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Gilts V's Swaps – What's Going On?

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16 February 2017

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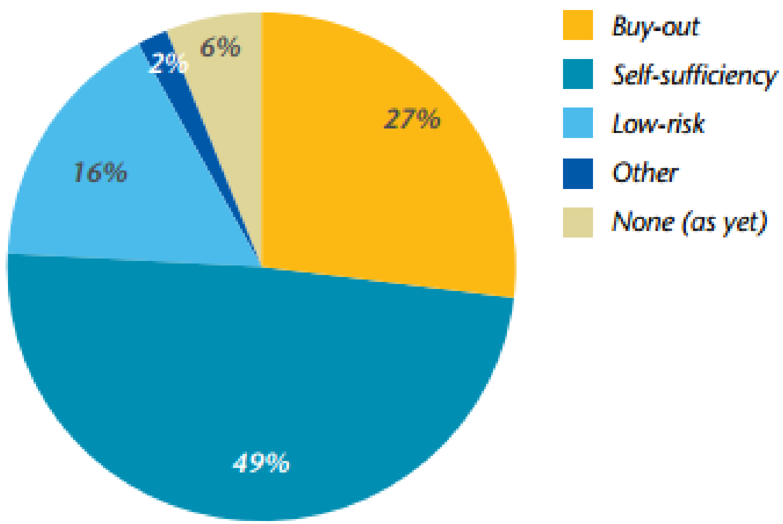
Set Clear Objectives

If one does not know to which port one sails, no wind is favourable
- Seneca

Chart 5 – Long-term objectives

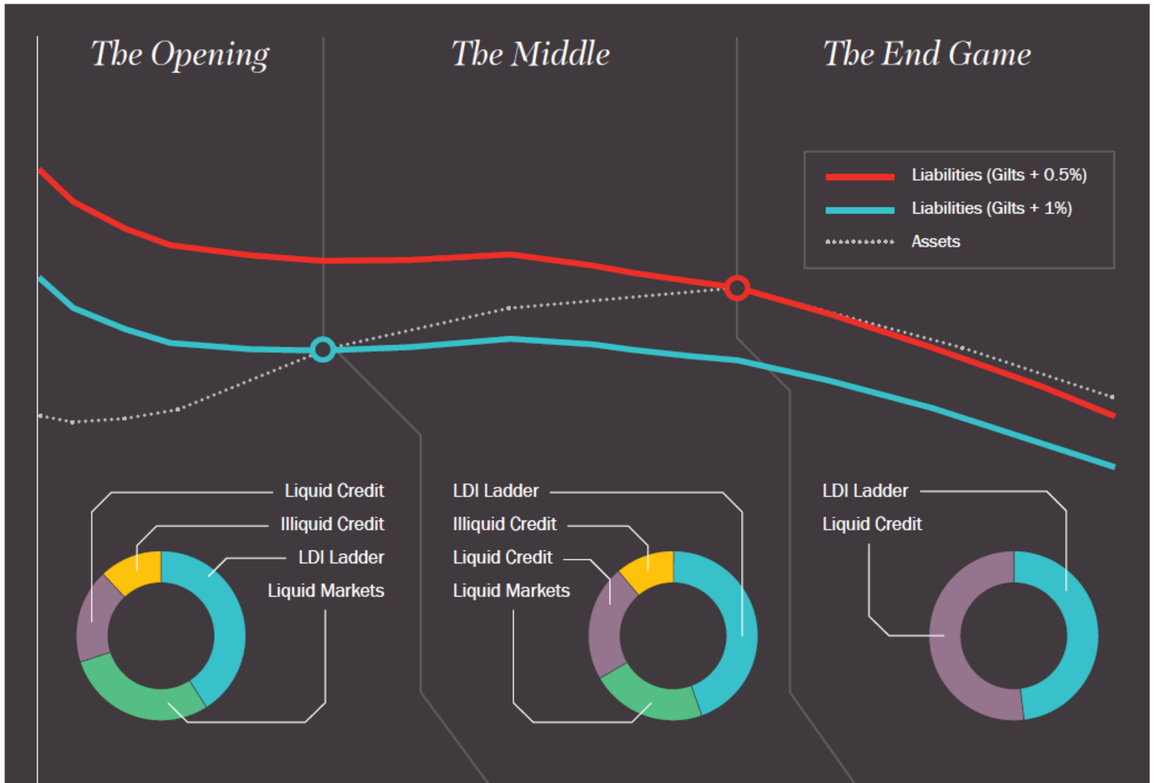


Source: AoN Hewitt Global Pension Risk Survey 2015

THE 3 STAGES OF A PENSION SCHEME

AS IN CHESS, THE KEY TO A SUCCESSFUL OUTCOME BEGINS WITH THE END GAME IN MIND.

Understanding which stage a scheme is in helps across a range of decisions faced by trustees and sponsors, from setting investment strategy and risk management to sponsor contribution negotiations and assessing insurance solutions.

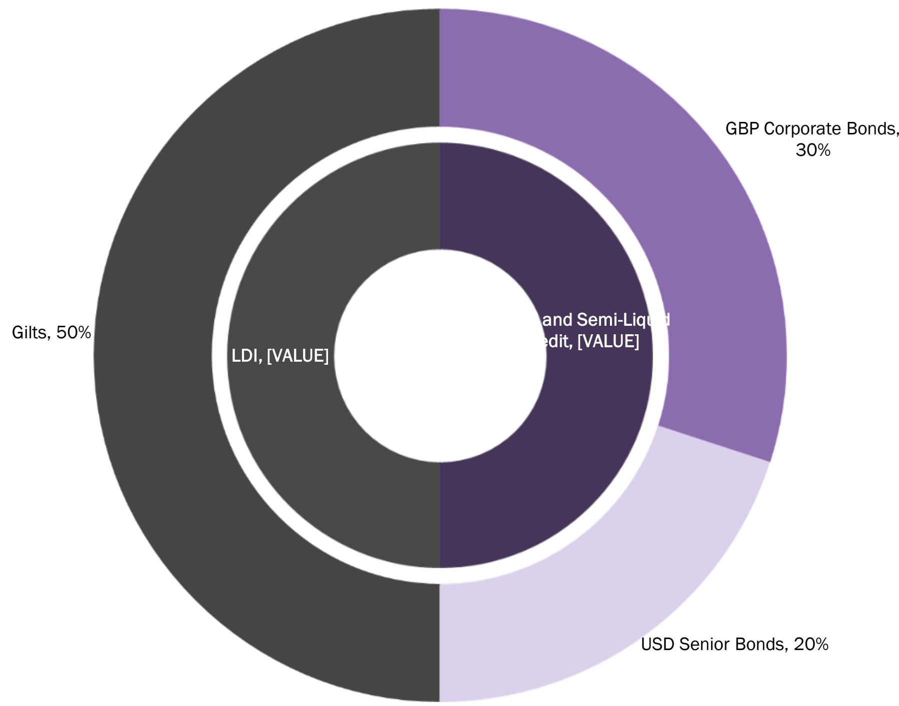


REQUIRED RETURN	GILTS + 2.5% OR HIGHER	GILTS + 1.5% TO 2.5%	GILTS + 1.5% OR LOWER
% OF UK SCHEMES*	50%	25%	25%

Source: Redington, The Pensions Regulator

* Estimate based on The Pensions Regulator data and Redington ALM Modelling, assumes 2030 full funding target on buy-out liability basis to calculate required return

Example asset allocation under a Self-sufficiency target



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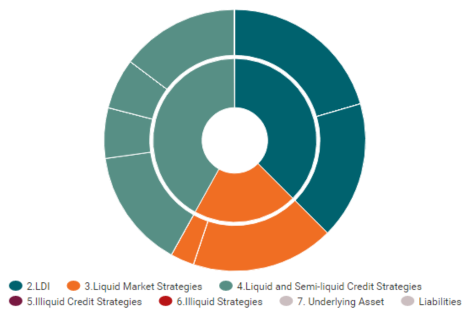
FUNDING RATIO



Assets
650m

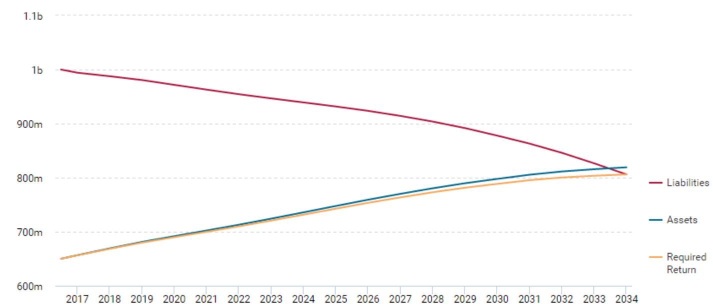
Liabilities
-1,000m

Deficit
350m

PENSION RISK MANAGEMENT FRAMEWORK

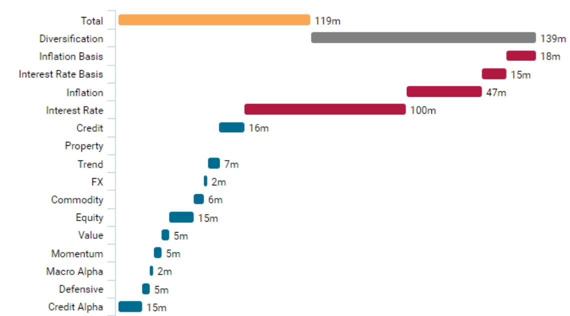
	Current	Strategy 1	Strategy 2	Strategy 3
Required Return 2.2%	2.3%	2.5%	2.5%	2.9%
Risk Budget - VaR (m) 50	119	121	124	128
Target Hedge - Interest Rate 65.0%	65.0%	65.0%	65.0%	65.0%
Collateral Buffer (m) VaR	118	123	118	123

FLIGHT PATH - CURRENT



TARGET FUNDING DATE: **2033** VARIABLE CONTRIBUTION: **5,700,000**

RISK REPORT - CURRENT



Undiversified
259m

Diversification
139m

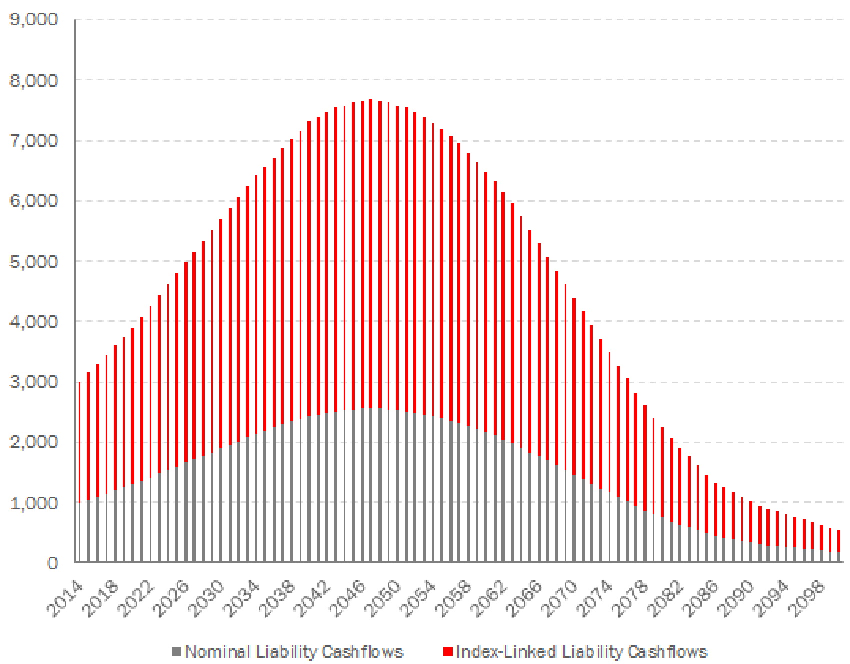
Total risk
119m

What is an LDI benchmark?

- A benchmark is comprised of zero coupon cash flows that replicate the interest rate and inflation sensitivities of the liabilities that LVEPS want to hedge

- A key aspect of the benchmark is that a valuation methodology is agreed with respect to inflation projections and nominal discounting of the benchmark cash flows

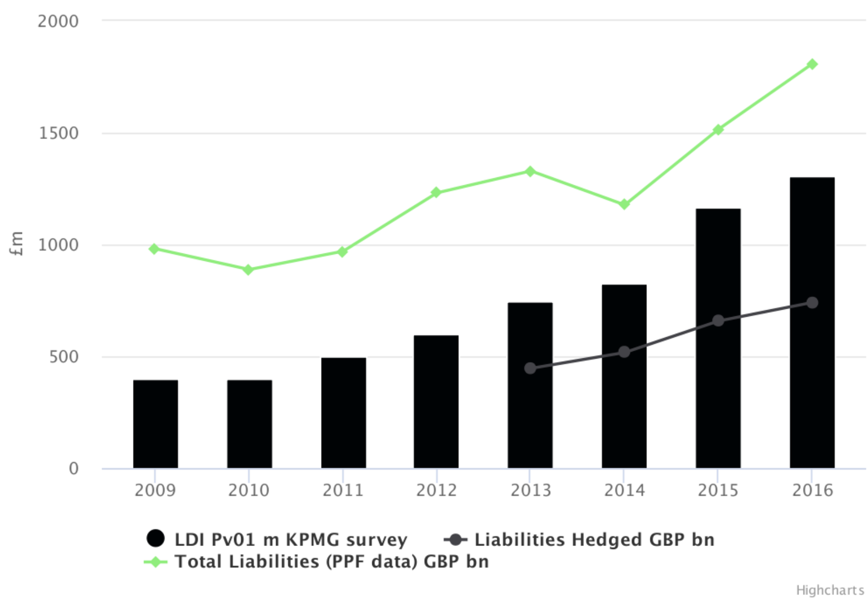
Liability cash flows

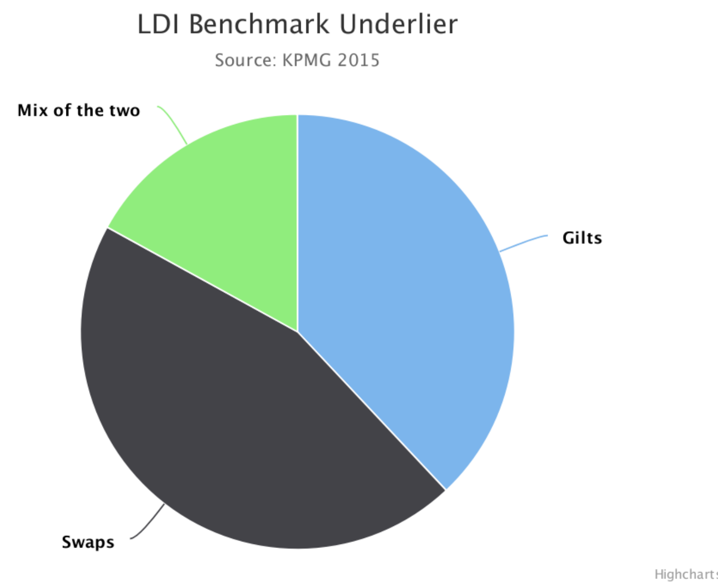


LDI benchmark

Tenor Bucket	PV01/IE01 (GBP Thousands)	
	Liabilities	LDI benchmark
0 – 5	50	50
6 – 10	60	60
11 – 15	70	70
16 – 20	100	100
21 – 25	150	150
26 – 30	100	100
31 – 35	50	50
36 – 40	40	40
41+	10	10
	630	630

The Growth of LDI



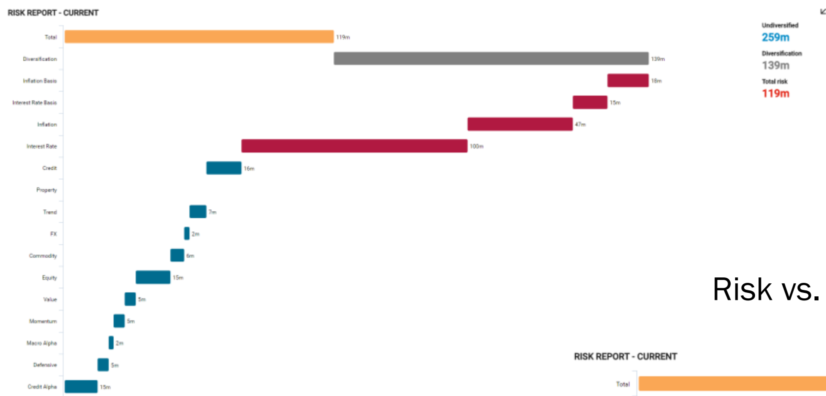


Gilts vs Swaps – what's the difference?

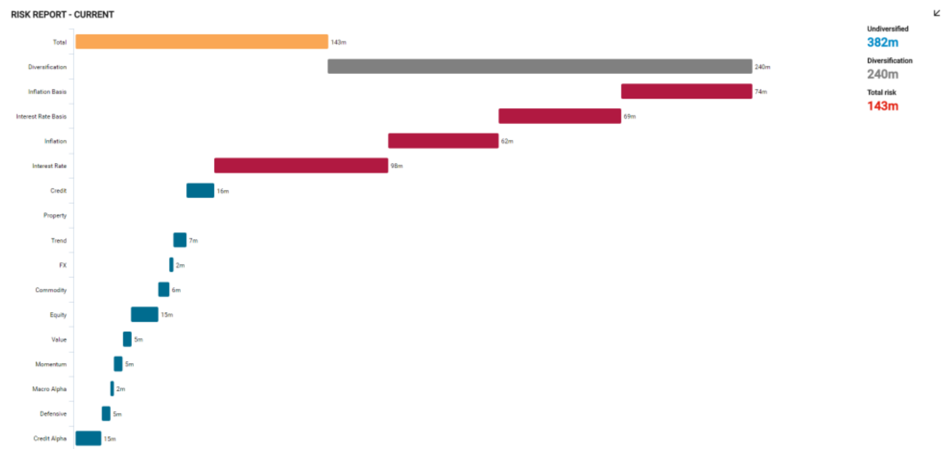
Gilt – funded instrument, coupons and return of principal, UK government risk, value = amount gilt bought for

Swap – unfunded instrument, fixed for floating flows, rolling 6m bank deposit risk as proxy, value zero at issue

Risk vs. Swaps



Risk vs. Gilts



What if a Scheme Switched Objectives Tomorrow?

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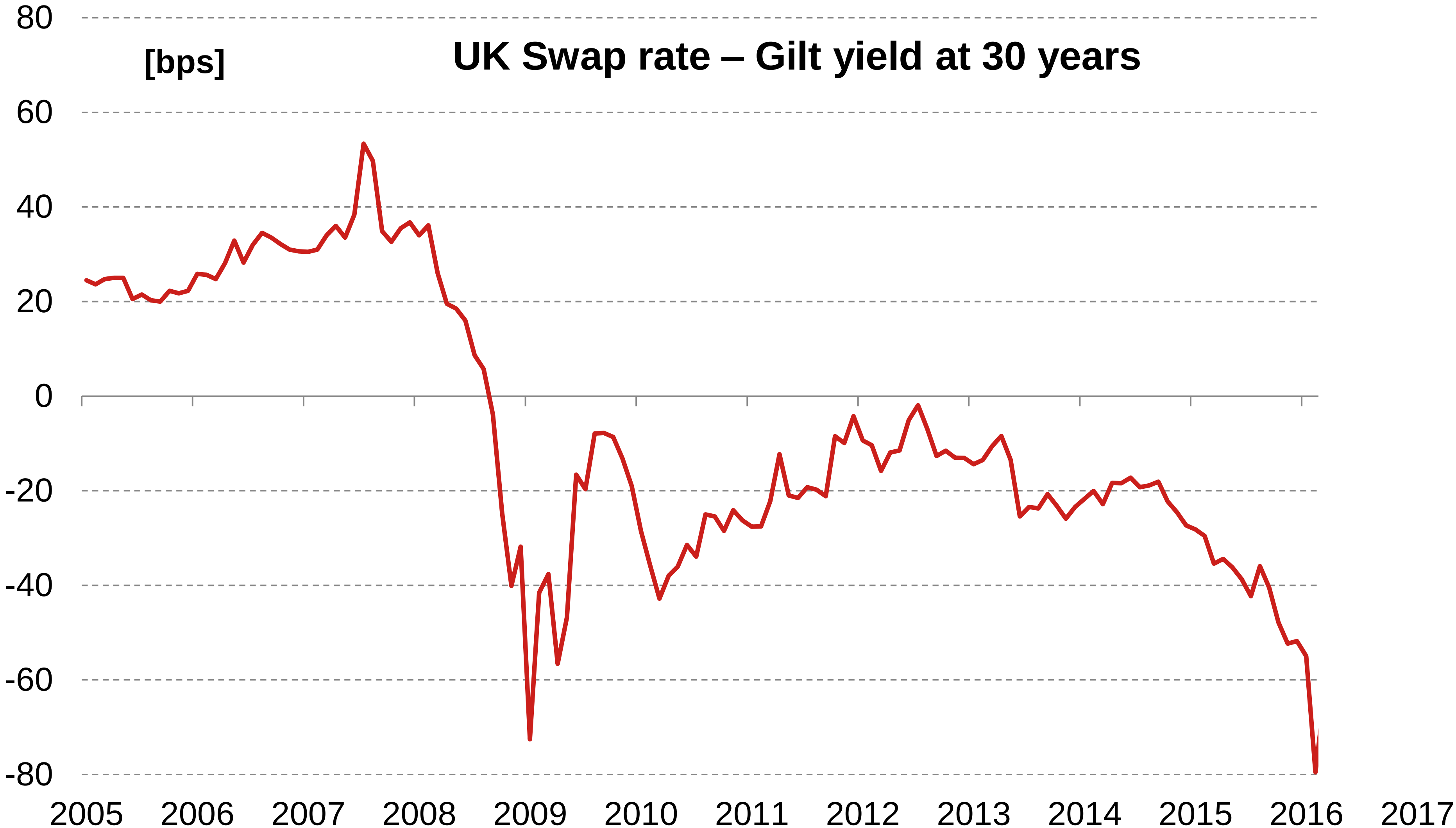
Factor	Implications of moving from Buy out to Self-Sufficiency
Discount rate	Liabilities discounted on gilts basis – aim is to achieve asset portfolio generating payments for pensioners
Funding ratio	Increase in funding ratio (gilt yield > swap rate, higher discount spread)
Expected Return	Expected spread over basis instrument falls (gilt yield > swap rate)
Required Return	A lower RR might indicate immediate de-risking possible
Basis Risk	Current hedging is 75% swaps/25% gilts – so immediate increase in basis risk
Hedge Ratio	Plan now over-hedged by XX% - given that sensitivity of liabilities have reduced due to a higher discount rate
CDD1 Coverage Ratio	Lower CDD1 coverage ratio due to higher credit sensitivity of SS liabilities which means more scope to invest in long-dated credit
Liquidity	Illiquidity budget could be revisited given buy-out constraint has fallen away – LT illiquidity less of an issue (especially if CF matching)
Longevity	Hedging could be revisited given liabilities now held to last CF has been paid

**Buy-out Proxy forward incorporates 30% sensitivity to long dated sterling credit index.*
***Self-sufficiency liability incorporates 50% sensitivity to long dated sterling credit index.*

Gilts vs. swaps – what's the issue?



Source: Bloomberg

Why?

Or are the real culprits … ?

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TOTAL DERIVATIVES

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Friday, 30th October 2015.

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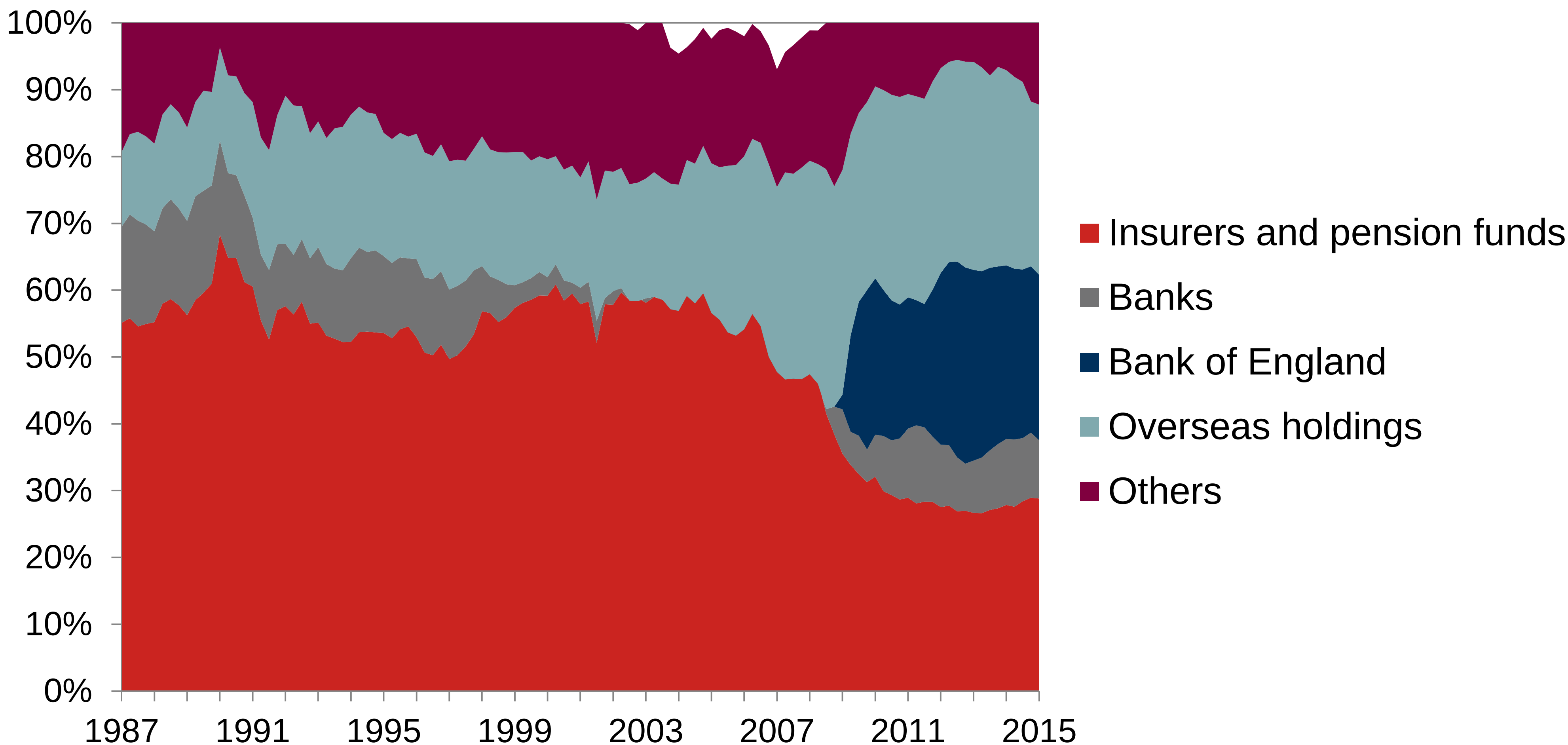
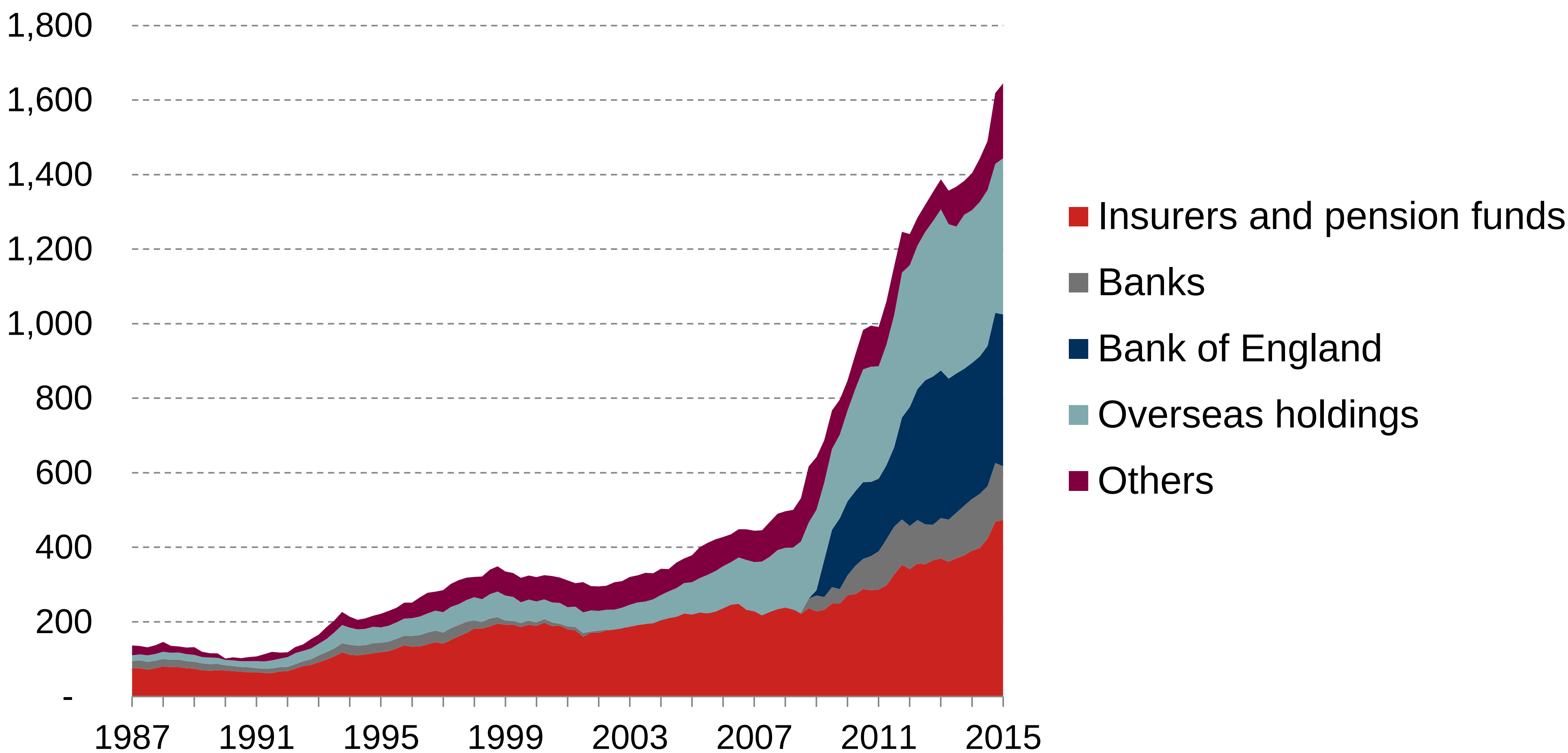
Solvency II: ASW move over, or just started?

Gilt market ownership - %



Source: DMO

Gilt market ownership - £ amounts



Source: DMO

Stating the obvious ?

	Pension funds	Life insurers Annuities	Life insurers With profits
Solvency II	No	Yes	Yes
Matching adjustment	n/a	Yes	No
Discount rate	Self-chosen (replicating portfolio)	Assets held	Gilts to swaps
Capital vs. gilt-swap risk	No	No	Yes
Inflation linked liabilities	Yes	Yes – buyout No – non-buyout	No
Conventionals (£bn)	£70bn 1)	£40bn 1)2)	£50bn 1)2)
Linkers (£bn)	£160bn 1)	£55bn 1)2)	£15bn 1)2)

Source: ONS Statistical bulletin: Investment by Insurance Companies, Pension Funds and Trusts, Quarter 2 (17 Sep 2015) 2) split approx per Nomura analysis

Evolution of the "risk-free" rate

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	Pre crisis	Solvency I - post crisis	Naive Solvency II	Final Solvency II
Choice of "risk-free"	Not material	Gilts	Swaps	Swaps + VA - CRA
Physical matching assets	Gilts	Gilts	Gilts + reverse spreadlock / cash (Libor) + swaps	Blend of gilts, supras and swaps + cash
Hedge overlay	Swaps	Swaps + spreadlocks / gilt TRS	Swaps	Blend of swaps + gilts/supra TRS

But was the “naive” view right all along?

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December 2014

Consultation

CP-14-042 Consultation paper on a Technical document regarding the risk free interest rate term structure

March 2015 (confirmed July 2015)

Consultation Paper | CP14/15

Solvency II: treatment of sovereign debt in internal models

March 2015

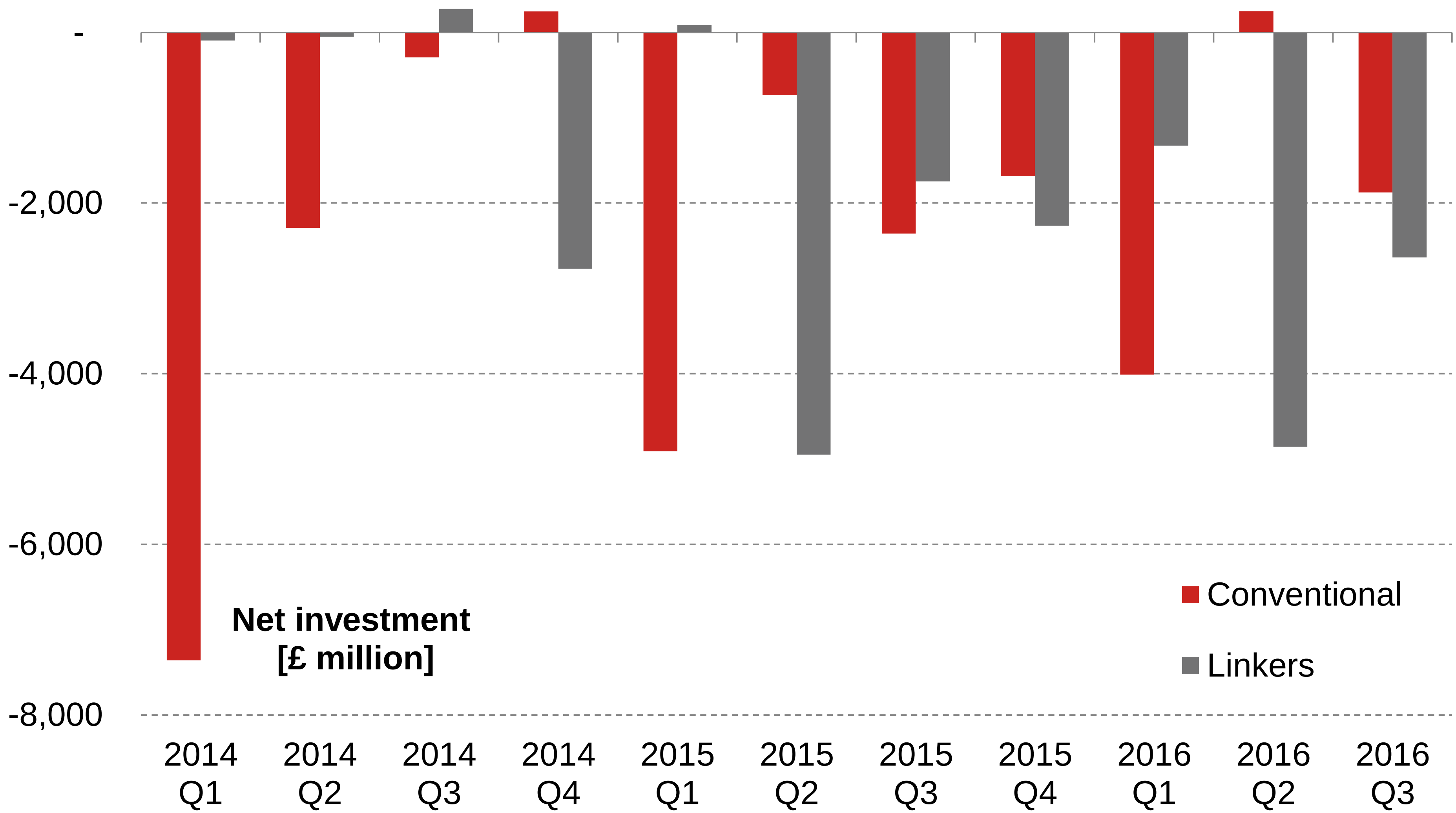
June 2015

BANK OF ENGLAND
PRUDENTIAL REGULATION AUTHORITY

Volatility adjustment in the modelling of market and credit risk stresses

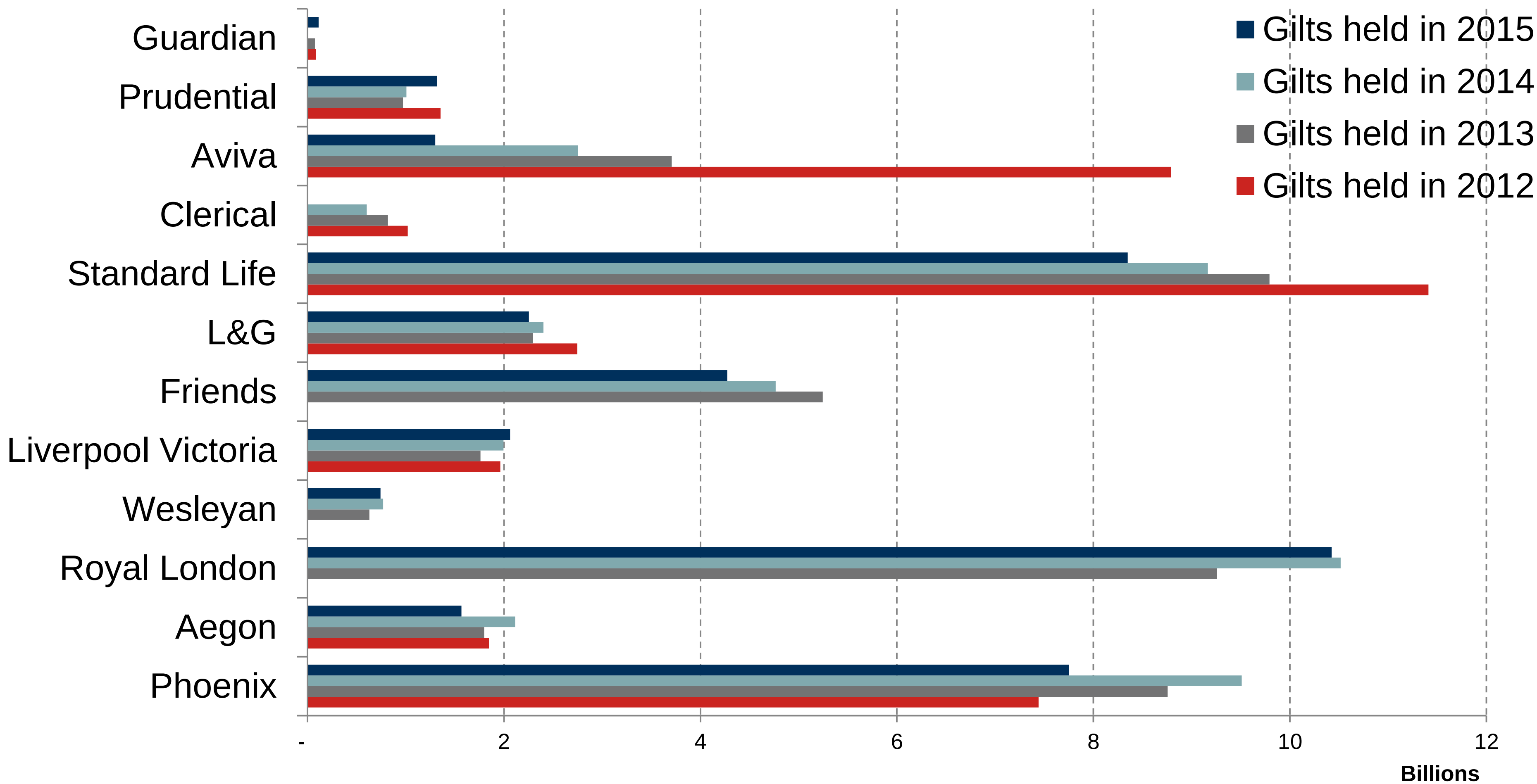
Source: Bank of England / PRA, EIOPA

So did this cause mass selling?



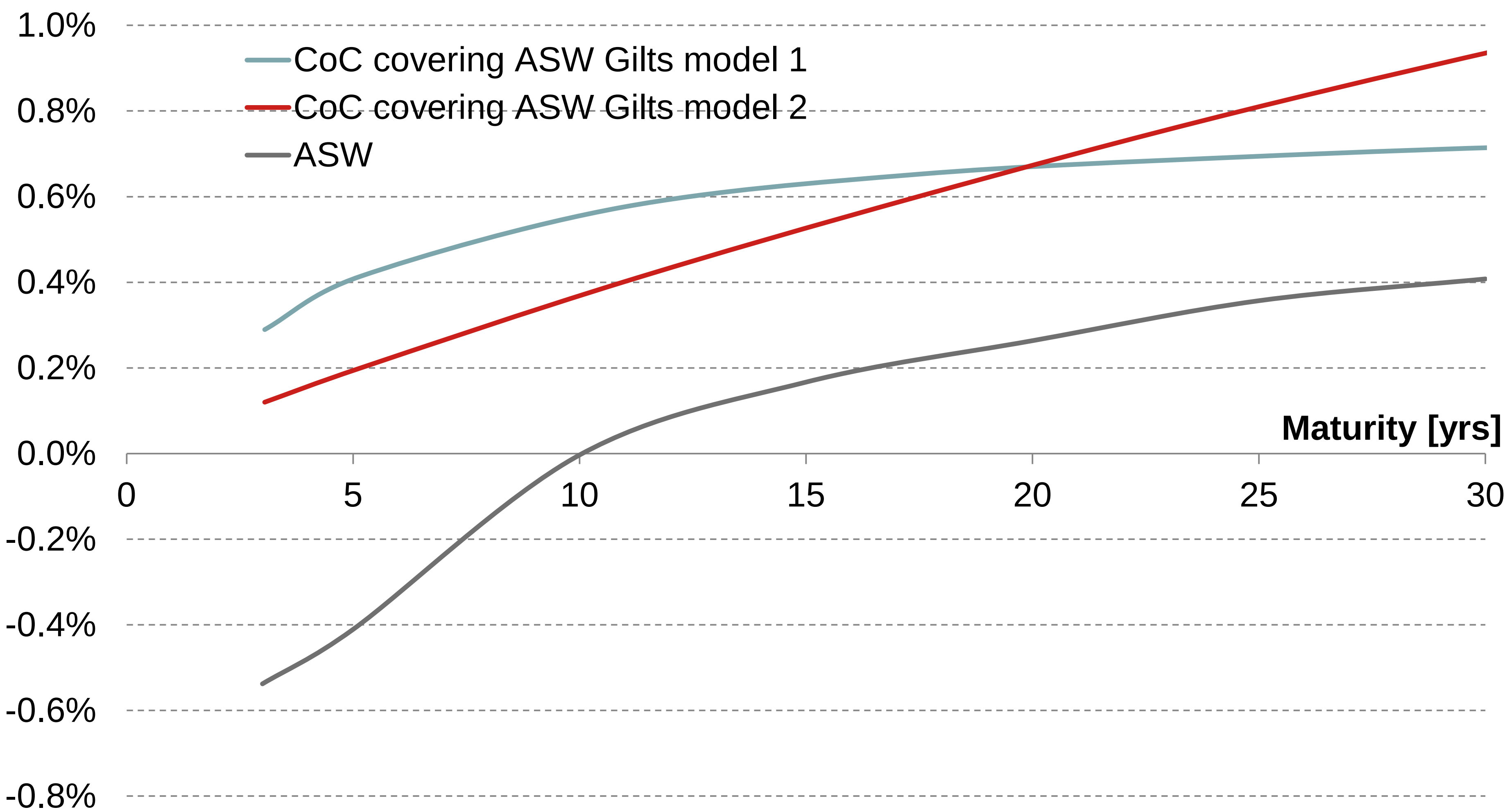
Source: ONS http://www.ons.gov.uk/economy/investmentspensionsandtrusts/datasets/investmentbyinsurancecompaniespensionfundsandtrusts

The possible culprits



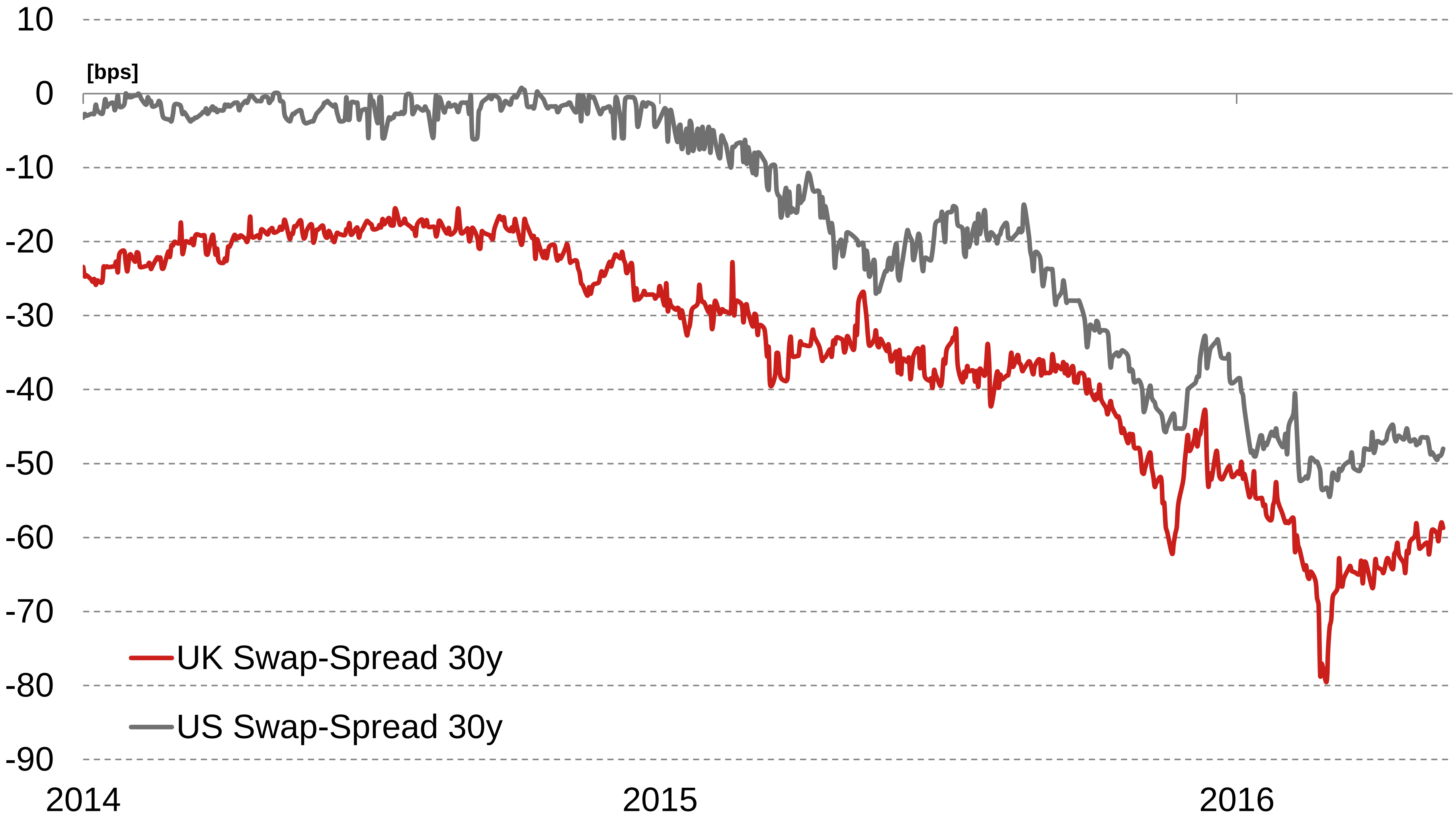
Source: PRA Returns

When is a gilt an attractive RoCE asset



Source: Nomura

But was it really Solvency II



Source: Bloomberg

Cash and swaps now different things

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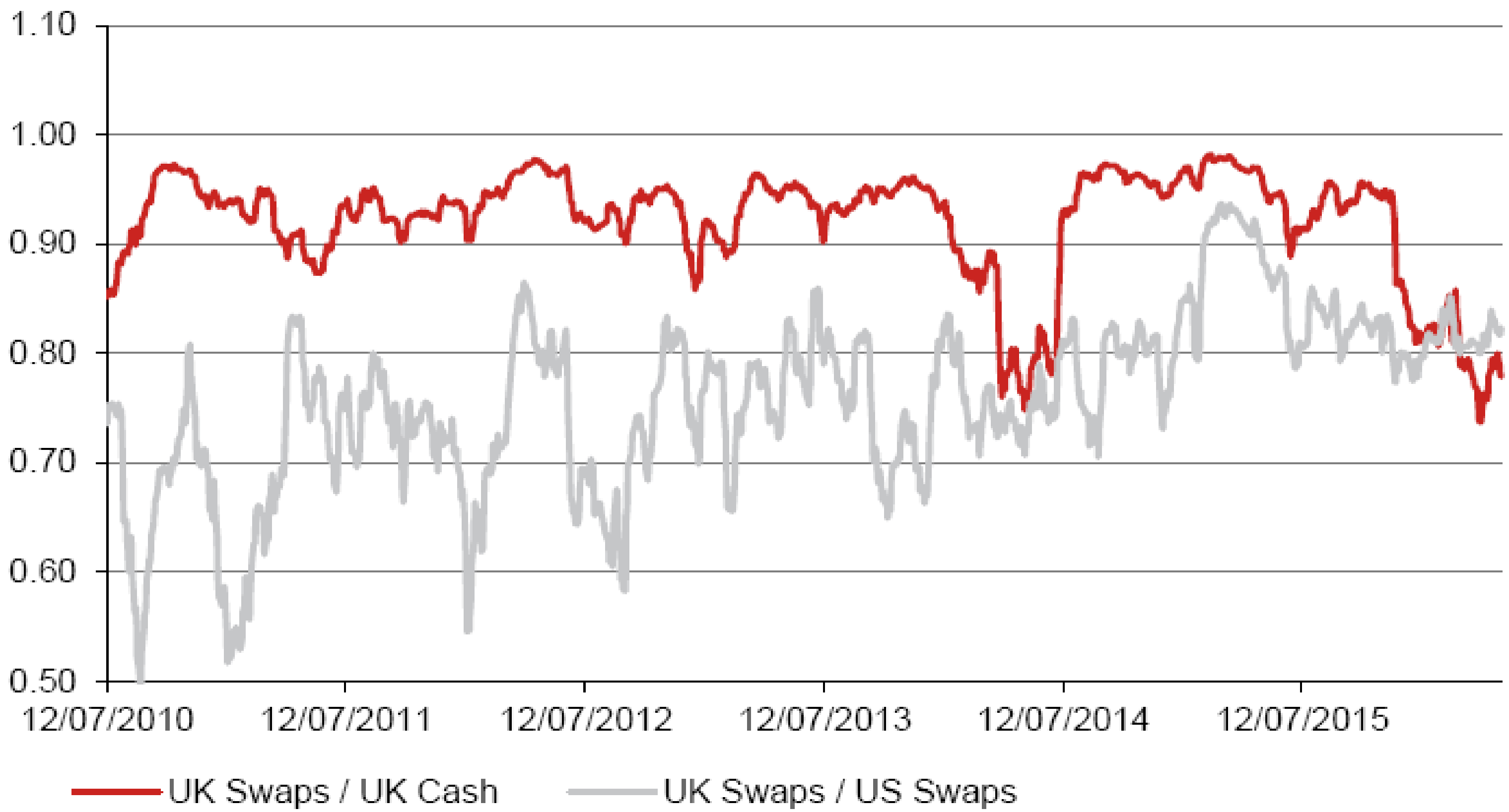
Fig. 1: Rolling 60-day correlation of 5-day moves

30y UK swaps now more correlated to 30y US swaps than 30y UK cash



Source: Nomura

Drivers of swap spreads

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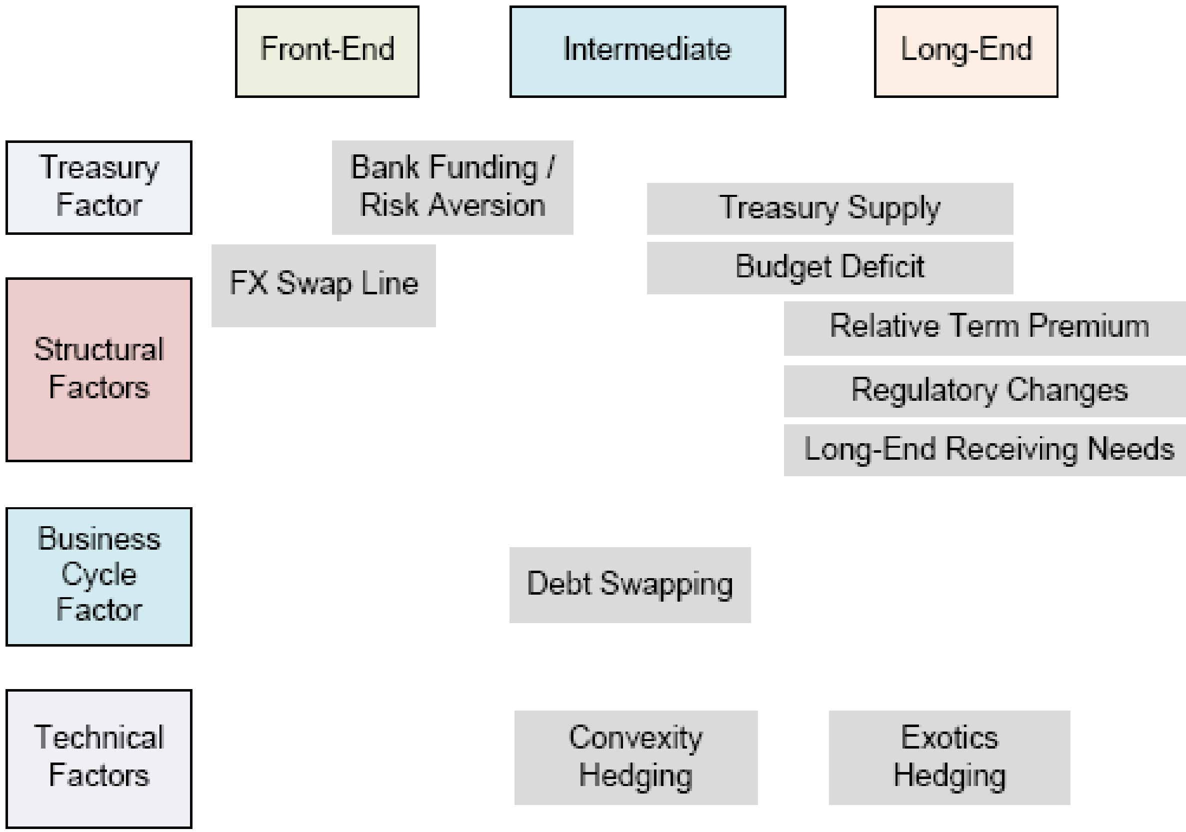
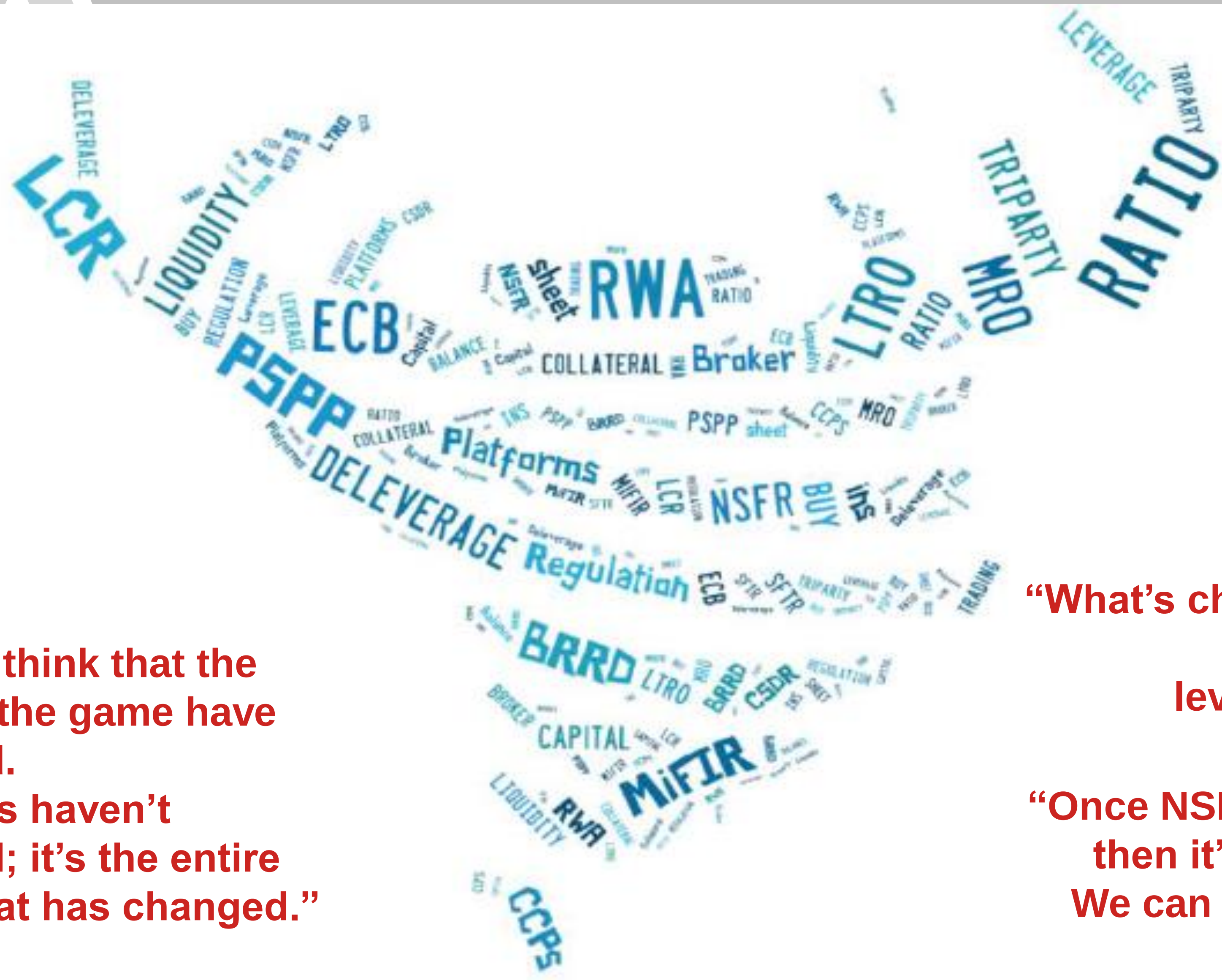
Fig. 4: Drivers of Swap Spreads



Source: Nomura

Perspectives from the eye of the storm

(International Capital Markets Association)



"People think that the rules of the game have changed.
The rules haven't changed; it's the entire game that has changed."

"What's changed? Two words: leverage ratio."

"Once NSFR comes in, then it's game over. We can all go home"

Source: CGFS Paper No 52 "Market making and proprietary trading: industry trends, drivers and policy implications"

Implications

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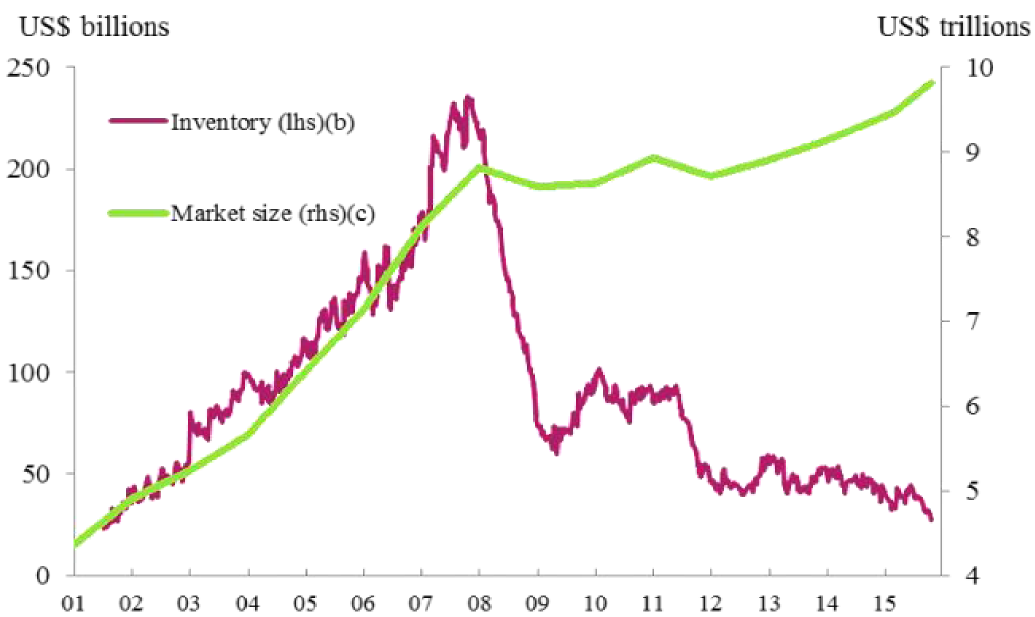
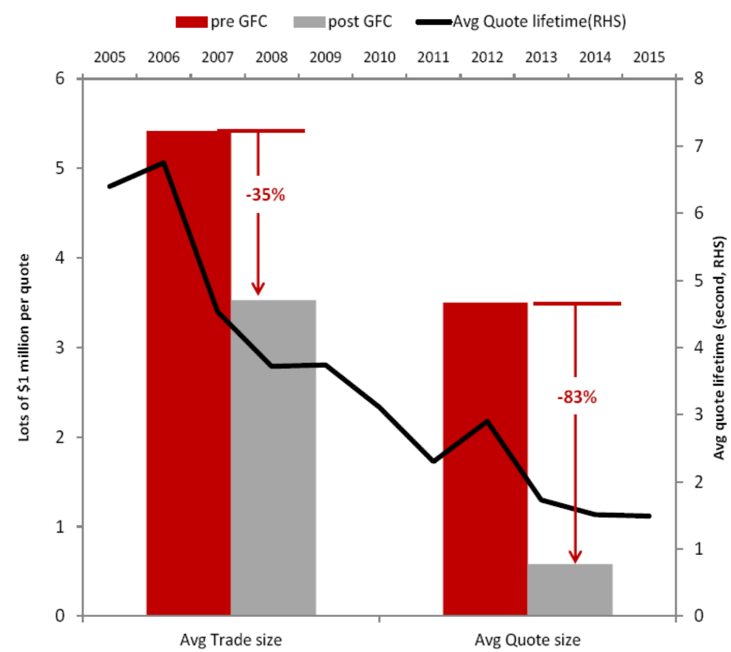
Falling inventory



Reduced liquidity



Source: Nomura, BIS

"Although liquidity may on average be higher, the risk that liquidity may not be available when it is needed most has also risen."

"A reduction in banks and non-banks' ability and willingness to put capital at risk in the face of large scale order flow imbalances"

Source: CGFS Paper No 52 "Market making and proprietary trading: industry trends, drivers and policy implications"
Bank of England Deputy Governor speech, Dealing with change: Liquidity in evolving market structures, Oct 2015

Other “distorted” markets

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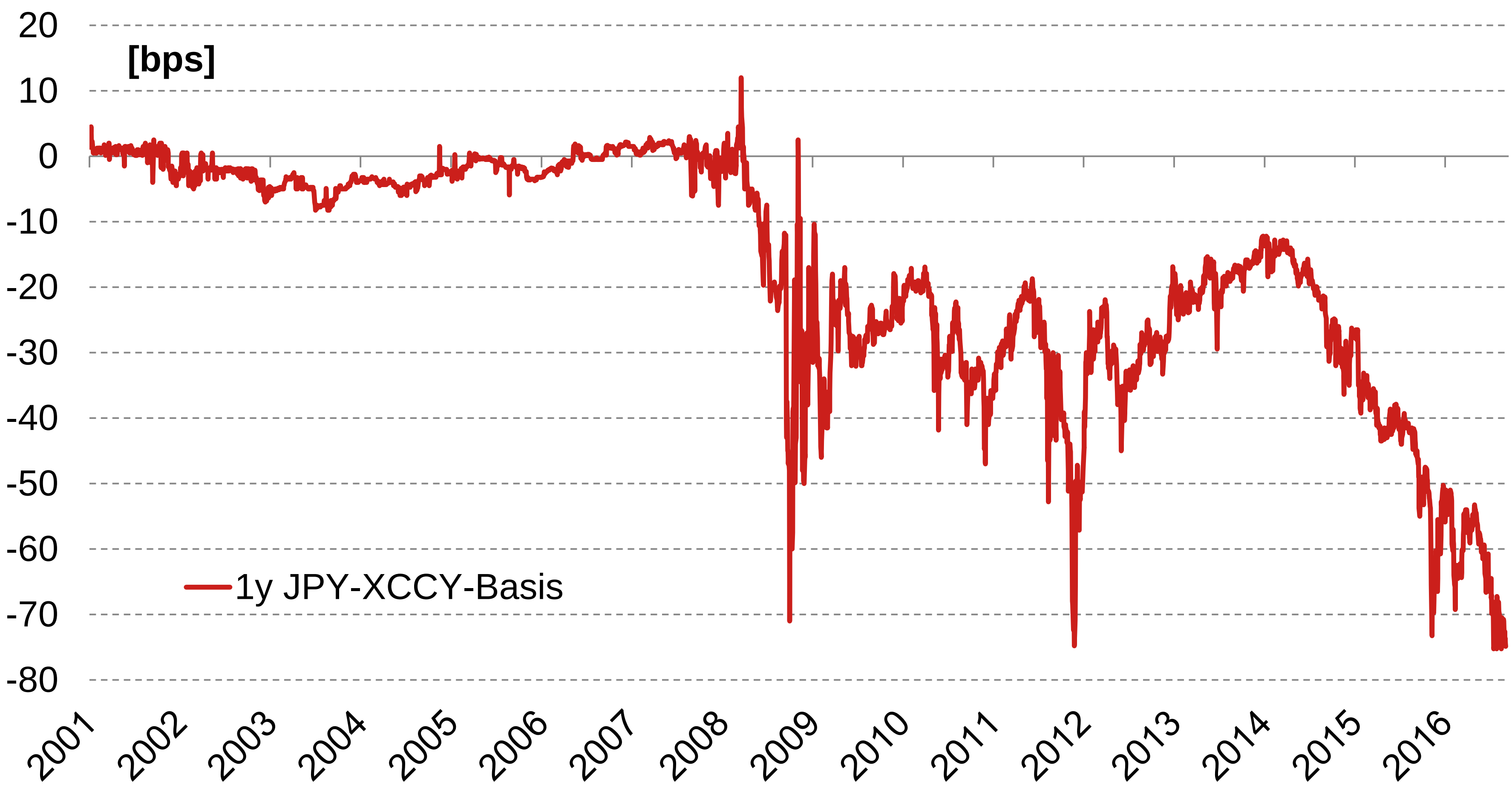
“Covered interest parity verges on a physical law in international finance. And yet it has been systematically violated since the Great Financial Crisis”
BIS Quarterly Review, September 2016



Source: Bloomberg

And other arbitrageurs

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Companies turn arbitrage traders

How companies are exploiting market dislocations as banks pull back

"As changes to regulation lead banks to retreat from market-making — as well as using their extensive balance sheets to trade on their own behalf — the job of taking advantage of arbitrages and market dislocations increasingly falls to corporate borrowers."

For insurers / pension funds …

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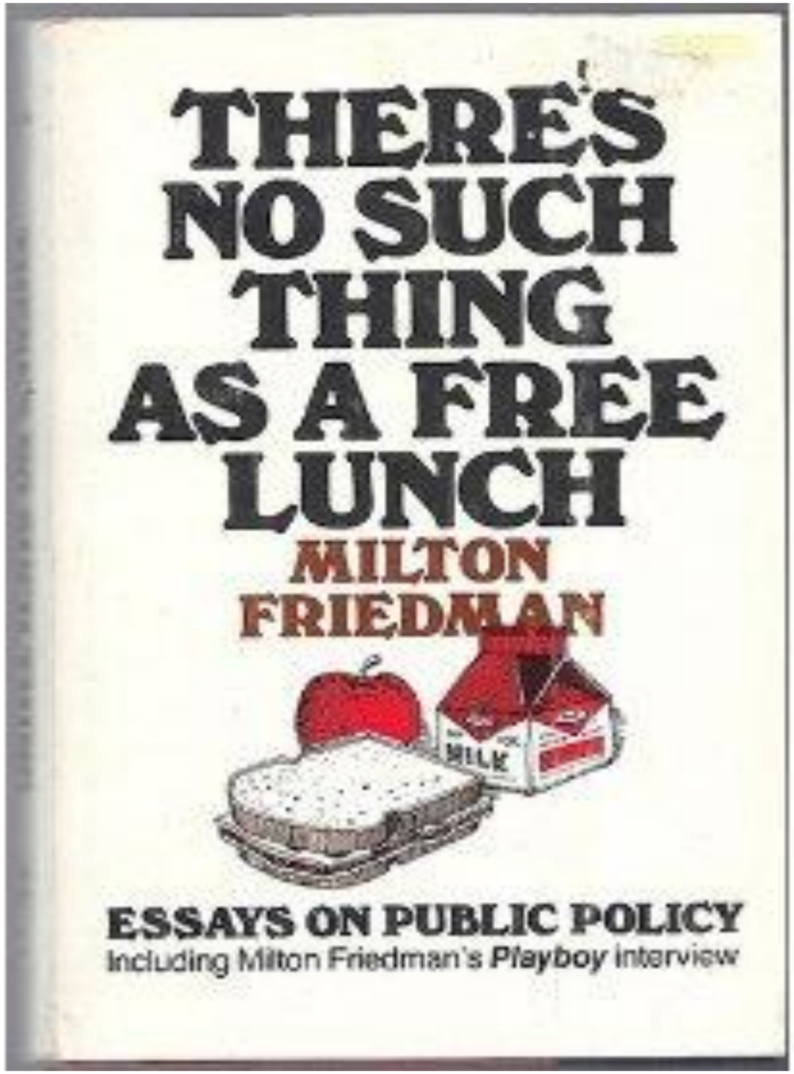
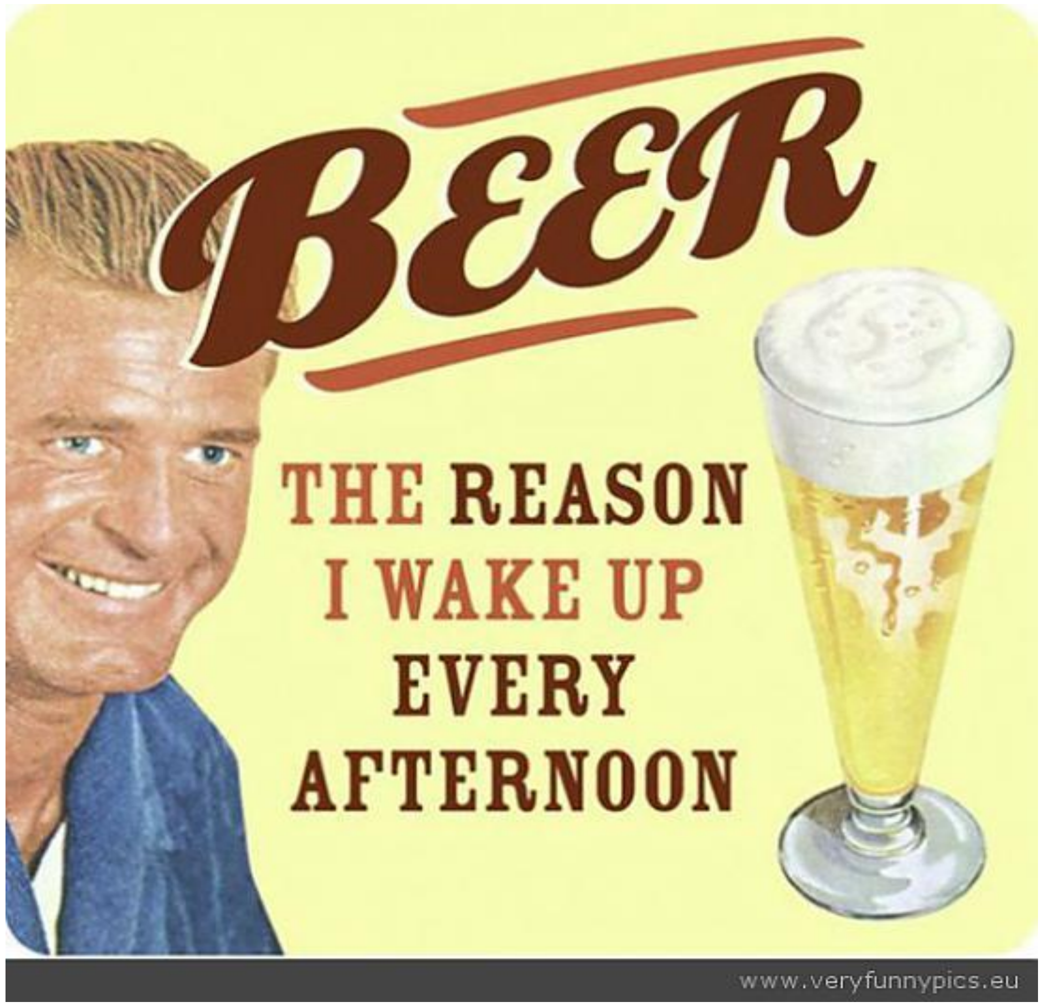


… unless it's a liquidity lunch?



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