Liquidity Premium in Solvency II
Conceptual and Measurement Issues

Under what conditions is it justified
to discount insurance liabilities with a liquidity premium?

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Outline

1. Background

2. Some Fundamental Issues

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1. Background [1]

- Solvency II EC Directive 2009: general principles for valuation of liabilities.

  - "Liabilities shall be valued at the amount for which they could be transferred, or settled, between two knowledgeable willing parties in an arm's length transaction." (75)
  - "The value of technical provisions shall be equal to the sum of a best estimate and a risk margin." (77.1)
  - "The best estimate shall correspond to the probability-weighted average of future cash-flows, taking account of the time value of money (expected present value of future cash-flows), using the relevant risk-free interest rate term structure." (77.2)
  - "The risk margin shall be such as to ensure that the value of the technical provisions is equivalent to the amount that insurance and reinsurance undertakings would be expected to require in order to take over and meet the insurance and reinsurance obligations." (77.3)

Background [2]

- What discount rate is to be applied when determining the value of insurance liabilities, for the purpose of calculating technical provisions?

- Should the discount rate include a liquidity premium?

- Towards the end of 2009, CEIOPS was asked to lead a task force to consider the issue of liquidity premium.

- Not decisive but the (majority of the) task force generally supports the permanent inclusion of a liquidity premium; but many issues remain unanswered, and with the European Commission.

Background [3]

- Solvency II EC Directive 2009 to be complemented with level 2 implementing measures: QIS.
- Liquidity premium in QIS 5 (mid 2010).
- In particular, 3 buckets: 50%, 75% (dominant), 100% (0% bucket used in computing risk margin).
- As the liquidity premium is recognized in the calculation of technical provisions, the market risk module captures liquidity premium *risk*: solvency capital requirement for liquidity premium risk.
- The effect of the introduction of the liquidity premium in QIS 5 is estimated at about 1% of the total value of technical provisions (about 15% of SCR).

2. Some Fundamental Issues [1]

- What is the goal of solvency supervision? Dual:
  - Do you want to have sufficient funds to honor guarantees also in case the portfolio would be restructured and the assets would have to be liquidated, or do you assume that the entity under supervision will not be interrupted (e.g., taken over) and require that under the assumption that the assets will never have to be sold prematurely sufficient funds is available.
- Valuation principles in EC Directive suggest former.
- Adoption of liquidity premium is suggested by possibility of replicating insurance liabilities by illiquid assets (illiquid bonds). In principle based on a hold-to-maturity perspective: adoption of liquidity premium suggests the latter.
- For prudential purposes, the former seems more natural.

Interlude

- Solvency II EC Directive 2009:
  - "However, where future cash flows associated with insurance or reinsurance obligations can be replicated reliably using financial instruments for which a reliable market value is observable, the value of technical provisions associated with those future cash flows shall be determined on the basis of the market value of those financial instruments. In this case, separate calculations of the best estimate and the risk margin shall not be required." (77.4)
- If market valuation (reliable market value) feasible: use.
- Need not be feasible for many insurance products. Then compute best estimate and risk margin separately.

Some Fundamental Issues [2]

- The liquidity premium, if adopted, should reflect the liquidity premium (or rather: discount rate) implicit in illiquid but otherwise risk-less assets that are reliably valued and that can be used to restructure and replicate a liability portfolio.
  - Not corporate bonds, they are risky.
  - Reliably valued according to QIS 5 (TP.4.4) means liquid (contradiction!).
  - Liquidity premium risk is significant.
  - ⇒ Updated regularly and account for liquidity premium risk.
- Within Solvency II the size of the liquidity premium can only depend on the liability type.
  - Have time-dependent and maturity-dependent liquidity premia for various liability categories (multiple buckets): a challenging exercise! Model risk!
  - ⇒ Conservative estimates.

Some Fundamental Issues [3]

- But due to the inherent illiquidity such a portfolio of replicable assets may not be found in many cases (utopia).
  - ⇒ Tight definition.
  - ⇒ Conservative estimates.
- It is, furthermore, unlikely that due to the nature of insurance risk, replicating portfolios can be found for many (non-)life insurance products (utopia).
  - ⇒ Tight definition.
  - ⇒ 0% bucket.
- Should the liquidity premium be applied continuously or only under specific market conditions?
  - Continuous but regularly updated.
  - ⇒ Updated regularly and account for liquidity premium risk.
- Counter-cyclical effect is appropriate.

3. Advice

If adopted, the minimal conditions are:

1. There should be a tight definition of a stable (illiquid) liability, e.g., if redemption risk, non-replicable ⇒ no liquidity premium.

2. There should be a 0% bucket included in Solvency II.

3. The liquidity premium should be estimated conservatively.

4. The liquidity premium should be updated regularly and account for liquidity premium risk.

5. There should be further high-level research on the question of how to reliably determine a time-dependent, maturity-dependent, and liability-dependent liquidity premium.

There is no valid scientific justification nor a proper operational procedure underlying the liquidity premium in its form as proposed in QIS 5.