

# REDVIEWS

Live Long and Prosper

After much talk, the first longevity swap transactions have turned theory into practice for defined benefit pension schemes. But do longevity swaps present a good opportunity for all schemes?

## **Babcock Longevity Swap: Key Facts and Figures**

- *First longevity swap done by a UK DB pension scheme*
- *Executed May 2009*
- *Covering £800m liabilities*
- *Between Babcock and Credit Suisse*

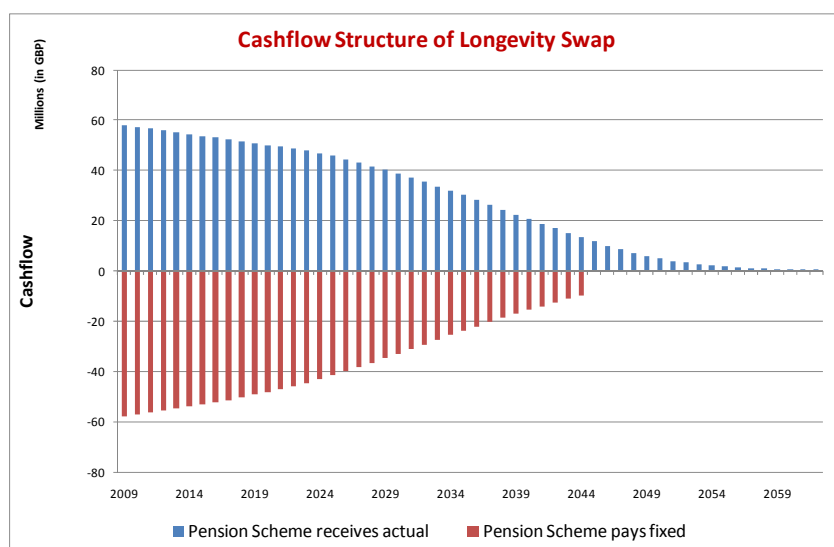
*In a vanilla longevity swap, the pension scheme replaces the actual pension payments, which form a series of floating cashflows, uncertain in amount and duration (blue) for a series of known, fixed payments to the third party (red). The fixed payments will be set by reference to a mutually agreed longevity basis. So as the floating cashflows vary, so will the profit or loss to the third party.*

## **1. So, what's happened?**

Longevity swaps have long been a hot topic in longevity risk hedging, but during 2007/08 the pension scheme risk-transfer market was dominated by pension “buyout” transactions – due in part to a combination of relatively good funding levels and competitive pricing. It took the onset of the financial crisis in late 2008, worsening funding levels and pressure on company cashflows to move the market’s focus from buyout to alternative risk transfer solutions, such as longevity swaps, requiring lower initial capital outlay.

The first longevity swap deal was announced in May 2009, between Babcock International and Credit Suisse. The engineering firm took action to protect itself from the risk of higher costs that might occur should its pensioners live longer than expected. The size of the deal was around £800m, representing nearly all of its pensions in payment and almost half of their total pension liabilities. (Source: Babcock International Group Newsroom)

**Figure 1 Example Cashflow Structure of a Longevity Swap (Source: Redington)**



**RSA De-Risking****Solution: Key Facts and Figures**

- *£1.9bn longevity swap, together with interest rate and inflation swaps*
- *Between RSA and Goldman Sachs and Rothesay Life*
- *Overall marginal cost to the scheme; restructuring the gilts hedge offset the cost of the longevity swap*

Just last week, the RSA UK pension scheme announced that it had agreed to enter into a longevity swap, alongside interest rate and inflation swaps, with Goldman Sachs and Rothesay Life (a Goldman Sachs subsidiary). The size of this transaction (£1.9bn, representing over 55% of pensioner liabilities) dwarfs the Babcock deal. (Source: IPE)

It is also interesting that in the RSA deal, no significant costs were incurred by the scheme as the trustees were able to tap current anomalies in the UK government bond market by selling a series of 10-15-year gilts to Goldman Sachs in return for 30- and 40-year gilts. The short-end steepening in the gilts yield curve, i.e. the relative cheapness of longer-dated gilts, meant that the profit to the Scheme under this gilt transaction was sufficient to cover the initial longevity swap premia. This situation is not one that will readily be replicable for future transactions. (Source: IPE) Also, as switching into longer term gilts, scheme's asset portfolio is likely to provide a better match to the liability duration, which further reduces the scheme's exposure to interest rate and inflation risk.

**2. What is next on the horizon?**

The market has generally been very positive about further expansion of the longevity swap market. The main drivers for this optimism are:

- The Babcock and RSA deals have acted as **proof of concept** and removed any "first-mover" barrier
- Providers in the market have **capacity** and are eager to write business, potentially leading to more favourable pricing
- A general shortage of cash favours **unfunded solutions** such as swaps over buyout as there is no significant upfront cash payment.

But there is also a need to be cautious, particularly as it can be difficult to test prices in a thin market. Trustees must also consider the counterparty risk of the third party alongside the sponsor – a point reiterated by the Pensions Regulator in late June.

Also, notably both longevity swaps have been conducted on pensioner benefits only. Over the course of 2009, it is unlikely that longevity swaps will be executed with respect to deferred members. This is because the cost of hedging deferred members is expected to be more expensive. Normally the average age of deferred members is younger than pensioners. This makes the contract term longer and therefore there is more exposure to both longevity risk and market risk. Also, as deferred members have not started taking pension benefits yet, there are uncertainties around when their payments will commence and how much they will be. For example, some members may draw pension benefits early due to ill-health. Additionally, the number of members who opt for a cash lump sum at retirement and the amount they take may differ from the assumptions used at the inception of the longevity swap.

*Longevity swaps for deferred members are unlikely to be executed in 2009*

Interest in this market will continue to grow, as will innovation from the providers. At present there are a range of solutions available to hedge longevity risk, ranging from the purest form of longevity risk hedging to annuities, which transfer all liability risk, including longevity.

### Longevity swaps

There are currently three forms of longevity swap being offered. The common features of these longevity swaps are that the scheme pays a fixed rate based on agreed longevity assumptions, and receives floating payments linked to the realised mortality rates of a pre-agreed group of people. There is no significant upfront fee and therefore the scheme retains ownership of the assets. The three forms have varying degrees of hedging effectiveness, i.e. how close the floating cashflows match the actual benefits to be paid from the scheme:

Type of longevity swap	Population index	Sample index	Scheme specific
<b>Floating cashflows based on mortality experience of</b>	Country population	Smaller sample of population	Members of the pension scheme
<b>Hedge effectiveness</b>	Low	Depends on sample	High
<b>Level of detailed data required for pricing/implementation</b>	Low	Low	High
<b>Liquidity</b>	High (in theory)	Medium	Low

Anecdotal evidence suggests that despite the high level of detail required to implement a scheme specific swap, this is the most common type of swap that providers are being asked to quote on – as a perfect hedge is easier to understand and explain to trustees.

### Annuities

Bulk annuities are particularly popular concept for many DB pension schemes. It is a contract that provides a perfect liability match, covering all liability risks, including longevity risk. There are several variations available in the market:

#### 1. Pension buy-out

A pension buy-out allows a pension scheme to transfer all its pension liabilities to an insurance company or buyout company by paying a pre-agreed price. By doing this, the pension scheme diverts its responsibilities for both assets and liabilities, and the pension payments become the obligation of the buyout company with no recourse to the sponsor and trustees.

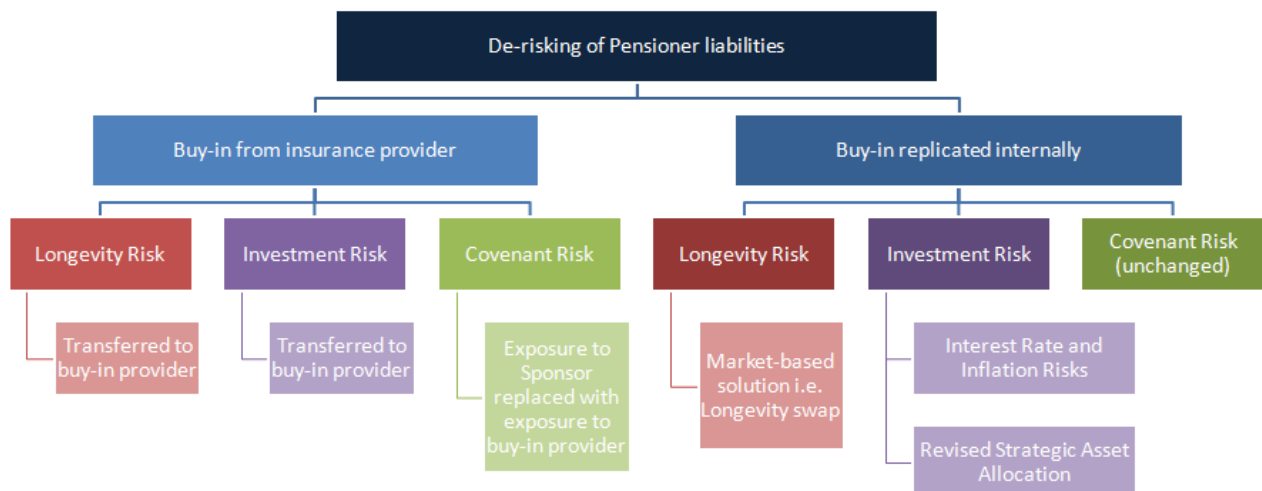
**2. Pension buy-in**

Similar to the buy-out, the scheme removes its liability risk by paying an annuity premium. In this case, both assets and liabilities remain on the sponsor’s balance sheet and are not diverted. The policy becomes an asset of the pension scheme.

**3. Synthetic annuity options**

These provide the right (but not the obligation) to purchase a synthetic annuity in the future at a predefined price for a given cohort. In return, the scheme pays an upfront or regular premium to buy the option. This option protects the pension scheme against fluctuations in annuity prices as well as simplifying the process of setting their investment targets and strategies. Depending on the period of deferment, there may be an element of counterparty risk.

Longevity swaps can also be combined with inflation and interest rate swaps to replicate a “buy-in”. This is similar to the approach taken by RSA; however it is possible to approach different providers for the different portions.



*Pricing and capacity considerations may make a swap hedging solution an attractive alternative to buy-in*

To compare the two approaches, the key consideration would be the current capacity and pricing levels in the buy-in market compared with the ability to generate sufficient return on assets to offset additional costs from the individual swaps.

Other considerations include the change in covenant risk from the sponsor to the insurer as well as the ongoing costs of the scheme managing separate hedges.

**3. Where do I sign up?**

It will be some time before the more complex longevity swap becomes as common-place as inflation or interest rate swaps; however there are a few things that schemes should be doing to prepare themselves for the right opportunity:

1. **Clearly articulate your level of tolerance to longevity risk and also the price you would be prepared to pay to remove this.** It is crucial for pension schemes to set up a target for their overall risk appetite. Based on this, schemes can then determine their tolerance to each of the components of risk. This helps sponsors and trustees to have a clearer view on the level of longevity risk they are willing to accept.
2. **Keep abreast of the solutions in the market.** We are seeing an increasing number of ideas from various banks and financial institutions. Some will fly, others will die; but knowing what is available is crucial to making the right decision.
3. **Stay in touch with the financial markets.** As shown by the RSA deal, idiosyncrasies in prices can lead to novel structures.
4. **Construct a framework to monitor all these moving parts and to identify when the stars are aligned.**


*Schemes considering a longevity solution should maintain an awareness of their own risk tolerance and market conditions*

Being prepared will be crucial for schemes to identify and take advantage of longevity opportunities as they arise – allowing them to prosper, even whilst pensioners are living longer.

## Contacts

**Redington**  
13-15 Mallow Street  
London EC1Y 8RD

Direct Line: +44 (0) 20 3326 7129  
Telephone: +44 (0) 20 7250 3331



**Ian Maybury**  
**Managing Director | Senior Actuary, Co-Head ALM & Investment Strategy**  
ian.maybury@redington.co.uk  
www.redington.co.uk

**Redington**  
13-15 Mallow Street  
London EC1Y 8RD

Direct Line: +44 (0) 20 3326 7111  
Telephone: +44 (0) 20 7250 3331



**Jeremy Lee FIA**  
**Vice President | Investment Consulting**  
jeremy.lee@redington.co.uk  
www.redington.co.uk

**Redington**  
13-15 Mallow Street  
London EC1Y 8RD

Direct Line: +44 (0) 20 3326 7120  
Telephone: +44 (0) 20 7250 3331



**Wenyu Bai**  
**Associate | ALM & Investment Strategy**  
wenyu.bai@redington.co.uk  
www.redington.co.uk

## Disclaimer

In preparing this report we have relied upon data supplied by third parties. While reasonable care has been taken to gauge the reliability of this data, this report therefore carries no guarantee of accuracy or completeness and Redington Limited cannot be held accountable for the misrepresentation of data by third parties involved.

This report is provided to the Recipients solely for their use, for the purpose indicated. This report is based on data/information available to Redington Limited at the date of the report and takes no account of subsequent developments after that date. It may not be modified or provided by the Recipients to any other party without Redington Limited's prior written permission. It may also not be disclosed by the Recipients to any other party without Redington Limited's prior written permission except as may be required by law. In the absence of our express written agreement to the contrary, Redington Limited accept no responsibility for any consequences arising from any third party relying on this report or the opinions we have expressed. This report is not intended by Redington Limited to form a basis of any decision by a third party to do or omit to do anything.