Institute
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FX of Solvency II

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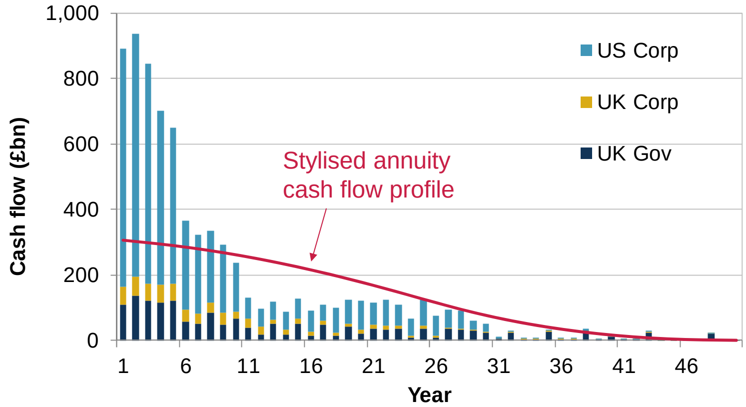
29 November 2017

Agenda

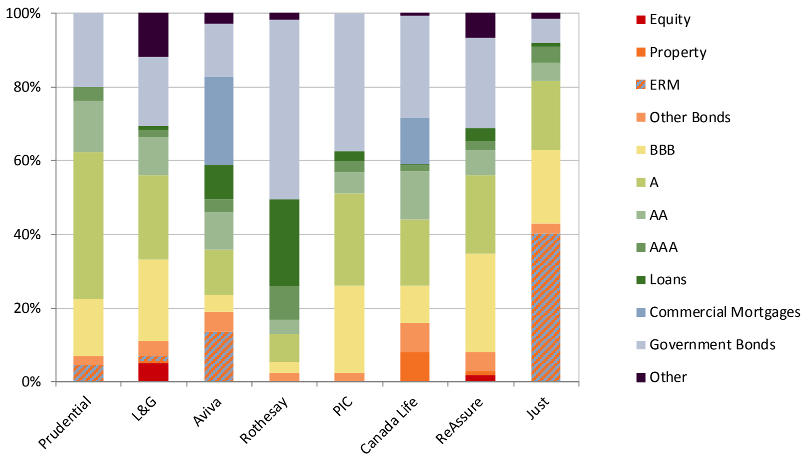
- **Fixed Income FX Hedging:** an overview
- **Regulatory Context:** Matching Adjustment and the Fisher letters
- **Matching Adjustment:** what have annuity writers done so far?
- **Collateral Damage:** liquidity management

Introduction | Asset Availability



Source: Bloomberg, NWM

Introduction | Asset Allocation



Source: SFCRs, Annual Reports

Regulatory Context

29 November 2017

Regulatory Context | Matching Adjustment

Article 77b

Assets must be **bond-like** with **cash flows** that:

- …materially **replicate** the expected cash flows of the **liabilities**
- …are **fixed** (at portfolio level), not simply "very predictable**"**

15 Oct 2014

Article 77b(1)(c) requires that the expected cash flows of the assigned portfolio of assets replicate each of the expected liability cash flows in the same currency. The PRA does not consider that this necessitates individual assets being denominated in a particular currency, provided that replication can be demonstrated by considering the cash flows of assets in aggregate.

Source: Solvency II Directive, PRA

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Regulatory Context | Matching Adjustment

28 Mar 2015

The PRA's view is that the paired/grouped assets that result from using **FX forwards** to hedge non-sterling bond exposures **do not provide fixed cash flows**

The PRA is **not persuaded** that the **rolling of the forwards** on expiry, combined with the **purchasing/selling of the underlying bonds** (i.e. rebalancing), together produce fixed cash flows **over the full duration** of the bond

Source: PRA

Regulatory Context | Matching Adjustment

28 Mar 2015

The PRA notes that some other strategies to hedge currency exposure, and specifically the use of significantly **longer-dated cross currency swaps**, would be more consistent with the MA eligibility criteria

Firms currently using FX forwards in their MA portfolio should explore **longer-dated cross currency swaps** or other approaches including **portfolio restructures**

Source: PRA

Currency risk is included in the PRA's 99.5th percentile VaR **cash flow test**

Matching Adjustment

Matching Adjustment | Solutions to-date

What have firms done so far?

	FX Forwards	Resettable XCCY Swap	XCCY Swap	XCCY Swap with Initial Margin	SPV Repack
MA Eligible	No*	?	Yes	Yes	?
Liquidity Considerations	Yes	Yes	Yes	No	No

Increasing certainty / initial cost

Matching Adjustment | Solutions to-date

What have firms done so far?

L&G FX Structuring SPV Ltd:

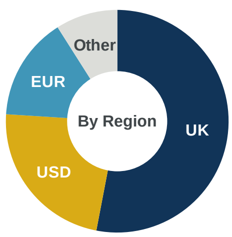
- **"Hedging Transaction"** …including, without limitation, any **interest rate** of **cross-currency swap** or **foreign exchange** transaction for **spot** or **forward** delivery…
- **"Investment Management Arrangement"** …dated 5 October 2015
- **"Investment Manager" …**Legal & General Investment Management Limited…

Source: L&G FX Structuring SPV Ltd. Registration of charge, 03-Dec-2015

Matching Adjustment | Solutions to-date

What have firms done so far?

L&G Retirement (HY16):



L&G Pensions Ltd.

	GBP	EUR	USD
YE14	35.1bn	0.7bn	11.3bn
YE15	1.4bn	0.0bn	0.0bn

L&G FX Structuring (SPV) Ltd.

	GBP	EUR	USD
YE15	1.4bn	0.0bn	4.8bn
YE16	2.8bn	0.0bn	2.6bn

Source: L&G Accounts, Capital Markets Presentation

Matching Adjustment | Solutions to-date

- **XCCY swaps**: are they expensive?
- What **cost** should you attribute to **liquidity needs** associated with potential future **margin calls**?
- If firms **can't** answer these questions, can they invest overseas?
- If firms **don't** invest overseas, can they expect to remain **competitive**?

Collateral Damage

Managing Liquidity | Sources and Uses

Sources

- Cash
- Gov't bonds / repo
- Collateral upgrade
- Revolving credit facility
- Conditional collateral facility

Uses

- Operating out flows
- Dividends and financing costs
- Derivative margin calls
- Central clearing / cash CSAs
- Matching Adjustment

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Collateral Damage | Matching Adjustment

15 Oct 2014

"Stronger [MA pre-app] **liquidity plans** included":

- **definition** of liquidity risk
- monitoring tools, including **stress and scenario testing**
- **cash flow forecasts**
- interaction with wider **liquidity management framework**

Source: PRA

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Collateral Damage | Matching Adjustment

28 Mar 2015

Liquidity **can** be managed at **entity level**, but processes that ensure that there is **sufficient liquidity** available in the MA portfolio, taking account of any lack of fungibility, should be **clearly demonstrated.**

The PRA **does not** consider it appropriate for:

- an MA portfolio to **post** collateral in respect of business outside of that MA portfolio
- collateral **received** in respect of MA business to be managed **jointly** with collateral received in respect of **other portfolios**

Source: PRA

Collateral Damage | Matching Adjustment

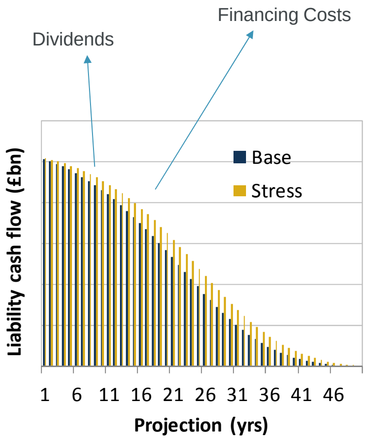
01 Jun 2015

Management of **collateral arrangements** should **not** undermine the requirement for MA portfolios to be "**identified**, **organised** and **managed separately** from the firm's other activities"

Requirements on the MA portfolio resulting from **collateral** or **other arrangements** that **restrict** the type of assets that can be **posted** as collateral could restrict firms' ability to **extract surplus** or to use those assets to meet **other MA liabilities**

Source: PRA

Managing Liquidity | Traditional Exposures



- Historically, insurer liquidity evaluation has focussed on **asset vs. liability cash flows**
- **Rating agency methodology** might focus on asset vs. liability cash flows **under stress**
- MA **cash flow tests** effectively cover this off
- For some products, **lapses** can present a liquidity risk

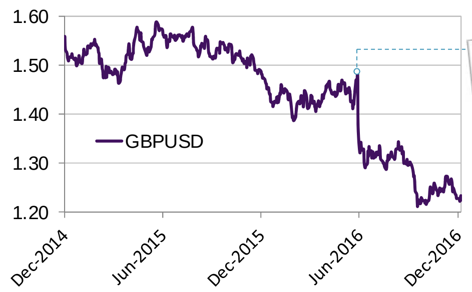
Managing Liquidity | Contingent Exposures

Does anyone have a **liquidity problem** at the moment?

Source: Neil's iPhone

Managing Liquidity | Contingent Exposures

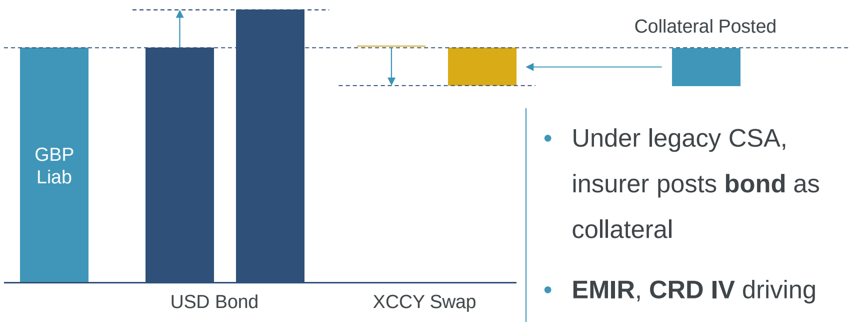
Liquidity issues typically arise at times of **stress**:



- Holding **cash buffers** under normal conditions may be **overly prudent**
- Focus should be given to the **drivers** of your liquidity needs

Source: iBoxx, Bloomberg, NWM

Managing Liquidity | Contingent Exposures



- Under legacy CSA, insurer posts **bond** as collateral
- **EMIR**, **CRD IV** driving move toward **cash-only** CSAs

Cost of collateral analysis is similar to banks' **Funding Valuation Adjustment**

Summary

Summary

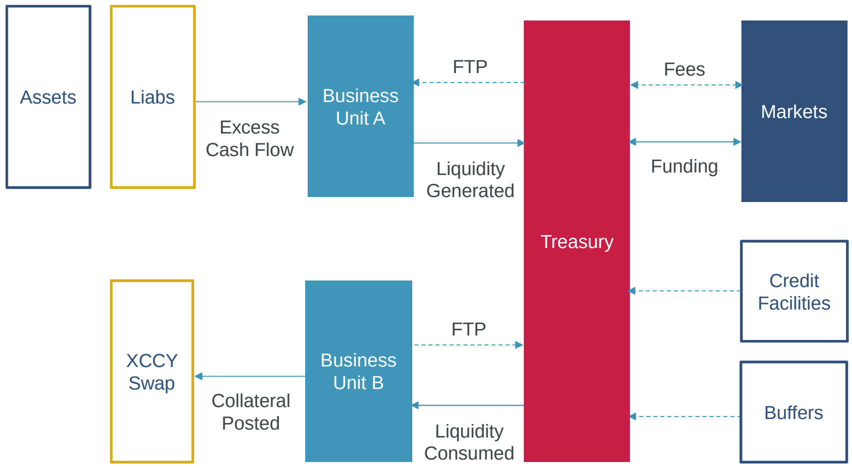
- **Annuity writers** will need access to **alternative credit** and **global investments markets** in order to remain competitive
- **Specialist expertise** may be required to manage **FX exposures**
- Particular focus must be paid to **residual risks** and **conditional liquidity risks** introduced by your hedging strategy
- Optimising **liquidity management frameworks** is key to reducing "**collateral drag**"

Questions

Comments

Appendix

Managing Liquidity | Treasury Model



Managing Liquidity | Treasury Model

Funds Transfer Pricing (FTP)

- BUs **buy** / **sell** liquidity from central Treasury
- Identifies BUs that **generate** and those that **consume** liquidity

Treasury

- Charges BUs for cost of centrally held **liquidity buffers** (via FTP)
- Access to **revolving credit facilities** (RCFs)
- Controls group net funding requirement: **sourced from** / **lent into** market – could be **contingent** on **specific exposures**

Managing Liquidity | Banks

- **Liquidity** is arguably the **biggest** risk that banks face
- How much liquidity to hold **centrally**?
- Two **regulatory** metrics:

1. **Liquidity Coverage Ratio (LCR)** $= \dfrac{\text{High Quality Liquid Assets (HQLA)}}{\text{30-day Net Cash Outflows}}$

2. **Net Stable Funding Ratio (LCR)** $= \dfrac{\text{Available Stable Funding}}{\text{Required Stable Funding}}$

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Managing Liquidity | NSFR Example Weights

Asset	Maturity	RSF Factor
Residential mortgages	> 1 year	65%
Corporate loans	> 1 year	85%
AAA-AA Corporate bonds	All (unencumbered)	15%
A-BBB Corporate bonds	All (unencumbered)	50%

Liability	Maturity	ASF Factor
Retail deposits	< 1 year	90-95%
Regulatory capital	All, excl. <1Y Tier 2	100%
Funding / Other capital	< 1 year	0-50%
Funding / Other capital	> 1 year	100%

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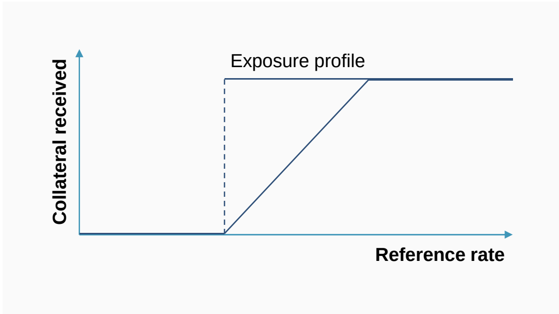
Managing Liquidity | Conditional Liquidity Solutions

1. **Trigger**
2. **Notional**
3. **Collateral**
4. **Documentation**
5. **Tenor**



- How does the **cost** of a **conditional liquidity solution** compare with FTP?