The Actuarial Profession
making financial sense of the future

Pensions Conference 2012
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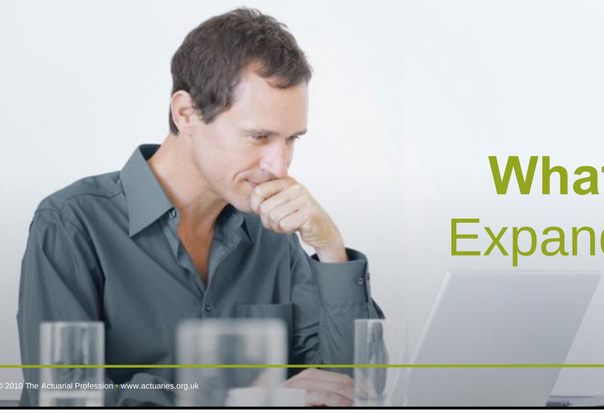


What's new in LDI
Expanding the toolkit

1 June 2012

Introduction

The LDI toolkit is expanding

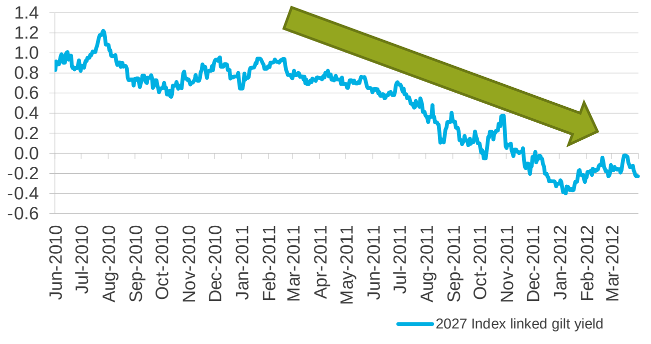
- Several new tools are becoming more common:
  - Swaptions
  - Gilt total return swaps and repos
  - Synthetic inflation only hedging
- The session will explain how these instruments work and why they have become popular

Background

Three challenges to a conventional swap-based LDI strategy

- Both gilt and swap yields are “too low” to hedge (but could fall further?)
- Gilt yields are higher than swap yields
- Gilt inflation is more attractive than swap inflation

Problem 1



Problem 1 : Gilt and swap yields are "too low" but could fall further

This may be a reasonable view to take but should be based on a forward looking view of the world not historical yields

- Forward looking yields may not be that far below fair value given the state of the world

The size of the view, in terms of risk and reward, should be seen within the context of the scheme's overall risk budget

- For many trustees this is their largest risk and is unconsciously taken

Solution 1 : Swaptions can be used to buy protection against the 'disorderly default' scenario

A swaption is an option to enter into a swap at an agreed rate at an agreed time in the future

- A pension scheme can buy an option to be able to enter into a 20 year zero coupon interest rate swap at a rate of, say, 2.5% p.a. in one year's time
  - This will be very valuable if the 20 year swap rates is far below 2.7% (at they might if Spain has to restructure its debts!) but worthless if the 20 year swap rate is above 2.7%
  - This protections has a cost in the form of the option premium

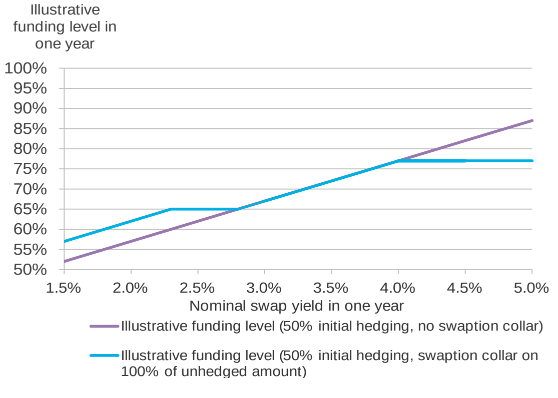
Solution 1 : Swaption can be used to buy protection

The cost of buying protection can be offset by selling some of the upside from yields rising

- Pension schemes benefit from yields rising but may not need all of this benefit e.g. scheme reaches full funding if yields rise to 4.0%
- It is possible to sell some of this upside by writing a swaption to pay a fixed rate and receive LIBOR
- i.e. the scheme would benefit in rates rising up to 4.0%

Solution 1 : Swaption can be used to buy protection

Zero premium swaption collar



Problem 2: Gilt yields are higher than swap yields

Gilts offer a high yield than swaps but are capital intensive to hold

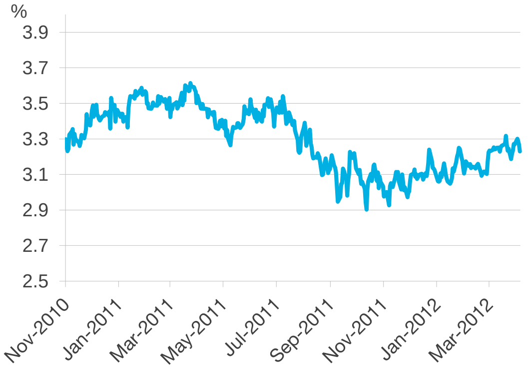
- i.e. it takes £100 of assets to hedge £100 of liabilities
  - Swaps are “unfunded” meaning that hedging can be achieved without using up assets
  - However, LDI managers need access to a pool of assets that can be used as collateral (typically c.30% of the value hedged)
- Before the financial crisis swaps had the dual benefit of being unfunded and having a higher yield

Solution 2: Gilt total return swaps

A gilt total return swap (TRS) can be used to gain exposure to gilts without having to tie up capital

- This enables investors to gain exposure to gilts with the same capital efficiency as swaps
- The main difference is that TRS tend to be for shorter periods, typically 1-3 years and so this introduces roll risk
  - Financing costs are currently below LIBOR making TRS attractive

Problem 3: Inflation looks attractive but what is the best way to gain exposure



Solution 3: Inflation looks attractive but what is the best way to gain exposure

"Synthetic" inflation exposure can be achieved as follows

- Buy an index linked gilt (using gilt repo or TRS if needed)
- Simultaneously sell a interest rate swap
  - In fact, the best approach is to sell a combination of par and zero coupon interest rate swaps to broadly match the maturity, duration and convexity of the index linked gilt
- This approach can reduce the cost of hedging inflation by c.0.2% p.a.

Conclusion

The LDI toolkit is expanding

- The expanded range of tools can help trustees to overcome some of the key challenges of a conventional LDI strategy
- These tools are not new or exotic but regularly used by other market participants
- Trustees should ask themselves whether they are equipped to take advantage of the full range of opportunities available to them

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.