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Liquidity Premiums Where to Post Solvency II?

Liquidity Premiums Working Party

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13 May 2014



Agenda

- Background
 - Analysis of Crisis
 - Learning Points
 - Liquidity Premium & Liabilities
- Solvency II
 - Evolution of the Liquidity Premium
 - Matching Adjustment
 - Implications –Investment Strategy ,Capital & Solvency
 - Challenges
- Where do we go from here ?



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Background

- Liquidity Premium-additional spread over reference yield curve to obtain Market Prices
- Arguably a long held key assumption of UK insurers business model
- Supporting insurers as providers of long term funding
- Generating consumer value in provision of annuities
- Relatively small in stable markets
- Increased importance since financial crisis



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Background

- Increase in yields – what was due to
 - a) default expectations & b) Liquidity Premium
- Possibly controversial in liability determination - historic debates on Market Consistency
- Was critical for life companies to determine LP to support valuation

But now

- We have the experience of crisis to further inform debate
- Still a lot at stake in SII implementation

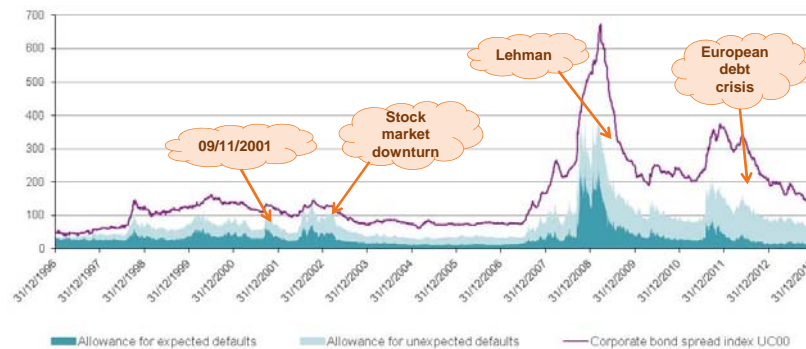


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Liquidity Premium in the Financial crisis

Corporate bond spread index UC00 and credit default allowances Jan1997 – Dec 2013 (bps)



Note: The allowance for expected defaults and allowance for unexpected defaults are shown cumulatively.

Source: BoFA Merrill Lynch Global Research, used with permission, Bank of England.

These results should not be taken to represent the view of the Bank or FPC of the size of any illiquidity premia in sterling-denominated corporate bonds.



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What can we learn?

- Models of risk proved optimistic from investors and credit rating agencies
- Overly dependent on credit rating agencies - adjustments perhaps not timely
- In stress, some diversification benefits proved illusory
- Inadequate dependency structures and correlation
- Risks of model monoculture & simplistic assumptions
- Crisis was unpredicted and unpredictable
 - or were triggers and radar not in place?



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What of the Impact of the Liquidity Premium?

- What is the right 'market price' in illiquid markets?
- Previous price linkages broke down – e.g. negative basis and the crisis
- Capital adequacy was alone not enough to sustain depositor and investor confidence in many institutions
- Was regulation adequate or rewarding wrong behaviour
- Pro-cyclicality – short term behaviours out of line with long term investing- implications for insurance



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Liquidity premiums and liabilities

- Illiquid liabilities allow investment in illiquid assets
- Expected higher return applied to liability discount rate
- Fair value of the liabilities can be reduced to reflect this illiquid benefit
- Predictability of the timing of the liability cash-flows increases the LP benefit
- Liabilities ought not to change due to changing the assets
- Could derive LP from typical backing assets used in the market for given liability type



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Liquidity premiums and liabilities

- Mark-to-model method may not typically arrive at true market prices
- Insurer may only have limited ability to transfer out liabilities
- Higher levels of free assets reduce a company's risk of being forced seller of assets –may increase LP benefit
- Predictability of the size of the liability cash-flows may have reduced influence of the LP benefit



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Agenda

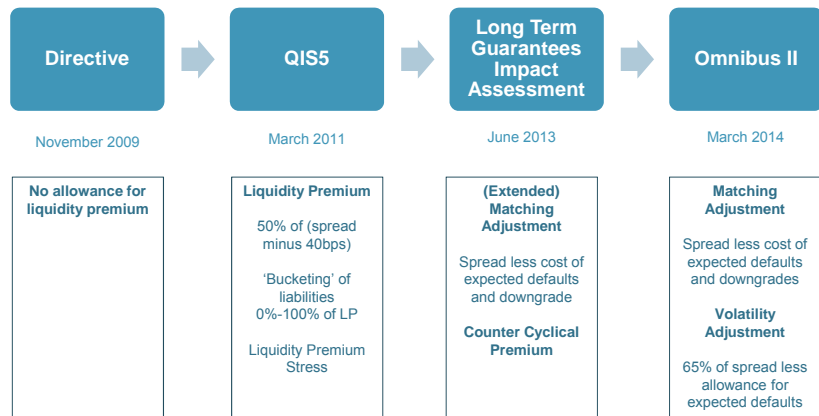
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Evolution of Liquidity Premium In Solvency II



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Matching Adjustment & Volatility Adjustment

	Matching Adjustment	Volatility Adjustment
Qualifying Liabilities	Fixed cash-flows	No restrictions
Qualifying Assets	Fixed cash-flows matching liabilities	No restrictions
Calibration	Spread less expected cost of defaults and downgrades on own portfolio	65% of spread less expected cost of defaults and downgrades on reference portfolio
Regulatory Safeguards	Regulatory approval Disclosure of impact	Disclosure of impact



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Why the Matching Adjustment?

	How does this relate to Annuities?
Pro-cyclicality	Spread related reserving for defaults could lead to large short term fluctuations in capital requirements. Use of historic default experience (with floor) avoids this.
Consumer Impact	Calibrations based on decomposition of spreads expected to lead to materially higher prices for consumers.
Investment Markets	Avoids potential disincentive to invest in corporate credit.
Policyholder Security	For matched annuity portfolios the insurer is exposed to default losses and not to spread movements.

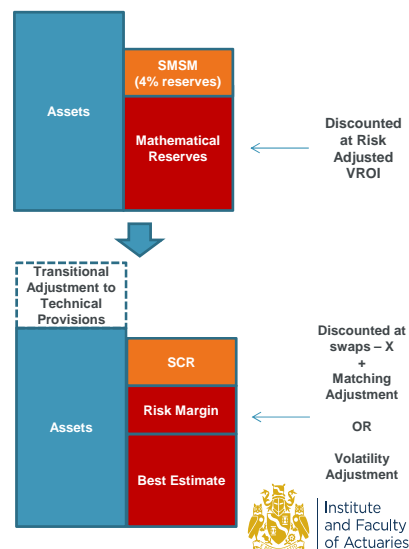


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Implications – Capital and Solvency

- Current INSURU rules provide **implicit allowance for liquidity premium** through the risk adjusted valuation rate of interest (VROI)
- Varying approaches adopted by firms in derivation of VROI.
- Under Solvency II, consistent allowance for a spread over the risk-free rate of interest is made through the **Matching Adjustment for annuity business and the Volatility Adjustment for other business**.
- Variations in Matching Adjustment due to different investment portfolios
- Transitional will limit impact of any increase in Technical Provisions (including Risk Margin)



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Matching Adjustment Calibration

Annuity backed by 10 Year A Rated Corp Bond

	Allowance for defaults	Quantification (bps)
Original Directive	100% of spread	224
QIS5	50% of spread + 20 bps	132
MA LTGA	Historic defaults with min of 65% of average long term spreads	79
Final MA	Historic defaults with min of 35% of average long term spreads	42

Source LTGA: A rated [10,15] industrials



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Implications - Investment Strategy

- Impact of Matching Adjustment qualification rules
 - Assets with 'variable' cashflows – callable bonds, equity release
 - Ability to bundle together assets to generate fixed cashflows
- Fundamental spreads (set by EIOPA) and capital requirements (in Level 2 for SF firms) will influence attractiveness
- 'Buy and hold' not a requirement but firms need to maintain matching between assets and liabilities



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Challenges emerging from Solvency II approach

- Is the Matching Adjustment sufficiently risk sensitive?
 - Derivation of 'expected defaults' reacts only slowly to worsening market conditions
 - Insurers already holding capital against 1 in 200 default experience
- Does Volatility Adjustment adequately reflect risks?
 - Insurers using VA can still be exposed to spread movements
 - Requirement to hold capital against surrender risks



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Where do we go from here?

- With Omnibus II the fundamentals of S2 are now agreed
 - Implementation details remain (Delegated Acts etc.) but these will not fundamentally change the approach adopted
 - Precise calibrations yet to be decided
 - Expect extensive regulatory and public scrutiny
- Work on International Capital Standards has now started
 - Field testing for Globally Systemically Important Insurers
 - No pre-conceptions on the approach to be used
 - Potential for re-run of the debates that delayed S2



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Conclusions

- No universally accepted approach to incorporating allowance for liquidity premium
- Lessons to be learnt from financial crisis
- Solvency II represents a compromise between prudence and desire to support insurers as long term investors
- Implications of the Solvency II approach not yet clear
- Further round of debate about to start around ICS



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Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

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



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Appendices

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What is the Liquidity Premium?

- Illiquid assets tend to trade at lower prices, giving rise to a higher yield:
 - Lack of market makes valuation difficult
 - Investors selling quickly may have to accept a lower price, so have higher liquidity risk
 - Can have higher transaction costs
- Suggests that a component of returns over “risk-free” are due to liquidity risks, rather than credit risks

$$\text{Yield} = \text{Risk-free} + \text{Expected Defaults} + \text{Compensation for default risk} + \text{Liquidity premium} + \text{Other factors}$$

- An investor who has a known time horizon and can match liabilities can be reasonably certain of earning an illiquidity premium.
- ...but the liquidity premium isn't directly observable.



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Other Methods of Assessment

• Credit Default Swap Negative Spreads

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Under the assumption that CDSs are liquid, a liquidity premium would be the difference between corporate bond spreads and CDS spreads.

Issues:

- How liquid are CDSs / Basis risk / Calibration

• Covered Bonds

Covered bonds have very high security and secured on high quality mortgage portfolios. They're highly regulated, with zero defaults to date.

Could a measure of the liquidity premium be based on covered bond spreads?

Issues:

- Is the default risk really zero?

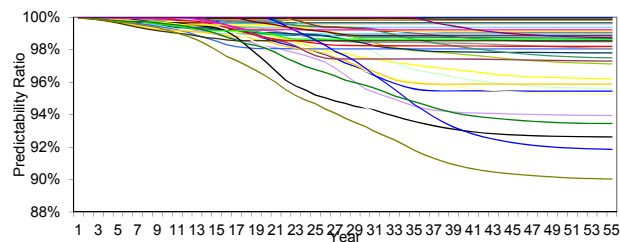


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Liquidity premiums and liabilities

- Predictability ratio measure for assessing the predictability of liability cash-flows
 - Perform 5000 stochastic scenarios of cash-flows from annuity liabilities and income from suitable initial assets
 - If and when the surplus becomes negative then disinvest sufficient assets to remove the negative surplus
 - Predictability ratio: $100\% - \text{accumulated disinvestments} / \text{time zero assets}$
 - For solvency capital purposes, consider the 1-in-200 worst case outcome at each duration to determine what proportion of the LP from suitable assets to allow when discounting liabilities.

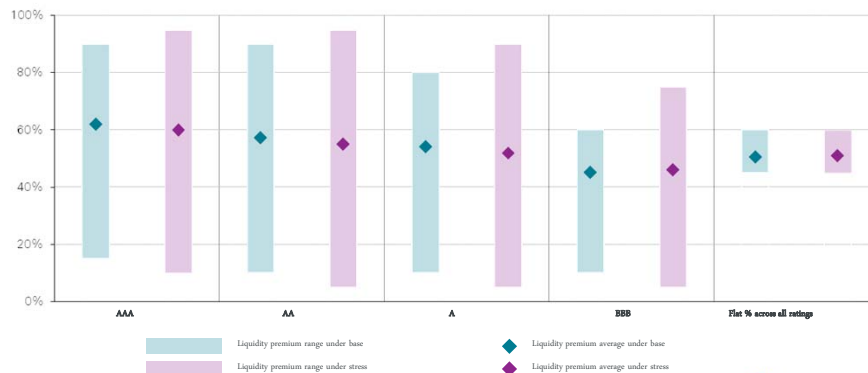


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Level of Liquidity Premium Allowance

Proportion of the spread due to the liquidity premium under ICA (% of spread)



Notes: The liquidity premiums are shown in percentage of spread between government and corporate bond yields by credit rating, under ICA base and stress calculations.
Liquidity premium averages shown above are based on responses to the survey.

Source: KPMG Technical Practices Survey, 2013.



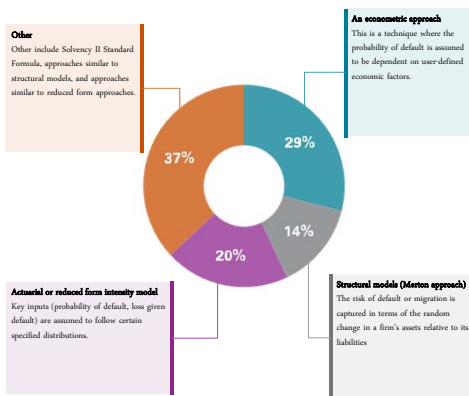
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Market Methodology for Credit Default & Liquidity Premium

Approaches to modelling credit default risk

In the KPMG Technical Practices Survey 2013, companies were asked about the techniques used for credit risk modelling. The answers were as follows:



Source: KPMG Technical Practices Survey, 2013

Methodology to establish liquidity premium

In the KPMG Technical Practices Survey 2013, companies were asked what methodology they used to establish liquidity premiums for their corporate bond portfolio. 19 firms responded to this question and provided the proportion of their credit spread that was attributed to the liquidity premium (see next slide).

The answers can be grouped as follows:

- Eight firms described methods using a percentage of the current spread and apply a formula and / or expert judgement
- Six firms described methods using historical default rates (derived internally or externally), expert judgement or with a proportion adjustment to the resulting rates
- Three firms used Solvency II or QIS 5 methodologies with some restrictions, removals and adjustments.
- Two firms derived default risk based on Solvency I Pillar I calculations and allocated the remainder to the liquidity risk