Supervisory Statement | SS9/18

Solvency II: Internal models – modelling the volatility adjustment

November 2024

(Updating October 2018)

BANK OF ENGLAND
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1 Introduction

1.1 This supervisory statement (SS) sets out the Prudential Regulation Authority's (PRA) expectations of firms regarding the application of the Solvency II volatility adjustment (VA) within the calculation of the solvency capital requirement (SCR).

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

1.3 This SS should be read in conjunction with the following Parts of the PRA Rulebook:

- Technical Provisions (Chapter 8);
- Solvency Capital Requirement – General Provisions (Chapter 3);
- Solvency Capital Requirement – Internal Models (Chapters 4 and 10 to 16);
- Investments (Chapters 2 to 5); and
- Conditions Governing Business (Chapters 2 and 3).

1.4 It should also be read in conjunction with the document 'The PRA's approach to insurance supervision'.[1]

1.5 [Deleted]

1.6 The VA allows firms to adjust the relevant risk-free interest rate term structure for the purposes of calculating the best estimate of a portfolio of insurance or reinsurance obligations. To apply a VA, firms must have PRA been granted a volatility adjustment permission by the PRA. This SS covers the application of a VA as part of the SCR calculation.

2 The PRA's view of the dynamic volatility adjustment within an internal model

2.1 This section should be read in conjunction with statement of policy (SoP) – Solvency II: Volatility adjustment permissions[5a] and SS17/16 'Solvency II: internal models – assessment, model change and the role of non-executive directors'.[2]

2.2 Solvency Capital Requirement – General Provisions 3.6 requires that a firm's SCR shall not cover the risk of loss of basic own funds resulting from changes to the VA.

2.3 The European Insurance and Occupational Pensions Authority (EIOPA) issued its 'Opinion on the supervisory assessment of internal models including a dynamic volatility adjustment' (EIOPA Opinion).[3] The EIOPA Opinion implicitly accepts that firms that use an internal model to

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1 Available at: https://www.bankofengland.co.uk/news?NewsTypes=65d34b0d42784c6bb1dd302c1ed63653&Taxonomies=973f7bc68fd74abca30287f8a0a15fa3&Direction=Latest.

5a November 2024: SoP – Solvency II: Volatility adjustment permissions.

2 November 2016: https://www.bankofengland.co.uk/prudential-regulation/publication/2016/solvency2-internal-models-assessment-model-change-and-the-role-of-non-executive-directors-ss.

3 December 2017: https://register.eiopa.europa.eu/Publications/Opinions/2017-12-20%20EIOPA-BoS-17-366_Internal_model_DVA_Opinion.pdf.

model credit risk may, as a general principle, apply a dynamic volatility adjustment (DVA) by allowing the VA to change when modelling credit spreads during the 1-year forecast of basic own funds.

2.4 As a result, the PRA will consider applications from internal model firms that include a DVA within an internal model.

2.5 The PRA expects firms to treat the DVA as a new element of the model in accordance with EIOPA Guidelines.[4] As such, any model extension to reflect the DVA is expected to require PRA approval.

2.6 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 should continue to comply with the PRA's criteria for granting a VA permission set out in SoP – Solvency II: Volatility adjustment permissions. These include a condition that the VA is not applied in such a way as to breach a relevant requirement, and in particular will not breach:

(i) the Prudent Person Principle set out in Investments 2 to 5; and

(ii) the system of governance requirements under the Conditions Governing Business Part of the PRA Rulebook relating to the application of the VA, including:

   (a) the adequacy of the firm's liquidity plan (Conditions Governing Business 3.1(3));

   (b) the policy on the criteria for the application of the VA (Conditions Governing Business 2.5(2)); and

   (c) the assessment of the effect of the VA as a part of the firm's asset-liability management (Conditions Governing Business 3.2 and 3.3).

2.7 The Chief Risk function has responsibility for ensuring that the firm meets the system of governance (and other corresponding) requirements outlined in paragraphs 2.6(i), 2(ii)(a) and (c) above that are relevant to the application of the VA. The Chief Risk function is also required to be responsible for the design, implementation and validation of the internal model (Conditions Governing Business 3.7). Validation should be performed in conjunction with Chapter 7 of SS17/16 'Solvency II: internal models – assessment, model change and the role of non-executive directors'. The PRA also expects that the relevant EIOPA guidelines will be followed by the Chief Risk function.

2.8 The Chief Actuary function has responsibility for ensuring that the firm meets the system of governance requirements in Conditions Governing Business 6 that are relevant to the application of the VA, which includes contributing to the effective implementation of the risk management system, including the modelling of risks underlying the calculation of the SCR. The PRA also expects that the relevant EIOPA guidelines, and professional guidance for actuaries, will be followed by the Chief Actuary function.

3 Reflecting the PRA's volatility adjustment methodology within the SCR calculation

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4 Paragraph 1.18 of EIOPA's 'Guidelines on the use of internal models': www.bankofengland.co.uk/-/media/boe/files/paper/2020/december/gl-use-of-internal-models.pdf.

3.1 For the purposes of determining technical provisions (TPs), the VA and other supporting technical information is provided by the PRA[8a] as set out in SoP – Solvency II: The PRA's approach to the publication of Solvency II technical information.[8b] Paragraph 3.13 of that SoP states that the risk-corrected currency spread should reflect 'the portion of that spread that is attributable to a realistic assessment of expected losses or unexpected credit or other risk of the assets'. However, no similar technical information is provided in order to calculate the SCR.

3.2 The SCR should capture all material and quantifiable risks[5] to which a firm is exposed. Internal model firms, in satisfying the tests and standards, should not be inappropriately constrained by the assumptions and parameters used to calculate TPs. The PRA considers that a 'mechanistic approach' based on the re-application of the approach used to calculate TPs is unlikely to result in an SCR that takes into account all quantifiable risks to which a firm is exposed.[6] For example, the PRA does 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.

3.3 Firms' models may make adjustments to the PRA's VA methodology when modelling the DVA. The PRA expects that these adjustments should not result in a lower SCR than would have been the case had the PRA's VA methodology with no adjustments been used.

4 Other considerations when modelling the volatility adjustment within the SCR calculation

4.1 In addition to the above assumption and parameter uncertainties that arise with modelling the VA in stress, the PRA expects firms to consider the following when modelling DVA:

(i) how the change in discount rate methodology implied by the DVA could change the nature and scale of other risks to which the firm is exposed, as well as the dependency between these risks;

(ii) whether the scope of the model is justifiable in the context of Rules 4.2 and 10.3 of the Solvency Capital Requirement – Internal Models Part of the PRA Rulebook. In particular, the PRA expects firms seeking DVA approval to consider whether the model scope should also cover sovereign risk and any other material interest rate risks;

(iii) how the model, and the risk management practices it informs, allows for the risk that the VA cannot be earned in practice. In particular, the PRA expects firms reliant on the yield from assets with an uncertain return, or on the yield from assets they intend to purchase at a future date, to demonstrate that they will continue to earn the VA assumed in stress;

(iv) that 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

(v) the PRA expects validation to be more intensive in the areas of greatest risk and for limitations to be mitigated where appropriate.

8a The Insurance and Reinsurance Undertakings (Prudential Requirements) Regulations 2023) (regulation 3): https://www.legislation.gov.uk/uksi/2023/1347/made.

8b November 2024: November 2024: https://www.bankofengland.co.uk/prudential-regulation/publication/2020/the-pras-approach-to-publication-of-sii-technical-information.

5 Solvency Capital Requirement - General Provisions 3.3(1) and Solvency Capital Requirement - Internal Models 11.6.

6 The principles are consistent with those set out in SS8/18: Solvency II internal models – modelling of the matching adjustment.

5 Own Risk and Solvency Assessment (ORSA)

5.1 The PRA expects that, where a DVA is applied, firms continue to capture all non-quantifiable risk within their ORSA.[7]

6 Disclosure

6.1 Firms are reminded of the disclosure requirements set out in the PRA Rulebook and Guidance. In particular:

(i) the impact of a change to zero of the VA on firms' financial position must be disclosed in the Solvency and Financial Condition Report.[8] No compensation should be included in this calculation, for example via switching off other model components, such as the modelling of sovereign risk; and

(ii) to further facilitate this, the disclosures should quantify the DVA benefit and provide an explanation of firms' DVA methodology.

7 Conditions Governing Business 3.1A and paragraph 1.19 of Guideline 7 of 'Guidelines on own risk and solvency assessment': https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/december/gl-own-risk-solvency-assessment.pdf.

8 Reporting Part of PRA Rulebook 3.4(2)(b).

Appendix: SS9/18 updates

SS9/18 was originally published in October 2018.

This appendix details the changes that were made to this SS following its initial publication.

15 November 2024

This SS has been updated alongside the publication of Policy Statement (PS) 15/24 - Review of Solvency II: Restatement of assimilated law.[9] This includes updating all previous references to the Commission Delegated Regulation (EU) 2015/35 so as to now refer to the relevant rule(s) in the PRA Rulebook. In addition, the following changes were made:

- minor re-drafting to paragraph 1.5 to include cross-references to requirements and expectations in the PRA Rulebook and Guidance documents;
- re-drafting to paragraphs 1.6, 2.1, 2.6 and 3.1 to capture the updated process for firms' to be granted volatility adjustment permissions;
- updating text in paragraph 3.3 referring to the PRA's volatility adjustment methodology; and
- fixing broken links in footnotes, including updating links to on shored guidelines.

9 www.bankofengland.co.uk/prudential-regulation/publication/2024/november/review-of-solvency-ii-restatement-of-assimilated-law-policy-statement.