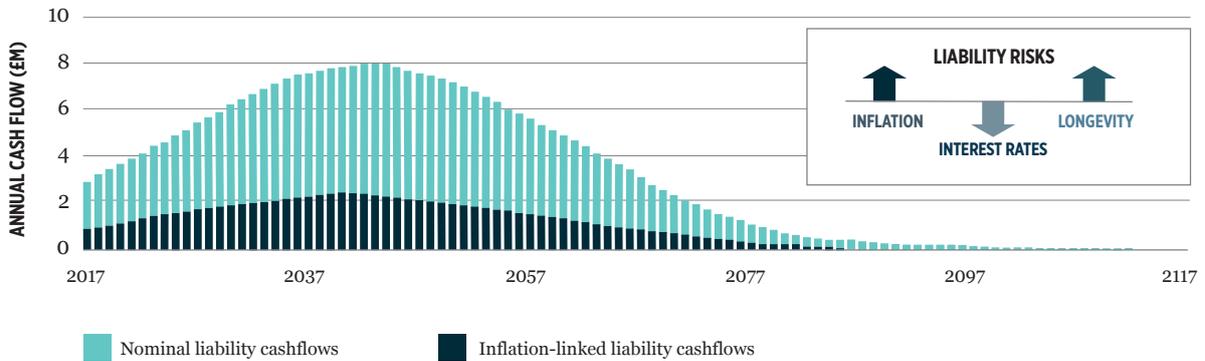


Swaps are typically partially-funded, meaning the parties involved do not need to exchange the full notional value of the exposure on which the interest is based. Over time, as the value of the swap changes, the parties will make payments to reflect those changes. This means a pension scheme can use much of its capital to invest for other purposes, while keeping some capital aside to cover collateral (or margin) calls under the swap contract.

**FIGURE 8: HOW SWAPS WORK**



**FIGURE 9: HOW LIABILITY RISKS AFFECT LIABILITY VALUATIONS FOR A SAMPLE PENSION SCHEME**



There are three main factors that affect liability valuations:

- ▶ **Interest rates:** Long-term interest rates (typically based on long-dated government bond yields) are used by most pension schemes to reflect the discount rates used to calculate the present value of their liabilities. If interest rates rise, the present value of liabilities will fall.
- ▶ **Inflation:** Benefit payments are usually linked to inflation, which means that rising inflation forecasts will lead to an increase in projected payments.
- ▶ **Longevity:** If pensioners live longer than expected, a pension scheme will have to pay out benefits for longer. This will also increase the sensitivity to changes in inflation and interest rates.



## FOCUS ON MANAGING OUTCOME CERTAINTY

Many pension schemes have moved on from focusing purely on improving and maintaining their overall funding level to considering how they will pay pensions both now and in the future – in other words, how they will achieve their endgame.

This is due to several trends, including:

- ▶ **Pension schemes are better funded:** As funding solvency has improved, pension schemes are more able to turn their focus from dealing with concerns regarding underfunding to how they will fulfil short-term cashflow needs without compromising on longer-term goals.
- ▶ **Pension schemes are maturing:** UK defined-benefit pension schemes are maturing, with over 80% effectively closed to new members, and 40% also closed to future accrual<sup>5</sup>. Almost three quarters of UK schemes are cashflow negative, meaning they pay out more than they receive<sup>6</sup>.
- ▶ **Regulators are focusing on the topic:** Regulators expect pension schemes to take their future cashflow requirements into account when setting their investment strategy, alongside asset and liability risks<sup>7</sup>.

These trends have focused pension schemes' attention on how to address three challenges:



**1. Lock down the problem:** Pension schemes need enough assets to cover their liabilities. But whether they have enough comes down to several factors, including the expected return on assets, the impact of inflation on its pension obligations, and the longevity of the scheme's members. These factors can change materially over time, making it difficult for a scheme to know how best to ensure its assets can cover its liabilities.

- ▶ Hedging these risks, so that a scheme's asset portfolio reacts to changes in these factors in line with liability valuations, can help to lock down the target outcome the scheme needs to achieve. Many pension schemes have already hedged these factors to some degree using LDI strategies (see section titled *Managing funding-level risk*).



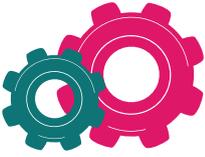
**2. Solve the uncertainty problem:** Identifying a target return to be achieved within a specific timeframe to cover all liabilities is important. But achieving that outcome with any level of certainty can be difficult. As schemes mature they have less time to close out any funding shortfalls, increasing the required returns from their shrinking asset pool. They also have less time to repair their funding solvency after any negative event. This makes certainty of return a crucial consideration.

- ▶ Using assets that generate more predictable contractually-defined cashflows, such as investment grade bonds, can help to increase the certainty of achieving the target outcome.

<sup>5</sup> Source: The DB landscape: Defined benefit pensions 2018, The Pensions Regulator.

<sup>6</sup> Source: European Asset Allocation Survey 2019, Mercer.

<sup>7</sup> See page 43, Investment guidance for defined benefit pension schemes, The Pensions Regulator: <https://www.thepensionsregulator.gov.uk/en/document-library/regulatory-guidance/db-investment>



**3. Liquidity management:** If a scheme is cashflow negative, when cashflow obligations arise, it may not have enough cash on hand to fulfil them. In such a case, the scheme may be forced to sell other assets in order to meet its cashflow obligations. This can have a significant negative impact, especially if it sells those assets at an inopportune time such as immediately after a sharp market downturn – should markets then recover, the scheme has fewer assets that might participate in that recovery. This would leave the scheme overall in a worse position.

- ▶ An approach that balances portfolio allocations between short-term liquid assets and longer-term growth assets can help ensure there is enough liquidity to meet cashflow needs when they arise, without being forced to sell other assets. It can also help ensure that a pension scheme can maximise the potential growth from its liquid assets.

#### NEW TOOLS TO HELP MANAGE OUTCOME CERTAINTY

When looking to hedge liability risks, increase certainty of return and manage liquidity needs, pension schemes have a wide range of potential options. The most suitable will depend on a scheme's specific circumstances.

In recent years, some specific approaches have become particularly relevant for schemes seeking to take the next step towards their endgame.



- ▶ **Longevity hedges:** As pension schemes have largely hedged interest rate and inflation risks associated with their liabilities, their attention has turned to longevity risk. Longevity hedges allow a pension scheme to isolate and hedge longevity risk.



- ▶ **Contractual asset approach (also known as cashflow-driven investment, or CDI):** The focus of maturing pension schemes typically turns towards meeting their cashflow obligations while also improving – or maintaining – their funding level. Managing their portfolio to help meet their cashflow obligations has led many schemes to consider a portfolio focused on contractual assets to help balance these competing requirements.



- ▶ **Liquidity management framework:** Holding too much in cash can mean a pension scheme is holding 'dead money'. Some schemes are therefore considering holding a range of liquid strategies in which to invest their collateral to avoid missing out on potential returns.



- ▶ **Buy-in:** Under a buy-in, a pension scheme can transfer some assets to an insurance company in return for future cashflows to help cover payments for a specified segment of the scheme membership. A buy-in should be viewed as an asset held by the scheme.



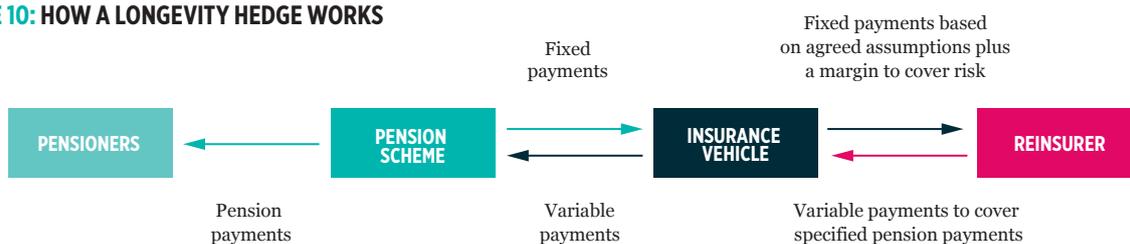
#### LONGEVITY HEDGES: HOW TO MANAGE LONGEVITY RISK

Longevity hedges (also referred to as longevity swaps) can help mitigate the risk that a pension scheme's members live longer than expected.

Under such an agreement, a pension scheme makes payments to a counterparty for a fixed period of time and the counterparty makes payments in return to cover pension payments as they fall due. In effect, the pension scheme exchanges a set of fixed payments for variable payments linked to an uncertain liability (pensioners' longevity) (see Figure 10).

Longevity hedges typically involve the risk being passed to a reinsurer, but an insurance vehicle must stand between the scheme and the reinsurer.

**FIGURE 10: HOW A LONGEVITY HEDGE WORKS**



### CONTRACTUAL ASSET APPROACH: A WAY TO BALANCE SHORT-TERM AND LONG-TERM GOALS

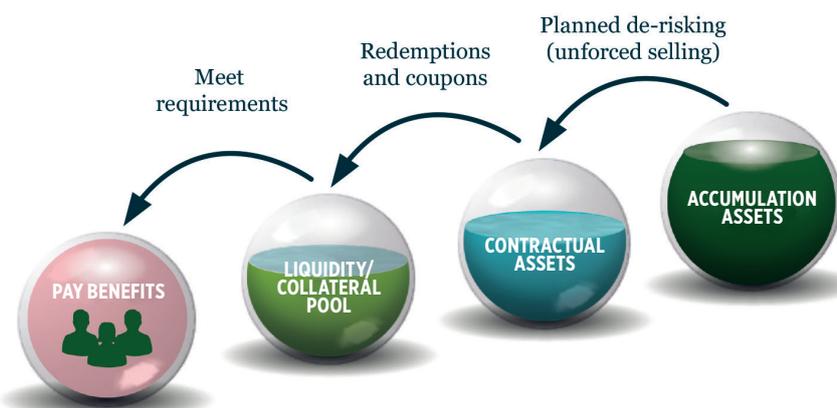
To help increase certainty of return from their investment portfolio, and to manage liquidity, many pension schemes have considered new approaches to help them fulfil their specific liquidity requirements to pay out pensions, while also investing for the longer term to reach their chosen endgame objective by their target time horizon. One approach is to focus on building a portfolio of ‘contractual assets’, which offer the potential to generate contractually-defined cashflows.

Broadly speaking, constructing a portfolio of contractual assets can help to:

- 1. Generate cashflows required to pay benefits:** A contractual-asset portfolio aims to enable schemes to pay liabilities as they fall due, but without being forced to sell assets. It achieves this by holding assets which generate contractual cashflows and which provide sufficient liquidity through income and maturing payments based on a scheme’s specific benefits-cashflow profile.
- 2. Secure returns with greater certainty:** A contractual-asset portfolio can help increase the certainty of narrowing a scheme’s funding gap (or maintaining the current position), typically by investing in low-risk assets and by holding investments to maturity.
- 3. Reduce funding level volatility:** A contractual-asset portfolio increases funding certainty by facilitating closer integration of the investment strategy with the scheme’s funding strategy. The cashflows expected by investing predominantly in high-quality credit assets, and by holding these investments to maturity, are deemed reasonably certain by actuaries. Therefore, they can link liability discount rates to the expected returns from these assets, helping to reduce funding-level volatility and increasing the certainty of meeting the target funding level.

These strategies can therefore help pension schemes to achieve their objectives with greater certainty, both in relation to paying benefits as they fall due and achieving long-term funding outcomes (see Figure 11).

**FIGURE 11: THE ROLE CONTRACTUAL ASSETS CAN PLAY**





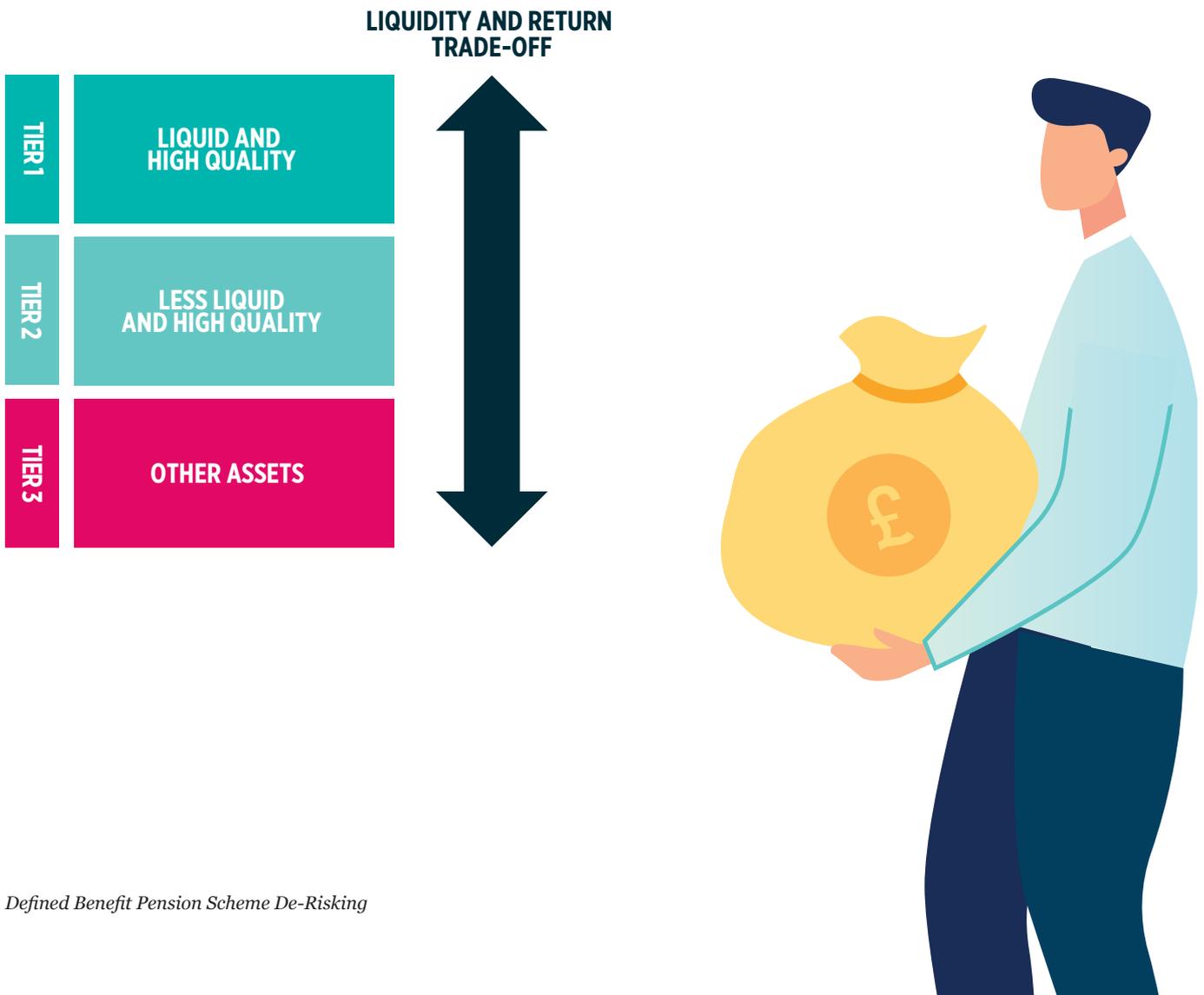
**LIQUIDITY MANAGEMENT FRAMEWORK: MAKING THE MOST OF YOUR LIQUID ASSETS**

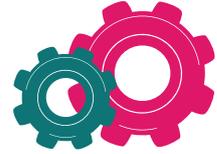
Ensuring a balance between holding enough liquid assets to meet collateral calls and other liquidity requirements, such as transfers out, while also investing for other objectives – such as growth – is an important consideration for any pension scheme.

It can be beneficial to have access to a range of liquid strategies in which to invest collateral in order to avoid missing out on potential returns. Pension schemes can construct a ‘liquidity waterfall’ in order to minimise forced-selling risk, while ensuring capital remains invested, to avoid unnecessarily foregoing returns.

Under such a structure there are ‘tiers’ of assets with varying levels of liquidity and yield potential (see Figure 12). Less liquid assets are intended to generate cash which can be used to replenish the pool of more liquid assets, which are used to cover payments out of the scheme. This can help ensure a prudent amount of liquid assets are held to cover short-term obligations, while maximising potential returns.

**FIGURE 12: ‘TIERING’ ASSETS CAN HELP YOU CONSTRUCT A LIQUIDITY WATERFALL TO IMPROVE THE EFFICIENCY OF YOUR COLLATERAL POOL**



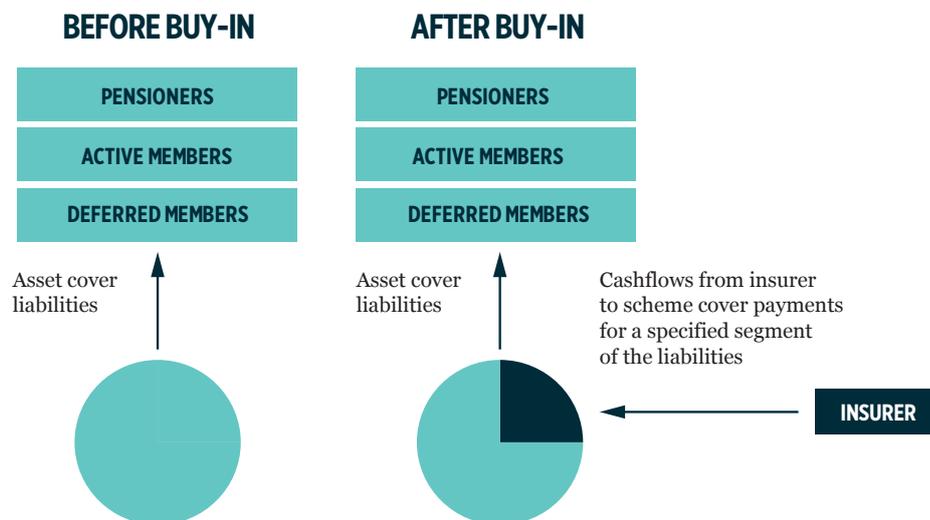


### BUY-INS: A WAY TO HEDGE RISKS ASSOCIATED WITH A PORTION OF YOUR LIABILITIES

Under a buy-in, a scheme transfers some of its assets to an insurance company, which in return commits to paying future cashflows that will cover payments for some of the scheme membership (see Figure 9). This means a buy-in hedges the risks, including longevity risk, associated with payments for a specified segment of the scheme membership.

These cashflows are made to the scheme, which retains responsibility for fulfilling its obligations to members. A buy-in should be viewed as an asset held by the scheme.

**FIGURE 13: HOW A BUY-IN WORKS**



### WHAT IS THE DIFFERENCE BETWEEN A LONGEVITY HEDGE AND A BUY-IN?

A **buy-in** hedges the investment, interest rate, inflation and longevity risks associated with payments for a portion of the scheme membership. The scheme typically pays a single premium for the buy-in up front, so a portion of assets are tied up in the buy-in at the outset.

A **longevity hedge** aims to mitigate only longevity risk and the payments made by the scheme are spread over time. The scheme retains control over all its assets, allowing it to invest elsewhere in seeking to generate the returns needed to make up any funding shortfall.

## 5

# SIX STEPS TO MAKE A DE-RISKING DECISION

**THERE IS NO ONE-SIZE-FITS-ALL APPROACH. OFTEN DECISIONS ARE MADE BASED ONLY ON LIMITED FACTORS, SUCH AS CURRENT MARKET PRICING OR THE IMPACT ON A SUBSET OF THE SCHEME.**

To achieve the optimal outcome, schemes could benefit from considering a wider set of factors, such as the impact of any decision on the scheme as a whole and the certainty of achieving its desired outcome.

Below, we set out six steps to help pension schemes make the next de-risking decision.

<b>1. AGREE YOUR ENDGAME</b>	<ul style="list-style-type: none"> <li>Defining your endgame will determine the target level of assets you need, relative to liabilities.</li> <li>A buy-out will typically need more assets (relative to liabilities) than targeting self-sufficiency on a run-off basis or consolidation.</li> </ul>
<b>2. SET THE TARGET TIMEFRAME FOR YOUR ENDGAME</b>	<ul style="list-style-type: none"> <li>The longer the timeframe, the lower the asset returns required, but the longer you need to manage the pension risk.</li> <li>Your target timeframe may be influenced by your sponsor or regulation.</li> </ul>
<b>3. IDENTIFY HOW MUCH YOUR SPONSOR IS WILLING OR ABLE TO CONTRIBUTE IN EACH FUTURE YEAR</b>	<ul style="list-style-type: none"> <li>You should consider your sponsor's expectation of future contributions, including any maximum limits in any one year.</li> <li>You should also assess the quality/strength of the covenant.</li> </ul>
<b>4. CALCULATE THE REQUIRED RETURN ON YOUR PORTFOLIO TO ACHIEVE YOUR TARGET</b>	<ul style="list-style-type: none"> <li>The required return is calculated based on the current funding level and expected future cashflows such as contributions, benefit payments and expenses.</li> <li>You would need to make many assumptions, such as levels of future interest rates, inflation and mortality rates.</li> </ul>
<b>5. MANAGE TRADE-OFFS TO MAXIMISE THE CHANCE OF ACHIEVING YOUR TARGET</b>	<ul style="list-style-type: none"> <li>Generally, you will have to take on more investment risk in the pursuit of higher return targets.</li> <li>Hedging strategies will reduce your sensitivity to certain risk factors, but could reduce assets available for other purposes, such as generating growth.</li> <li>Certain strategies may allow you to hedge while also investing for growth (e.g. using repos to increase leverage).</li> <li>If the problem appears unsolvable (e.g. the required asset return is too high) you may need to reassess your chosen endgame and/or target timeframe.</li> </ul>
<b>6. STRESS-TEST YOUR ABILITY TO MEET YOUR TARGET RETURN</b>	<ul style="list-style-type: none"> <li>The assumptions you stress-test will typically fall into three broad categories:             <ul style="list-style-type: none"> <li>asset values (e.g. impact of market falls, bond defaults and widening credit spreads)</li> <li>liability valuations (e.g. impact of changes in interest rates, inflation expectations and longevity)</li> <li>cashflows (e.g. impact of changes in the size or timing of benefit payments, sponsor contributions or transfers out)</li> </ul> </li> <li>If you do not achieve your target return, you will need to extend the timeframe to achieve your endgame, or rely on increased sponsor contributions.</li> </ul>

# 6 GLOSSARY

- **Accrual**

Members of defined benefit pension schemes may accrue future benefits over time, according to the rules of the scheme. This is referred to as accrual. Pension schemes are increasingly closing to future accrual, meaning their members will no longer be able to accrue future benefits.

- **Buy-in**

An agreement between a pension scheme and an insurer, under which the scheme transfers some assets to the insurer. In return, the insurer provides cashflows that reflect a specified segment of the pension payments for the scheme membership.

- **Buy-out**

An agreement between a pension scheme and an insurer, under which the scheme transfers all its assets and liabilities to the insurer. The insurer takes on legal responsibility for fulfilling pension obligations to scheme members. The corporate sponsor divests all responsibility for the scheme, and scheme members become policyholders with the insurer.

- **Cashflow-driven investment (CDI)**

An investment approach that focuses on constructing a portfolio of assets that generate cashflows to reflect the cashflow obligations of an investor, such as the future pension payments due to be paid by a pension scheme.

- **Collateral**

Liquid assets (such as cash) held in order to cover variation margin payments when required as the value of a derivative contract rises or falls.

- **Collateral call**

A request or requirement to pay collateral to fulfil a financial obligation under a contract. For example, if the value of a derivative contract changes, a party to the contract may receive a collateral call requesting it pays collateral to cover the change in value.

- **Contractual assets**

Assets that generate contractually-defined cashflows through income and/or the payment of principal on maturity, such as bonds.

- **Derivative**

A financial contract whose value is derived from a stock, commodity, interest rate, currency or market index. A stock option, for example, is a derivative security whose value depends on the price of the underlying stock. Derivatives can be used by investors as a speculative tool, or to protect assets against changes in value. See also forward contract, futures contract, call option, put option and swap.

- **Funding level**

The difference between the market value of assets held by a pension scheme and the present valuation of projected liabilities the scheme is due to cover.

- **Inflation**

The increase in the general price of goods and services.

- **Initial margin**

Collateral deposited by a market participant when initiating some derivative positions.

- **Interest rate**

The amount charged on top of the principal provided by a lender, to a borrower, for the use of assets.

- **Liability-driven investment (LDI)**

Managing assets directly against projected liabilities in order to help ensure the latter can be met. Widely used by defined-benefit pension schemes.

- **Liabilities**

The projected cashflows that a pension scheme is committed to pay out to its members.

- **Liquidity**

The ease with which buying and selling takes place in the market. Liquidity may be measured by the daily trading volume in a security.

- **Longevity**

The amount of time someone lives. In the context of pension schemes, longevity is a crucial factor: the longer a pensioner lives, the greater the liability to the pension scheme, which will have an obligation to pay income to the pensioner until death.

- **Margin call**

A request or requirement to pay collateral due to a change in value of a derivative contract.

- **Partially-funded**

When used in reference to derivative instruments, this term is used to reflect the fact that an investor does not need to tie up capital up-front to originate the transaction. Over time, as the value of the derivative changes, payments may be required to reflect those changes. This means the investor can use capital to invest for other purposes, while keeping some aside to cover collateral or margin calls under the derivative contract.

- **Repo**

An agreement to sell securities, usually bonds, to another party and to buy them back at a specified date and price.

- **Run-off**

A term used to describe a pension scheme that is paying off its liabilities as they fall due over time.

- **Self-sufficiency**

When a pension scheme has an investment portfolio that gives the scheme a high probability of fulfilling all its pension obligations, with no or low levels of sponsor dependency.

- **SONIA**

The Sterling Overnight Interbank Average Rate (SONIA) is a measure of the overnight interest rate paid by banks for borrowing in the sterling market.

- **Superfund**

A superfund takes on a pension scheme's assets and liabilities and acts as the scheme sponsor. The superfund runs the assets and liabilities in a pool alongside the assets and liabilities of other schemes.

- **Swap**

A contractual agreement to exchange a stream of periodic payments between counterparties.

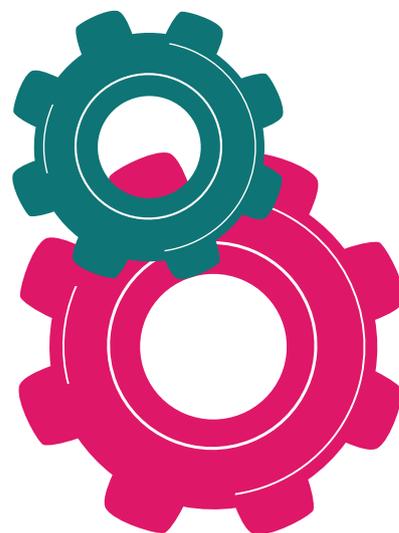
- **Transfer out**

A pension transfer out of a defined benefit pension scheme to another pension scheme.

- **Variation margin**

A payment made by counterparties under a derivative contract to cover daily, or even intraday, profits and losses.





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