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Open Forum

Staple Inn, 15 October

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The Risk-Free Rate: Politics, Economics & Investments

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Emily Penn

Origins of this presentation

Working party on “How to hedge the risk-free rate under Solvency II”

- Rationale for hedging
- Extrapolation to an “ultimate forward rate”
- QIS5 liquidity premium

Life Conference 2011

Society of Actuaries Ireland

Our Changing Futures

Bristol Actuarial Society

Yorkshire Actuarial Society

Life Conference 2012

Actuary magazine – “Hedging your bets”

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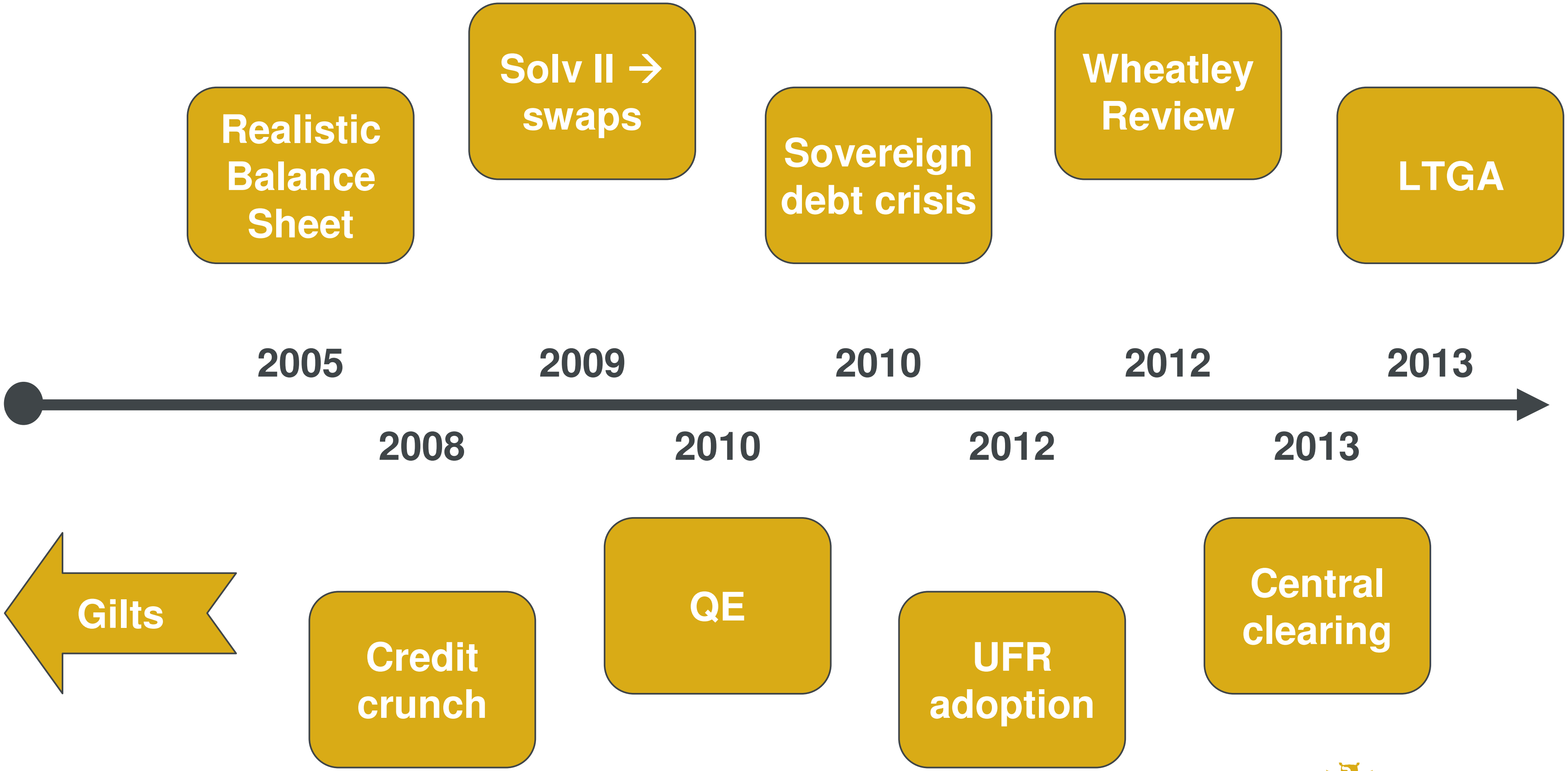
The journey so far …



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Drivers of the risk-free rate

Insurance Regulation

Non-Insurance Regulation

Investment Decisions

Politics

Economic Environment

Central Bank Operations

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Insurance Regulation

Solvency II

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~~Gove onds~~

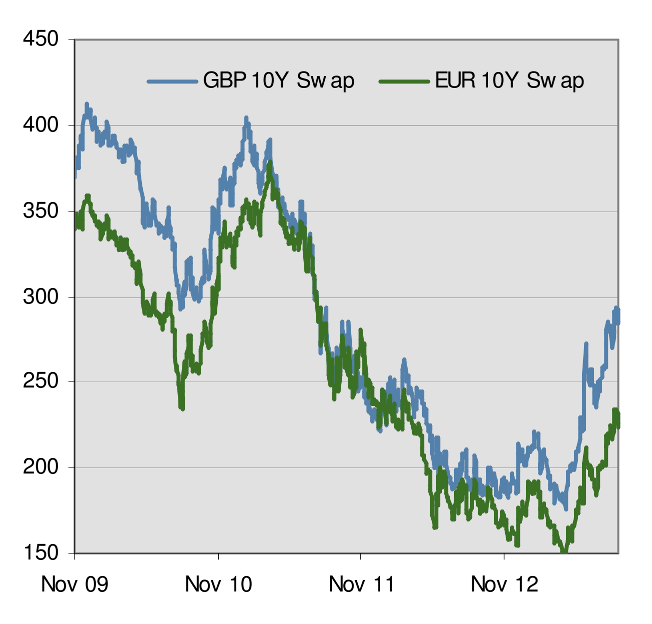
~~Overni swaps~~

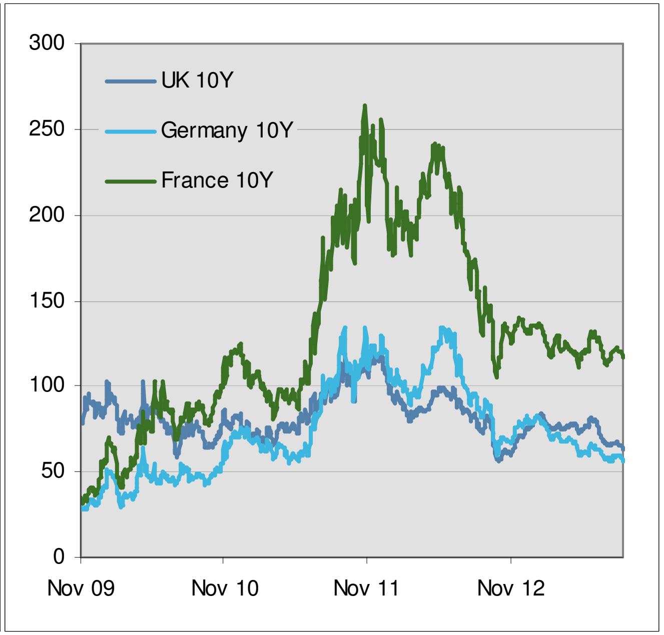
Libor swaps

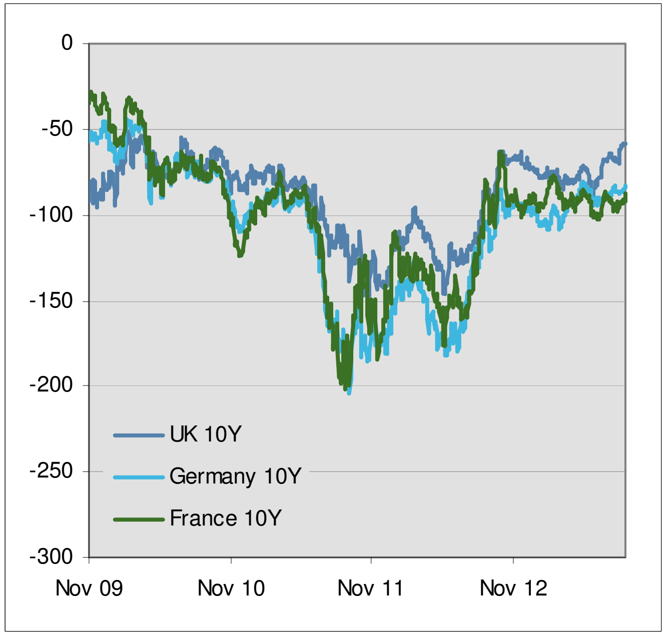
Breaking down the yield on a Government bond

Yield = Swap Rate + Credit Spread + Liquidity Premium

Swap Rate	+	Credit Spread	+	Liquidity Premium







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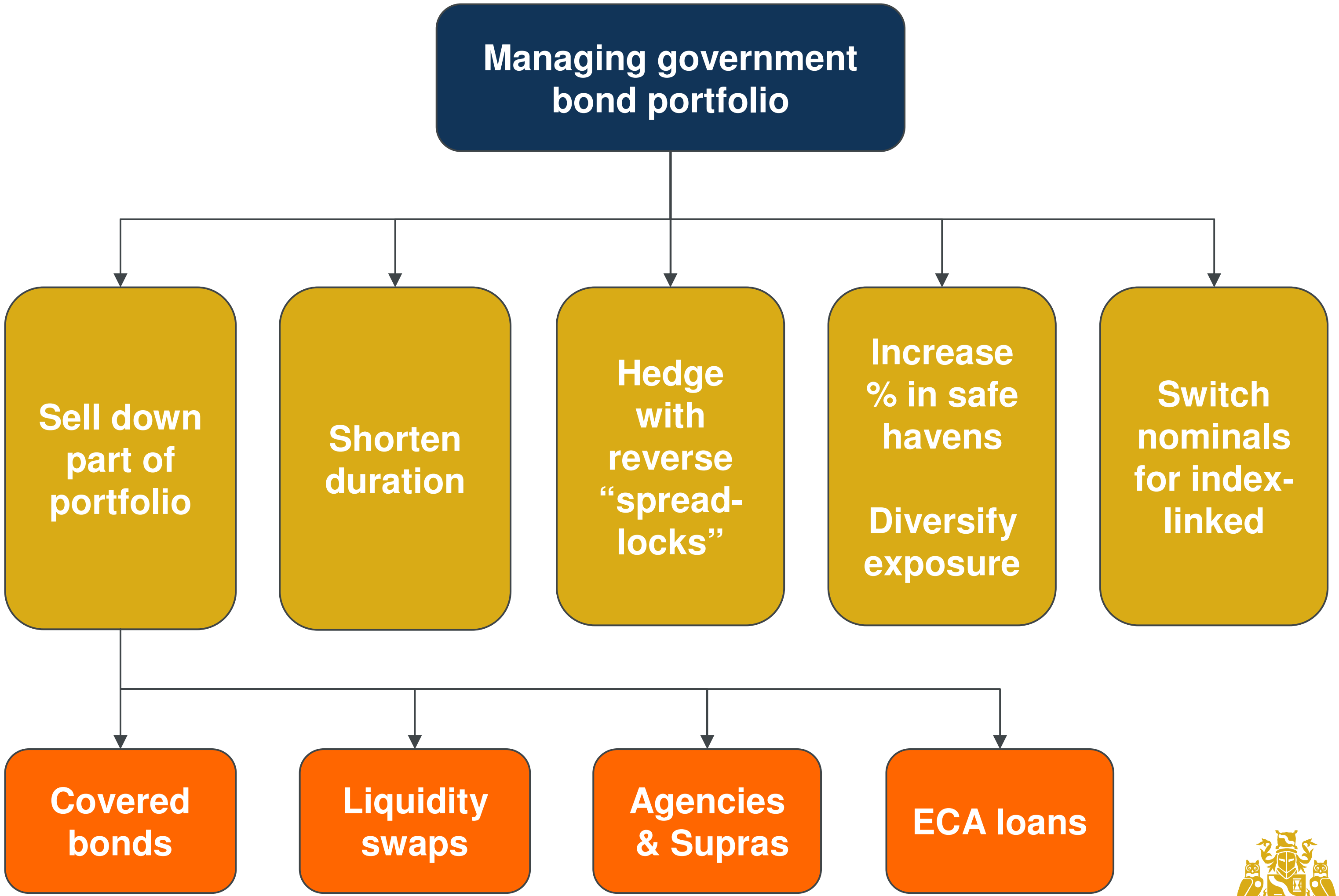
What choices does the insurer have?



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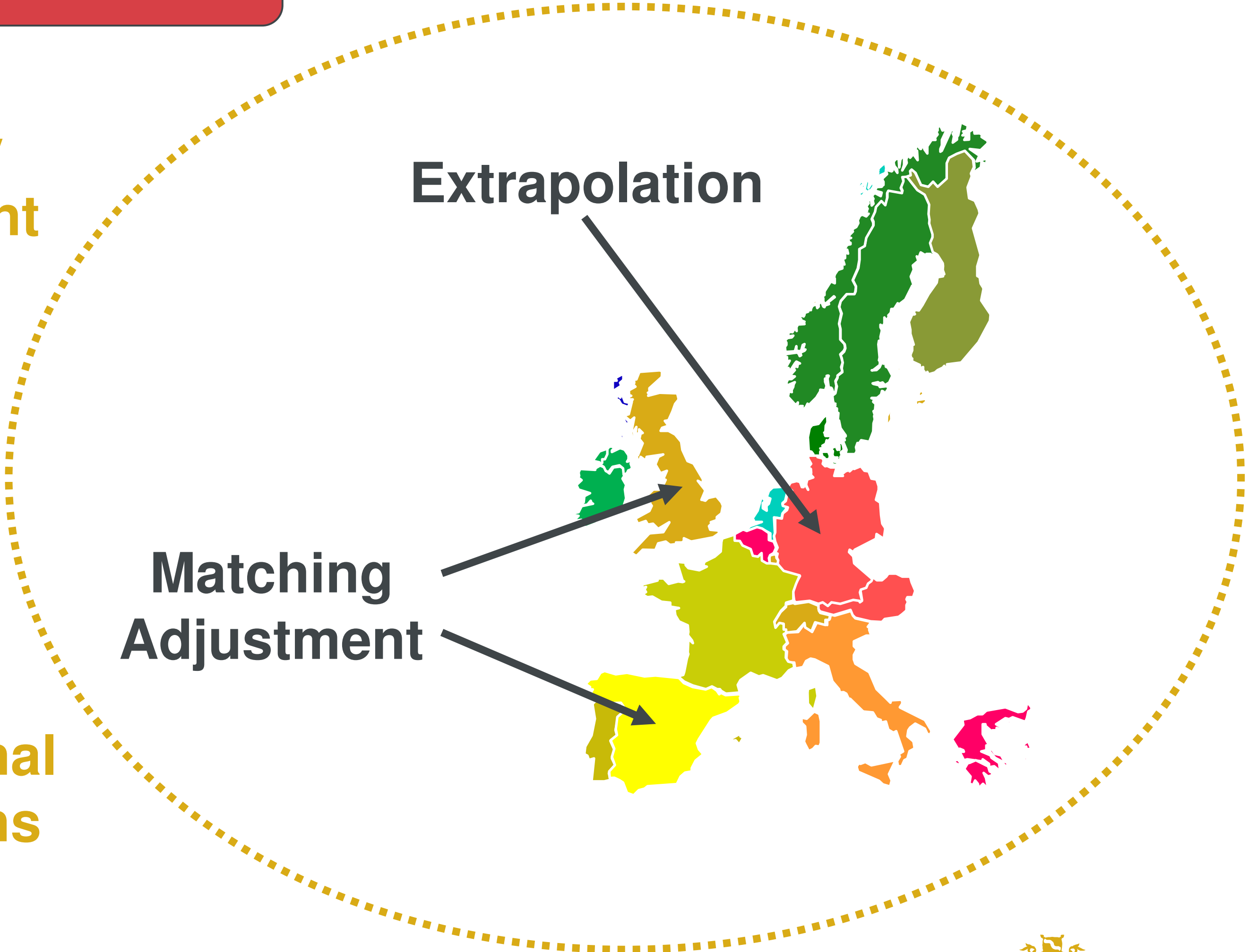
Politics

Volatility Adjustment



Transitional Provisions

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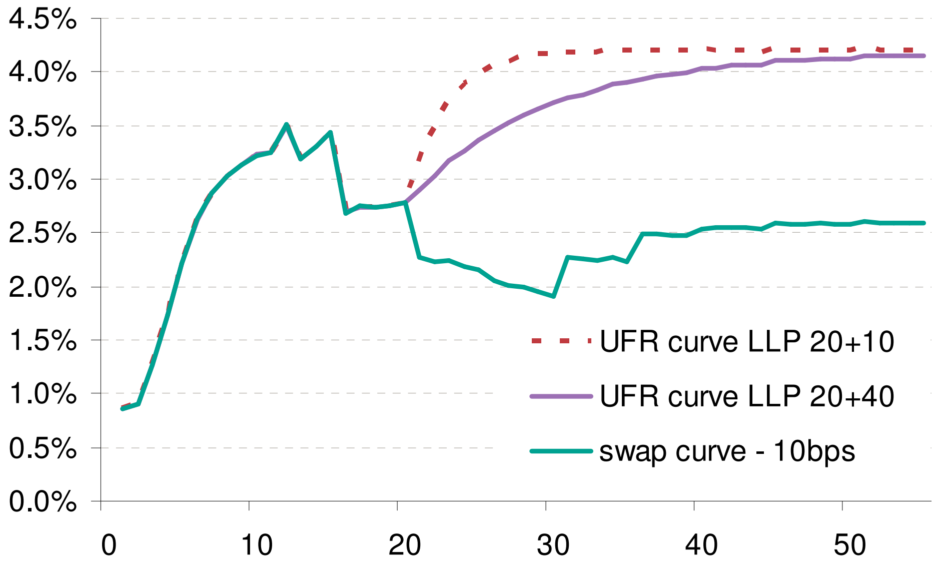
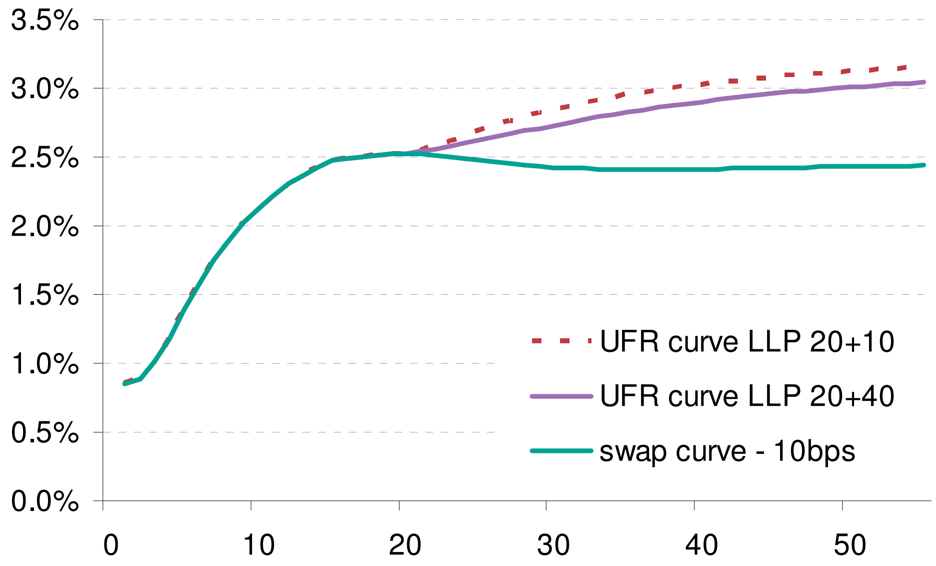
The extrapolation conundrum

1yr fwd rate under different curves



Source: Bloomberg; RBS; 26 April 2012

Resulting liability discount curves



Source: Bloomberg; RBS; 26 April 2012

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Solvency II to the rescue?

	Market consistent	Solvency II 20yr LLP 10yr convergence	Solvency II 20yr LLP 40yr convergence
Value of 50yr €10mn liability	€3.9 million	€2.1 million	€2.5 million
PV01 (as % of market consistent)	100%	24%	34%
Modified duration	50	22	27

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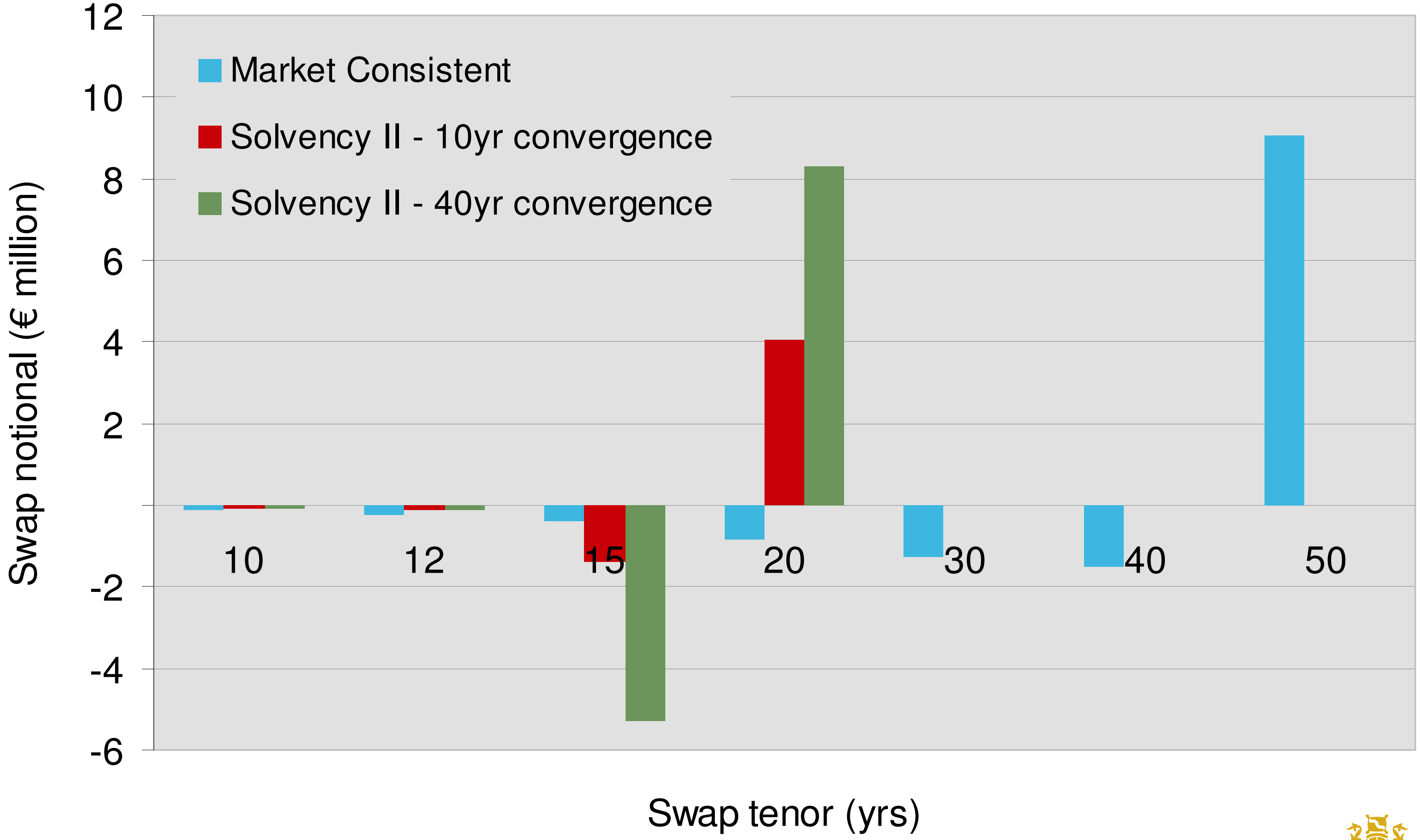
Delta hedges for 50yr €10 million liability



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Non-Insurance Regulation

- Traditional method of swap valuation was to use the **6mth Libor swap curve**
- Market moving to **CSA discounting**

What does this mean?

- Derivatives are valued based on the **cost of posting collateral**
- Normally based on overnight index swaps (OIS)
- Some CSAs allow wider collateral

Why?

- Libor previously regarded as bank funding rate – no longer the case
- Collateral at heart of risk management
- LCH moved to OIS in July 2010

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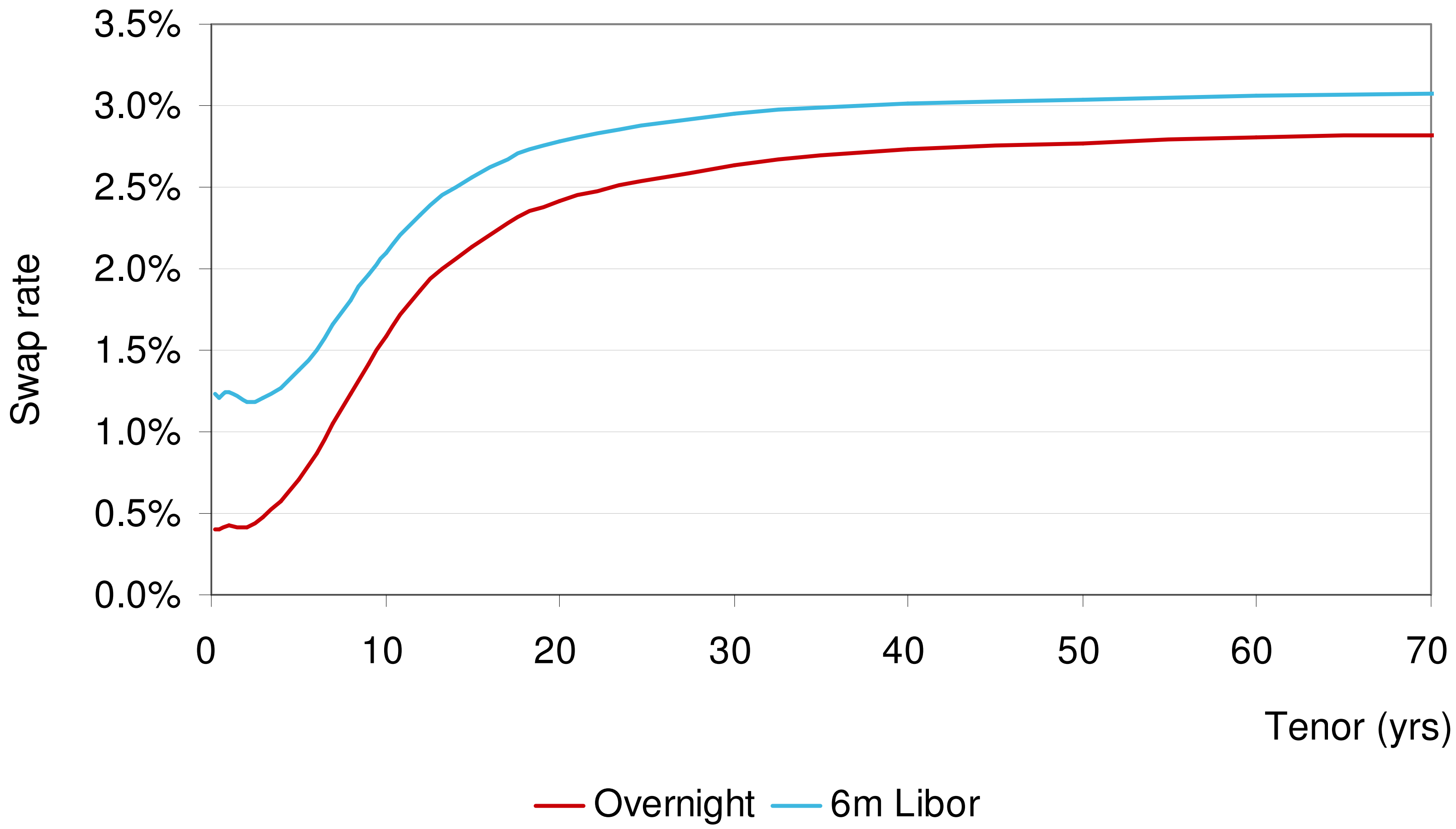
SONIA vs. Libor



Source: RBS; 24 October 2012

Impact on swap contracts held by Insurers

Example:

Tenor	**10 year**
Notional	**£1m**
Strike	**5%**
Value on Libor curve	**£305,200**
Value on OIS curve	**£315,400**
Difference	**£10,200**

- Greater impact for ITM/OTM swaps
- Less impact where CSA allows GBP corporates / Multi currency cash

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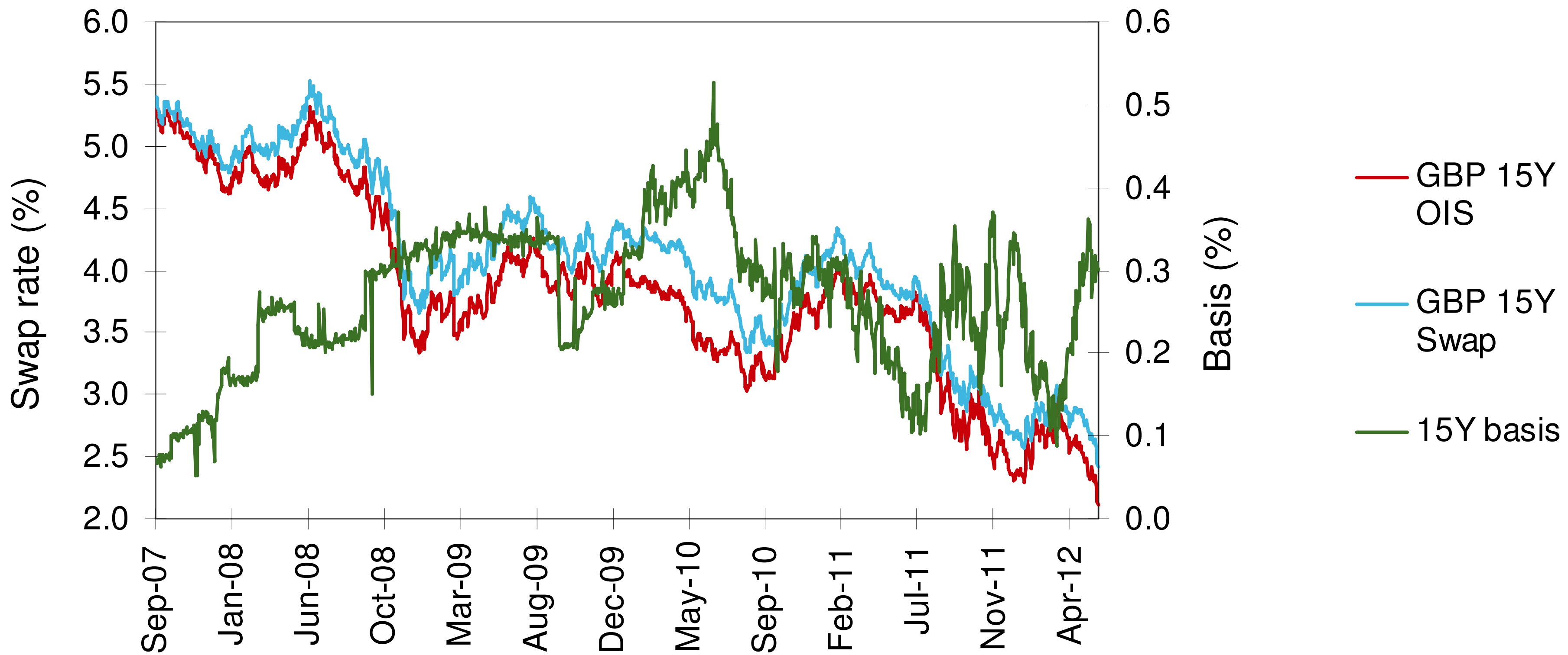
Resulting basis risk under Solvency II



Managing exposure

- Re-striking positions
- Hedging exposure

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Regulatory developments in Banking

The Wheatley Review of LIBOR:

final report

- ➢ ***"far reaching programme of reform"***
- ➢ ***Focus on governance***
- ➢ ***But alternative benchmarks remain under consideration***

- **Basel 3 / CRD IV**
  - Capital requirements **UP**
  - Liquidity requirements **UP**
- **More recently**
  - FSA has **relaxed** some of these requirements

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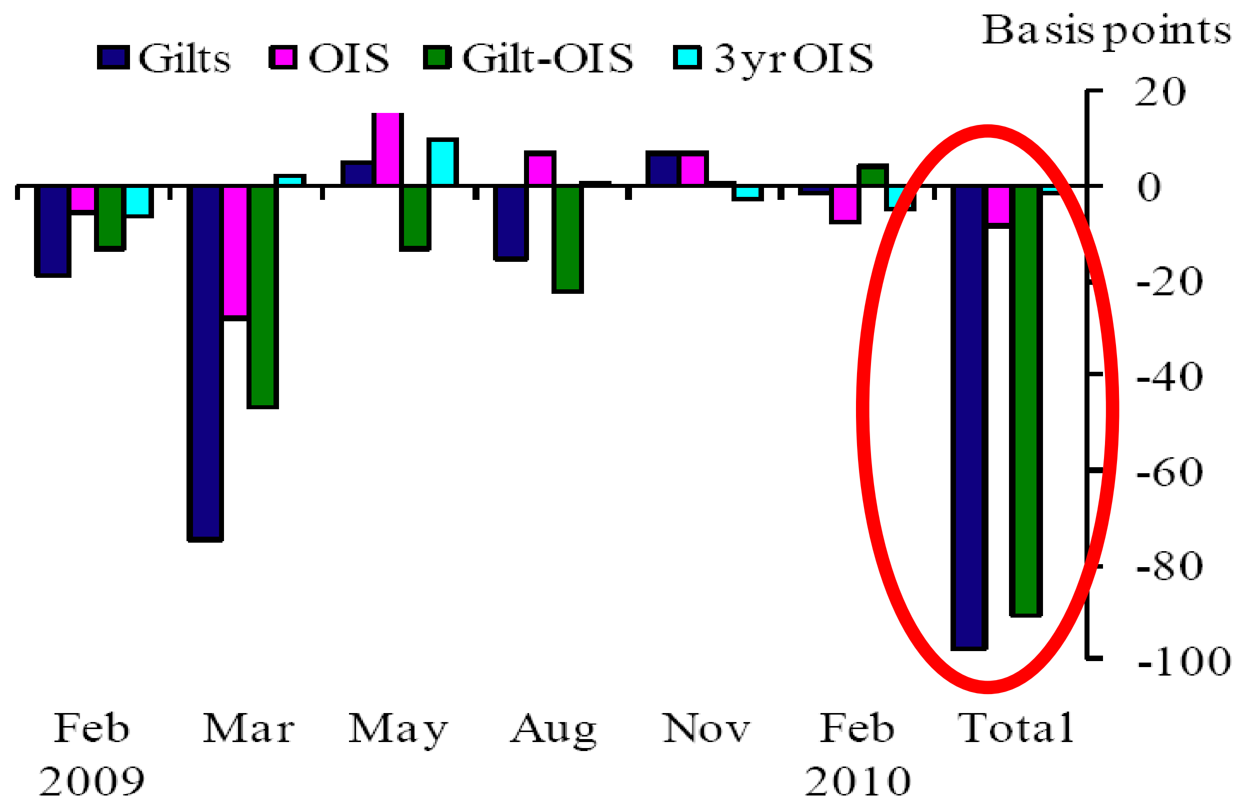
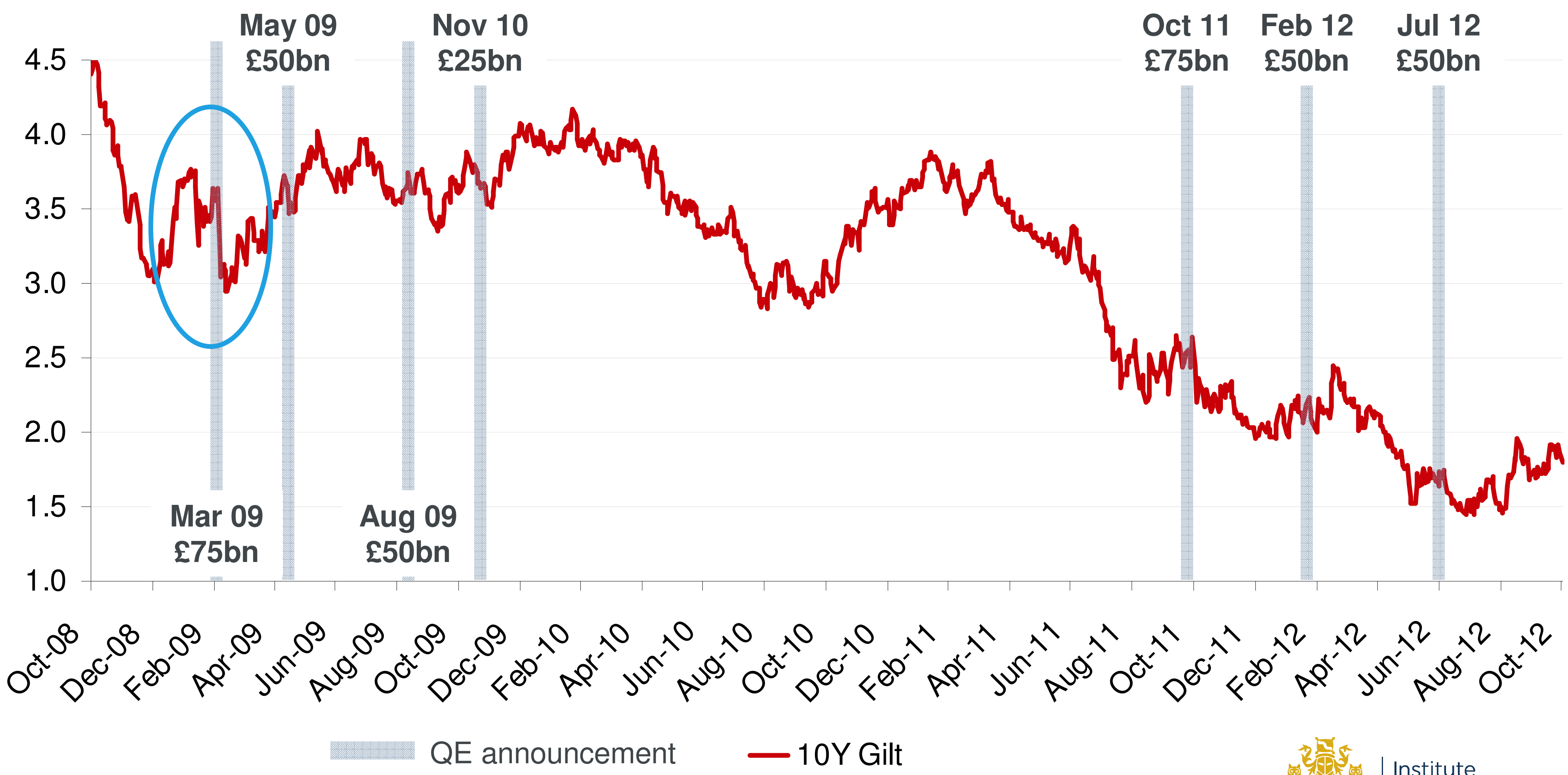
Central Bank Operations

“Summing over the reactions in gilt yields to each of the QE news events gives an overall average fall of just under 100 bps”



Sources: Bloomberg and Bank calculations.

Buy the rumour, sell the fact …



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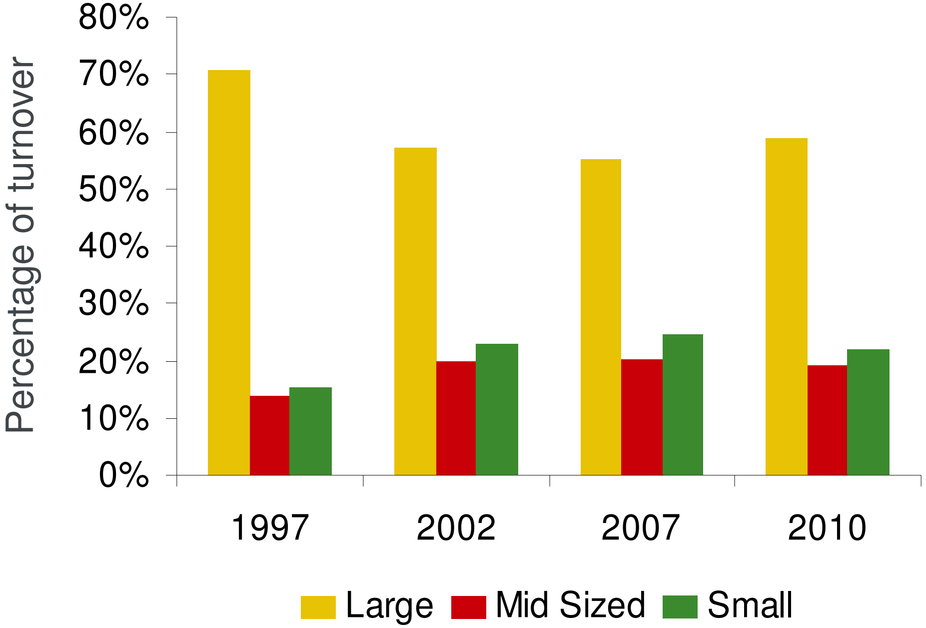
Changing Central Bank reaction functions …

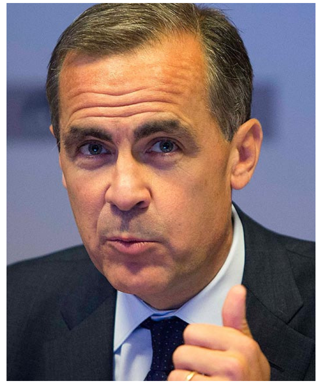
Shift from QE to FLS

SME's are crucial to the economy …



Source: Department for Business Innovation and Skills

Forward guidance



MPC intends not to raise Bank Rate until unemployment below 7%, with three 'knockouts':

- **CPI inflation ≥ 0.5% above target in 18-24 months' time**
- **Medium term inflation expectations rise**
- **Financial stability jeopardised**

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Economic Environment

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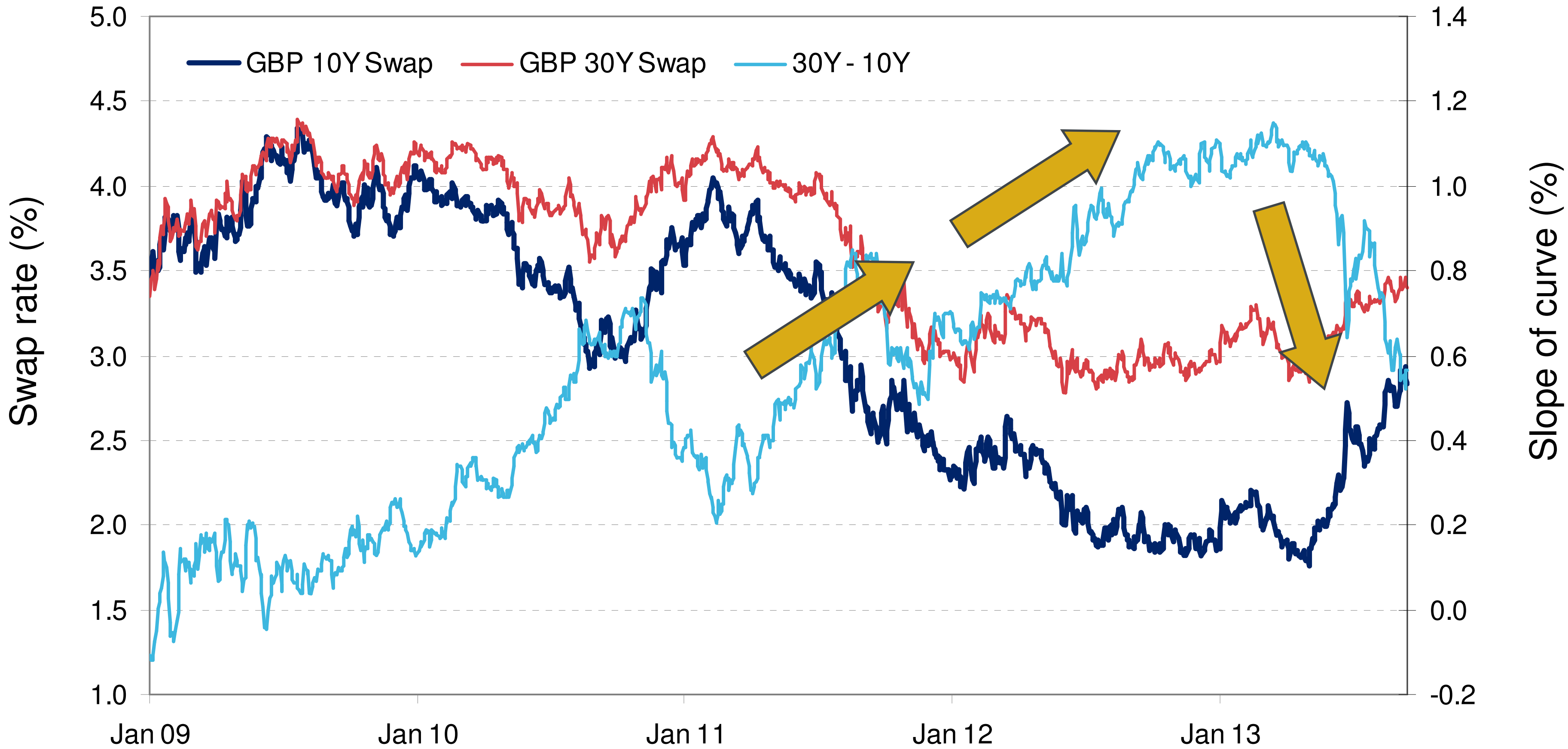
Slope of the curve



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Investment Decisions

Demand from Insurers

- Solvency II basis
- Capital buffer
- Risk appetite
- Market liquidity
- Economic vs. Regulatory
- Liquidity premium
- Investors
- Asset manager mandates

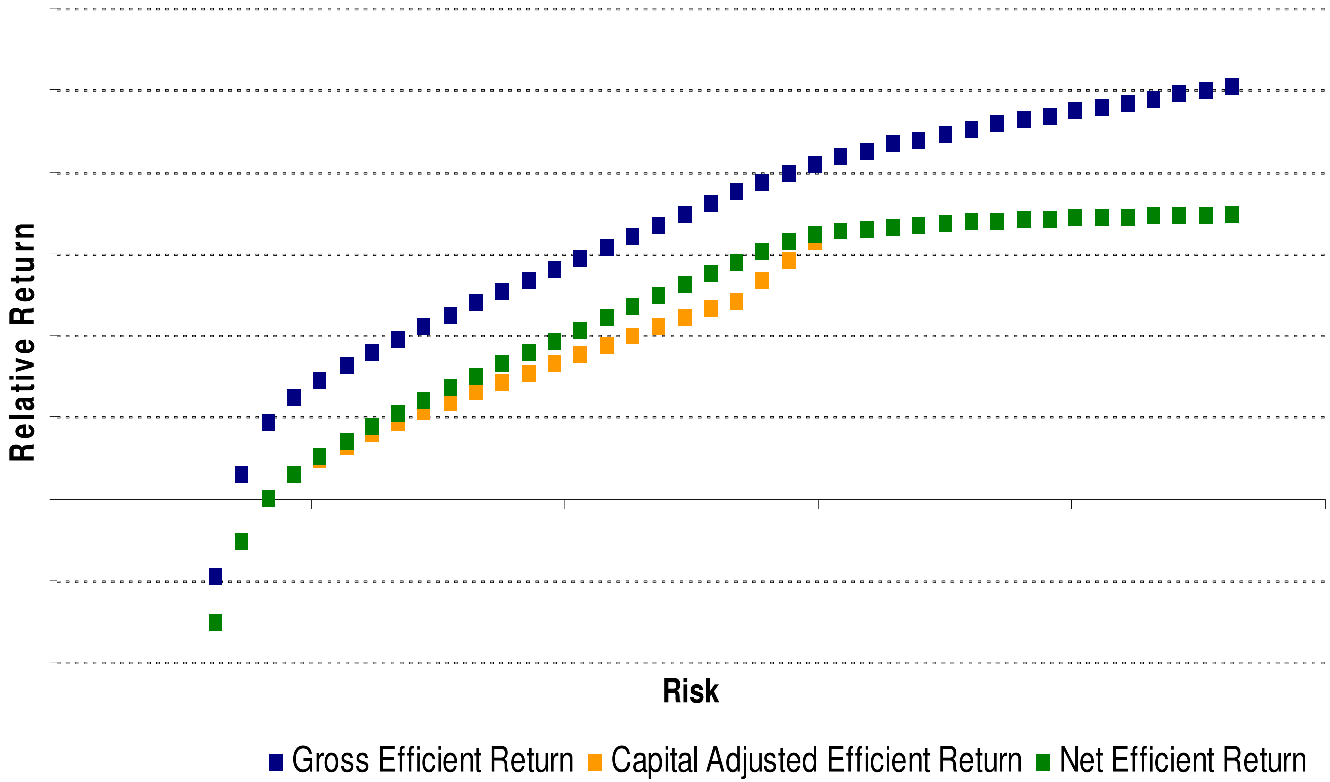
Efficient frontiers

If the cost of capital penalises risk …

… then Investors may switch to lower risk assets …

… hence reducing risk-free yields

Efficient portfolio returns relative to liabilities



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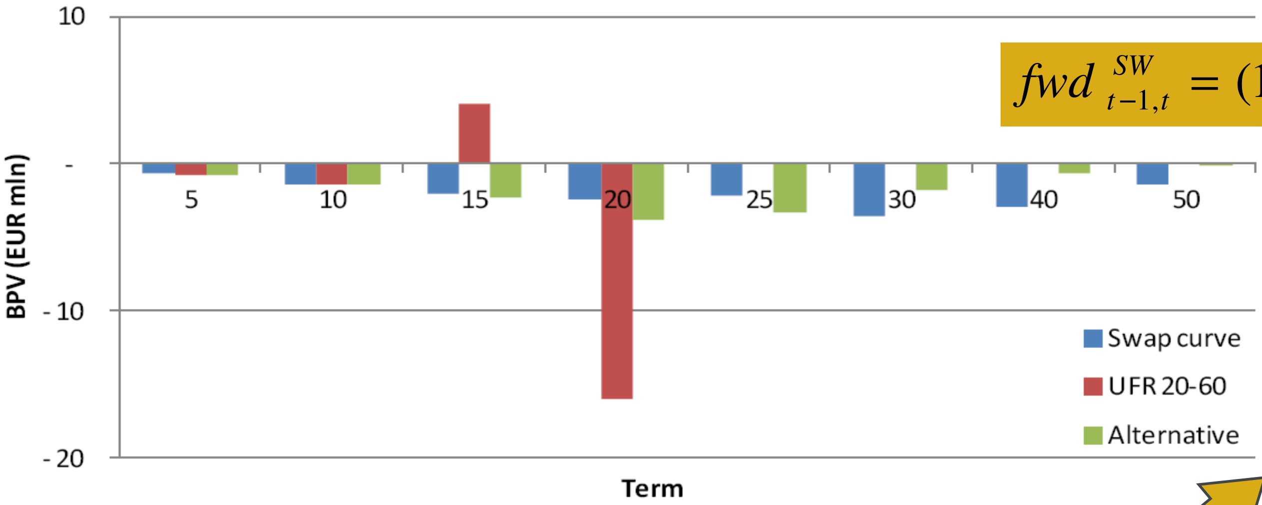
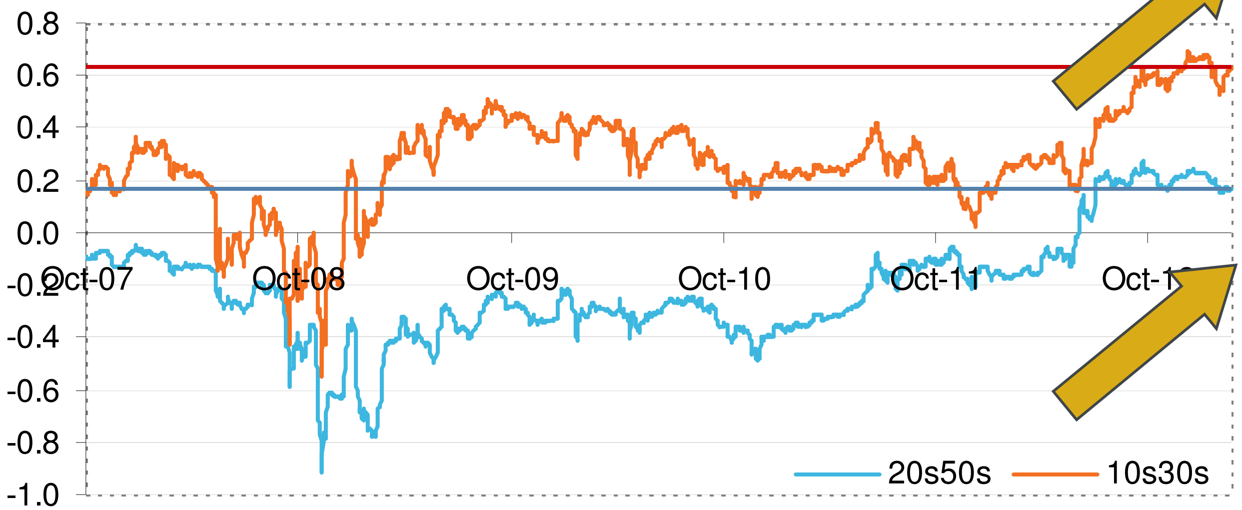
Dutch leading the charge

$$fwd^{SW}_{t-1,t} = (1 - w(t))\ fwd_{t-1,t} + w(t)\ UFR$$



Source:
Academic Community
Comments on CP-12-003
Draft Tech Specs on QIS QIORP II



Source: RBS

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Any questions?

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The views expressed in this presentation are those of the presenters

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