Bank of England

Prudential Regulation Authority

Matching adjustment cash flow tests

To help the PRA adopt a consistent approach to assessing the adequacy of cash-flow matching for the purposes of Article 4 (a) of the matching adjustment Implementing Technical Standard (MA ITS), firms are asked to provide the results of the following tests for each MA portfolio in their formal application submissions[1]:

Test 1: Accumulated Cash-flow Shortfall Test

- project best estimate liability cash flows in the MA portfolio at annual intervals;
- project cash flows from assets in component A, after being adjusted for that part of the
- fundamental spread that corresponds to the probability of default, at annual intervals;
- any cash flow surpluses and shortfalls arising in the year should be calculated and
- accumulated at the risk free rate;
- firms should note the highest accumulated shortfall from all future years in the projection; and
- firms should calculate the present value of liabilities in the MA portfolio (at the valuation date) discounted at the risk free rate

Threshold rate: The maximum accumulated shortfall in any year of the projection should not exceed **3%** of the present value of liabilities.

Test 2: 99.5th Percentile Value at Risk (VaR) Test

- calculate the 99.5th percentile 1-year value at risk (VaR) of the MA portfolio for each of interest rate, inflation and currency risks;
- the calculations should consider the change in the value of both the assets and the liabilities within the portfolio as a result of each stress;
- the PRA wishes firms to calculate undiversified capital requirements corresponding to a confidence level of 99.5% over a 1 year period for each of the risks specified in the first bullet point above. Where firms split a risk into components (such as might be the case for interest rate and currency risk), the PRA asks firms to aggregate these components into a single capital number for that risk, and to explain the approach adopted in determining this single number;

[1] Note that where this information request makes reference to components A,B and C these are as defined in Paul Fisher's letter to the industry of 15th October 2014

- the PRA is also asking firms to set out the best estimate liabilities of the MA portfolio, calculated by discounting at a rate equal to the relevant basic risk-free interest rate plus the MA;
- firms should then compute 6 statistics: the undiversified 99.5th percentile 1 year VaR capital requirement for the MA portfolio for each of interest rate, inflation and currency risks, and the result of dividing each of these capital requirements by the best estimate liabilities of the MA portfolio; and
- for the purposes of this calculation, the assets to be included are those hypothecated to components A and B, i.e. those that are required to cover the best estimate value of the liabilities.

Threshold rate: the undiversified 99.5th percentile 1 year VaR capital requirement should not exceed **1%** of the firm's calculated best estimate liabilities for any of the three risks.

Test 3: Notional Swap Test

- the aim of this test is to establish by how much the MA would change if the firm were able to eliminate any surplus or shortfall in its net (asset less liability) cash flows by investing in a 'notional swap' which emulates a perfectly matched position;
- firms are asked to set out:
  - the notional MA calculated by using the assets hypothecated to component A only (i.e. firms should state the amount of MA in bps);
  - the notional MA calculated by scaling the market value and cash flows (after being adjusted for that part of the fundamental spread that corresponds to the probability of default) of the assets in component A either up or down by a single factor until the present value of the future surpluses and shortfalls is zero when discounted at the basic risk-free interest rate (this is what is referred to as the 'notional swap approach' mentioned in Paul Fisher's letter to the industry of 15th October 2014); and
  - the market value of the assets in component A after they have been scaled in accordance with the above.
- the frequency of the time intervals used for the cash flows in this calculation should be consistent with how the firm conducts its matching.

Threshold rate – There would be no specific hurdle rate set for this test but we would expect firms to explain where the scaling factor as calculated above showed a ratio above 100% or below 99%.

Further cash flow projection information

The PRA would also welcome firms providing details of their actual asset and liability cash flow projections (together with other relevant information) as part of their matching adjustment application.

We expect that the information requested here will be based on using the firm's most recently available data. Where firms make adjustments to reflect planned changes to the actual asset and liability profile, this should be clearly explained, along with the impact of making those changes.

In providing these cashflows firms are requested to explain how they have treated each asset (including reinsurance assets and derivatives) within the matching tests and in particular what reinvestment assumptions have been made (if any) in the cash flows presented. Where future management actions have been assumed, firms are requested to present the results of the cash flow tests with and without these future management actions.

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