Consultation Paper | CP9/18

Solvency II: Internal models – modelling of the volatility adjustment

April 2018

Prudential Regulation Authority
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Responses are requested by Wednesday 11 July 2018.

Please address any comments or enquiries to:

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1 Overview

1.1 This consultation paper (CP) sets out the Prudential Regulation Authority's (PRA's) proposal to consider applications from internal model firms that include a dynamic volatility adjustment (DVA). It sets out the PRA's draft expectations of internal model firms when determining the risks that might arise from the DVA when calculating the solvency capital requirement (SCR).

1.2 The PRA proposes a new supervisory statement (SS) 'Solvency II: Internal models – volatility adjustment in the modelling of market risk and credit risk stresses' (Appendix 1), and amendments to SS17/16 'Solvency II: internal models – assessment, model change and the role of non-executive directors'[1] (Appendix 2).

1.3 This CP 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, volatility adjustment (VA) approval and which use a full or partial internal model to determine the SCR, together with UK Solvency II firms that may develop a full or partial internal model in future.

Background

1.4 In SS17/16 the PRA set out its expectation that an internal model firm should not recognise the DVA within its SCR.

1.5 The European Insurance and Occupational Pensions Authority (EIOPA) is attentive to the convergence of supervisory practices on internal models and has identified that DVA is an area where supervisory convergence needs reinforcing. EIOPA has published an 'Opinion on the supervisory assessment of internal models including a dynamic volatility adjustment'[2] (EIOPA Opinion).

1.6 The PRA is consulting on the possibility of allowing firms to apply DVA in internal models when calculating the SCR and the adoption of the draft SS. The CP highlights the areas that the PRA proposes firms to consider in their internal model and model change applications when seeking approval to apply the DVA.

Responses and next steps

1.7 This consultation closes on Wednesday 11 July 2018. The PRA invites feedback on the proposals set out in this consultation. Please address any comments or enquiries to CP9_18@bankofengland.co.uk.

1 November 2016: www.bankofengland.co.uk/prudential-regulation/publication/2016/solvency2-internal-models-assessment-model-change-and-the-role-of-non-executive-directors-ss.
2 December 2017: https://eiopa.europa.eu/Publications/Opinions/2017-12-20%20EIOPA-BoS-17-366_Internal_model_DVA_Opinion.pdf.

2 Proposals

2.1 This chapter sets out the PRA's proposed expectations of what firms should consider in their internal model and model change applications when seeking approval to apply the DVA. These proposals are presented in the draft SS and revisions to SS17/16.

Approval to apply the DVA

2.2 The EIOPA Opinion 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. As a result, the PRA proposes to consider applications from internal model firms that include a DVA within an internal model subject to the consideration of factors set out in the draft SS. As a consequence of this proposal, the PRA also proposes to delete Chapter 5 of SS17/16 (as shown in Appendix 2).

2.3 The factors that the PRA proposes to consider when assessing model applications would include a demonstration by a firm that:

- the three statutory approval conditions set out in Regulation 43(4) of the Solvency 2 Regulations[1] for applying the VA can also be met in stress; and

- consideration has been given to the Prudent Person Principle and the system of governance requirements relating to the adequacy of a firm's liquidity plan in the PRA Rulebook.[2]

2.4 The PRA also reminds firms in the draft SS of the responsibilities of the Chief Risk function and Chief Actuary function for ensuring the firm meets the system of governance requirements set out in the PRA Rulebook that it is expected will be relevant to the application.

2.5 In addition, the PRA proposes that firms treat the DVA as a new element of the model. As such, any model extension to reflect the DVA would be expected to require PRA approval.

Reflecting EIOPA's methodology

2.6 The methodology used by EIOPA in its calculation of the VA applies to the calculation of technical provisions (TPs). The modelling of DVA poses challenges for firms due to the differences that occur in a stressed scenario between a firms' risk profile and the representative portfolio in EIOPA's methodology. In line with the EIOPA Opinion, the PRA proposes that any adjustments to EIOPA's VA methodology should not result in a lower SCR than would have been the case in the absence of such adjustments.

2.7 The PRA also proposes that firms should not adopt a purely 'mechanistic approach' to determine the total and fundamental spread underlying the VA calculation when modelling changes to the VA within the SCR. The PRA considers that this type of approach would not be consistent with the Solvency II tests and standards for internal models and would be unlikely to capture all the quantifiable risks. The PRA has proposed certain specific factors in the draft SS that firms should consider when modelling changes to the VA within the SCR.

Own Risk and Solvency Assessment (ORSA)

2.8 The PRA proposes that firms continue to capture all non-model and non-quantifiable risk in the ORSA when forecasting the VA. This is in line with EIOPA Opinion.

1 www.legislation.gov.uk/uksi/2015/575/pdfs/uksi_20150575_en.pdf.
2 Conditions Governing Business 3.1(3) of the PRA Rulebook.

3 The PRA's statutory obligations

3.1 The PRA is required by the Financial Services and Markets Act 2000 (FSMA) to consult when setting its general policies and practices.[1] In doing so, it is required to comply with several statutory and public law obligations. The PRA meets these obligations by providing the following in its consultations:

- a cost benefit analysis;
- an explanation of the PRA's reasons for believing that the proposed policy is compatible with the PRA's duty to act in a way that advances its general objective,2 insurance objective3 (if applicable), and secondary competition objective;4
- an explanation of the PRA's reasons for believing that making the proposed policy is compatible with its duty to have regard to the regulatory principles;5 and
- a statement as to whether the impact of the proposed policy will be significantly different to mutuals than to other persons.[6]

3.2 The Prudential Regulation Committee (PRC) should have regard to aspects of the Government's economic policy as recommended by HM Treasury.[7]

3.3 The PRA is also required by the Equality Act 2010[8] to have due regard to the need to eliminate discrimination and to promote equality of opportunity in carrying out its policies, services and functions.

Cost benefit analysis

3.4 The EIOPA Opinion implicitly accepts that firms that use an internal model to model credit risk may, as a general principle, apply a DVA – the draft SS would more closely align PRA policy with this Opinion. It does not impose additional requirements or rules but it does clarify the standard expected by the PRA in the application of DVA based on current principles. Therefore, while firms will incur ongoing costs of model development in order to maintain compliance with the Solvency II regime, the PRA does not expect firms to incur any additional costs as a direct result of the proposals set out in the draft SS.

1 Section 2L of FSMA.
2 Section 2B of FSMA.
3 Section 2C of FSMA.
4 Section 2H(1) of FSMA.
5 Sections 2H(2) and 3B of FSMA.
6 Section 138K of FSMA.
7 Section 30B of the Bank of England Act 1998.
8 Section 149.

Compatibility with the PRA's objectives

3.5 The proposals in this CP ensure that the PRA's policy is aligned with EIOPA's Opinion in seeking to ensure that firms' DVA models capture all material quantifiable risks. The PRA considers the proposals would contribute to its general and insurance objective by ensuring that:

- a firm developing or using a DVA model complies with the requirements that all quantifiable risks to which a firm is exposed are included in the calibration of the SCR (in accordance with Solvency Capital Requirement – General Provisions 3.3 of the PRA Rulebook); and

- a firm's internal model covers all of the material risks to which the firm is exposed (in accordance with Solvency Capital Requirement – Internal Models 11.6 of the PRA Rulebook). The PRA does not consider that the proposals set out in this CP will in themselves have a material effect on competition.

Regulatory principles

3.6 In developing the proposals in this CP, the PRA has had regard to the regulatory principles as set out in FSMA. The PRA considers the draft SS to be compatible with the regulatory principles.

3.7 The PRA considers that the regulatory principles of most relevance to the proposals are:

- the need to be proportionate – the proposals have been designed to ensure that the breadth and depth of analysis performed by the firm is proportionate to the DVA impact;

- the need to use resources in the most efficient way – the proposals would allow firms to understand the factors the PRA considers to be important in assessing firms' modelling approaches for the DVA and therefore should help the PRA's internal model (change) approval process operate more efficiently; and

- that the PRA will exercise its functions as transparently as possible – the proposals set out the PRA's expectations in respect of how the VA should be reflected within firms' internal models and therefore indicate to firms the factors the PRA is likely to take into account in assessing internal model (change) applications.

Impact on mutuals

3.8 In the PRA's opinion, the impact of the proposed policy changes on mutuals is expected to be no different from the impact on other firms.

HM Treasury recommendation letter

3.9 HM Treasury has made recommendations to the PRC about aspects of the Government's economic policy to which the PRC should have regard when considering how to advance the PRA's objectives and apply the regulatory principles.[1] The recommendations most relevant to the proposals are 'better outcomes for consumers' and 'competitiveness'.

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1 Information about the PRC and the recommendations from HM Treasury are available on the Bank's website at www.bankofengland.co.uk/about/Pages/people/prapeople.aspx.

Better outcomes for consumers

3.10 This consideration is the one of most relevance to the proposals, which are designed to ensure that insurers continue to be adequately capitalised where a DVA is applied.

Competitiveness

3.11 The PRA considers that allowing internal model firms to apply a DVA will enhance the competitiveness of UK groups. In particular, the proposals will remove any disadvantage that could arise from the solvency position of non-UK EEA groups that currently permits a DVA appearing stronger than a UK group that does not include the DVA.

Equality and diversity

3.12 The PRA does not consider that the proposals give rise to any equality and diversity issues.

Appendices

1	**Draft supervisory statement 'Solvency II: internal models – volatility adjustment in the modelling of market risk and credit risk stresses'**
2	**Draft amendments to Supervisory Statement 17/16 'Solvency II: internal models – assessment, model change and the role of non-executive directors'**

Appendix 1: Draft supervisory statement 'Solvency II: Internal models – volatility adjustment in the modelling of market risk and credit risk stresses'

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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 The PRA has considered the relevant sections of the Solvency II Directive[2] and the Solvency II Commission Delegated Regulation[3] when setting the expectations noted in this SS.

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 approval, as per Regulation 43 of the Solvency 2 Regulations.[4] 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 SS23/15 'Solvency II: supervisory approval for the volatility adjustment'[5] and SS17/16 'Solvency II: internal models – assessment, model change and the role of non-executive directors'[6]

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.

1 Available at www.bankofengland.co.uk/publications/Pages/other/pra/supervisoryapproach.aspx.
2 Directive 2009/138/EC: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0138-20140523.
3 Commission Delegated Regulation (EU) 2015/35: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R0590.
4 The Solvency 2 Regulations 2015: www.legislation.gov.uk/uksi/2015/575/pdfs/uksiem_20150575_en.pdf.
5 June 2015: www.bankofengland.co.uk/prudential-regulation/publication/2015/solvency2-supervisory-approval-for-the-volatility-adjustment-ss.
6 November 2016: www.bankofengland.co.uk/prudential-regulation/publication/2016/solvency2-internal-models-assessment-model-change-and-the-role-of-non-executive-directors-ss.

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).[1] The EIOPA Opinion implicitly accepts that firms that use an internal model to 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[2]. As such, any model extension to reflect the DVA would be 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 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. 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 under Investments 2-5 of the PRA Rulebook; 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) of the PRA Rulebook);

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

2.7 The Chief Risk function would have 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 of the PRA Rulebook). 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 would have 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.

1 December 2017: https://eiopa.europa.eu/Publications/Opinions/2017-12-20%20EIOPA-BoS-17-366_Internal_model_DVA_Opinion.pdf.
2 Paragraph 1.18 of EIOPA's 'Guidelines on the use of internal models': https://eiopa.europa.eu/Publications/Guidelines/IM_Final_document_EN.pdf

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

3.1 For the purposes of determining technical provisions (TPs), the VA is provided by EIOPA with technical information that the European Commission may adopt in implementing acts. No similar technical information is provided in order to calculate the SCR.

3.2 The SCR should capture all material and quantifiable risks[1] 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.[2] 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.

3.3 Firms' models may make adjustments to EIOPA'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 EIOPA'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. Any approximations or limitations of the approach to modelling financial guarantees and options may be exacerbated when the DVA is applied in stress. This may in turn make it more difficult for the model to promote effective risk management; and

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

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1 Solvency Capital Requirement - General Provisions 3.3(1) and Solvency Capital Requirement - Internal Models 11.6.
2 The principles are consistent with those set out in CP24/17: 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.[1]

6 Disclosure

6.1 Firms are reminded of the disclosure requirements set out in the Commission Delegated Regulation. In particular:

(i) the impact of a change to zero of the VA on firms' financial position as defined in Article 296 (2)(e) must be disclosed in the Solvency and Financial Condition Report. 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.

1 See Article 44(2) of Directive 2009/138/EC and 1.19 of Guideline 7 of EIOPA's 'Guidelines on own risk and solvency assessment' https://eiopa.europa.eu/GuidelinesSII/EIOPA_Guidelines_on_ORSA_EN.pdf

Appendix 2: Draft amendments to Supervisory Statement 17/16 ‘Solvency II: internal models – assessment, model change and the role of non-executive directors’

The PRA proposes to delete Chapter 5 in light of the PRA’s proposals in CP9/18.

5 [Deleted.] ~~Volatility adjustment in the modelling of market risk and credit risk stresses~~

~~5.1 This section should be read in conjunction with PRA Supervisory Statement (SS) 23/15, ‘Solvency II: supervisory approval for the volatility adjustment’.~~

~~5.2 Solvency Capital Requirement – General Provision 3.6 requires that a firm’s SCR shall not cover the risk of loss of basic own funds from changes to the volatility adjustment. As a result, the PRA expects that firms would not assume any change to the level of volatility adjustment (VA) (expressed as the number of basis points in addition to the risk free curve) when calculating the SCR.~~