PRA's Consultation Paper on modelling of the volatility adjustment for internal model firms

April 2018

OVERVIEW

On 11 April 2018, the Prudential Regulation Authority (**PRA**) issued a Consultation Paper (**CP9/18**) in which it sets out its proposal to consider applications from internal model firms that include a Dynamic Volatility Adjustment (**DVA**). The PRA proposes a new supervisory statement (**SS**) "Solvency II: Internal models – volatility adjustment in the modelling of market risk and credit risk stresses", and amendments to SS17/16 "Solvency II: Internal models – assessment, model change and the role of non-executive directors"[1].

The Volatility Adjustment (**VA**) is an adjustment that may, subject to PRA approval, be made to the risk-free discount rate used for the calculation of the Best Estimate Liability (**BEL**) under Solvency II. This adjustment is linked to the spreads on a specified basket of investments. The use of a DVA would permit firms (again subject to PRA approval) to allow the size of the VA to change when modelling credit spreads in their Solvency Capital Requirement (**SCR**) calculation. This is currently not permitted in the SCR calculation in the UK.

The proposal is relevant to UK Solvency II firms and to the Society of Lloyd's and its managing agents, and most relevant to firms with, or seeking, VA approval and which use, or may develop in the future, a full or partial internal model to determine the SCR.

The consultation for CP9/18 closes on 11 July 2018. This briefing note provides a summary of the PRA's proposal.

The PRA's view of the DVA within an internal model

The European Insurance and Occupational Pensions Authority (**EIOPA**) identified that DVA is an area where supervisory convergence needs to be reinforced. EIOPA issued its "Opinion on the supervisory assessment of internal models including a dynamic volatility adjustment"[2], which implicitly accepts that firms that use an internal model to model credit risk may, as a general principle, apply a DVA by allowing the VA to change when modelling credit spreads during the 1-year forecast of Basic Own Funds in the calculation of the SCR.

Consequently, the PRA proposes to consider applications from internal model firms that include a DVA within an internal model. The PRA expects firms to treat the DVA as a new element and therefore any model extension to reflect the DVA would be expected to require PRA approval. The PRA expects firms to demonstrate that, in the applicable stressed scenarios underlying the calculation of the SCR where the DVA is applied, the firm would continue to comply with the three statutory approval conditions for applying the VA as set out in Regulation 43 of the Solvency 2 Regulations[3]. The PRA also spells out the responsibilities of the Chief Risk and Chief Actuary functions relevant to the application.

Reflecting EIOPA's VA methodology within the SCR calculation

The VA used in the calculation of the BEL is determined and provided by EIOPA, whereas no similar technical information is provided for the purposes of the SCR calculation. The PRA suggests that internal model firms should not be inappropriately constrained by the assumptions and parameters underpinning the VA used in the calculation of the BEL.

In particular, the PRA's view is that a 'mechanistic approach' to VA calculation in the stressed scenario, which would re-apply EIOPA's approach to the calculation of the base VA, is unlikely to result in an SCR that takes into account all quantifiable risks to which a firm is exposed. For example, the PRA would not expect firms to mechanically reproduce the fundamental spreads or the composition of the reference portfolio for the purpose of calculating the VA in stress.

Furthermore, the PRA suggests that any adjustments in their models to EIOPA's VA methodology when modelling the DVA should not result in a higher VA under stress than the stressed VA that would result from a mechanistic reapplication of EIOPA's methodology.

[1] The PRA proposes to delete Chapter 5 of SS17/16 which requires that a firm's SCR shall not cover the risk of loss of Basic Own Funds from changes to the volatility adjustment.

[2] https://eiopa.europa.eu/Publications/Opinions/2017-12-20%20EIOPA-BoS-17-366_Internal_model_DVA_Opinion.pdf

[3] http://www.legislation.gov.uk/uksi/2015/575/pdfs/uksi_20150575_en.pdf

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Other considerations when modelling the VA within the SCR calculation

The PRA expects firms to consider the following areas when modelling the VA under stress:

- The impact of the change in discount rate methodology implied by the DVA on the nature and scale of other risks to which the firm is exposed, as well as any dependency between these risks;
- Whether the scope of the model is justifiable in the context of Rules 4.2 and 10.3 of the SCR – Internal Models part of the PRA Rulebook[4], in particular whether the model scope should also cover sovereign risk and any other material interest rate risks;
- How the model, and the risk practices it informs, allows for the risk that the VA cannot be earned in practice. In particular, firms that rely on the yield from assets with an uncertain return or assets they intend to purchase at a future date are expected to demonstrate that they will continue to earn the VA assumed in stress;
- The DVA model should not lead to excessive capital relief in relation to the costs of any financial guarantees or options on business valued using the VA; and
- Validation should be more intensive in the areas of greatest risk and limitations should be mitigated where appropriate.

Other considerations

The PRA expects, where a DVA is applied, firms continue to capture all non-quantifiable risk within their Own Risk and Solvency Assessment (**ORSA**).

The disclosure requirements set out in the Solvency II Delegated Regulation stipulate that the disclosures should quantify the DVA benefit and provide an explanation of firms' DVA methodology.

The proposal to allow the use of a DVA in the SCR calculation will be welcome news to those who view the lack of DVA in the UK as a source of inconsistency between regulatory regimes that are subject to Solvency II.

However, the extent of any capital benefits that may result from this proposal is not clear. We estimate that the use of the VA provides a 3 percentage point boost to the UK insurance industry's solvency ratio[5], which is significantly lower than our estimates of that provided by the use of the Matching Adjustment (approximately 66 percentage points) and the Transitional Measure on Technical Provisions (approximately 41 percentage points). Therefore, the quantum of capital benefits from the use of the DVA may be limited, albeit not insignificant for some insurers.

Additionally, changes to internal models often require a significant diversion of resources, which may be deemed to be excessive for insurers where the capital benefit of DVA is not expected to be significant. However, it may be that, for some insurers, the DVA is analogous to the way in which they assess the impact of a spreads stress on the size of their Matching Adjustment, and therefore there is a natural synergy between the two processes which could reduce the amount of work required to develop a DVA approach.

[4] http://www.prarulebook.co.uk/rulebook/Media/Get/769c2d89-21a7-442b-b919-4c90a33743c3/PRA_2015_15/pdf

[5] Milliman analysis of a sample of end-2016 Solvency II disclosures around the impact of the long-term guarantee measures.

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uk.milliman.com

CONTACT

United Kingdom

Robert Bugg

robert.bugg@milliman.com

Lyndsay Wrobel

lyndsay.wrobel@milliman.com

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