Bank of England PRA

QUESTIONNAIRE FOR SA-CVA APPLICATIONS

This Questionnaire should be completed by firms seeking permission to use the Standardised Approach (SA-CVA) for their own funds requirements for Credit Valuation Adjustment (CVA) risk. For credit institutions and investment firms, the CVA Risk framework is outlined in Annex J Credit Valuation Adjustment Risk Part.

This Questionnaire is designed to aid the PRA's understanding of the methods used to meet the CVA capital requirements, as well as the business, systems and control environment within which the methods are applied.

Applicant firms are asked to undertake a self-assessment against the rules set out in:

- Annex J Credit Valuation Adjustment Risk Part

The self-assessment needs to be specific to the legal entities relevant to the SA-CVA application. Firms should follow the structure of this Questionnaire when completing the application, in order to facilitate the efficiency of the PRA's review, and also provide a short introductory description of the business context and the main findings evidencing the attested compliance status. Firms should address the specific points highlighted in this Questionnaire and include cross-references to the supporting documentation, as well as clearly flag areas of potential or actual non-compliance and, where there is scope for interpretation in the rules, the firm should explain how it has chosen to interpret the rules.

In addition to the self-assessment, the supporting documentation and a summary of its salient points should clearly answer the individual requests for information in this Questionnaire.

Where relevant and practical, any information provided should make use of internal documentation/management information (MI) in the form in which it was presented at the time through the firm's normal governance forums. We recognise that there may be circumstances where this requirement may need to be over-ridden in the interests

of providing sufficiently detailed information in response to the requests of this Questionnaire. Please indicate where this is the case.

When providing policies, procedures or methodologies please explain the governance around these documents and provide committee meeting minutes if available. Please ensure that all policies and procedures provided govern the practices of the legal entities covered by the SA-CVA application.

Where the self-assessment leads to identification of issues, the firm should outline the nature and materiality of the issue and provide details of any planned remediation. Also please note that any finding reported should evidence that a targeted review for the areas in scope of the application was carried out, whereas a general reference to global firm policies, which may indicate higher-level compliance, would not suffice.

Please include the following attestation issued and signed by an individual performing a relevant Senior Management Function (SMF):

I confirm that for the SA-CVA, [firm name] has carried out a comprehensive assessment of its compliance with the "PRA requirements". Based on this assessment, there is no evidence that any aspect of the framework is materially non-compliant with the PRA's requirements. For these purposes, "PRA requirements" mean the requirements in the PRA Rulebook in regard to the use of the SA-CVA approach for credit valuation adjustment risk.

Contents

List of abbreviations/terms

Article	Refers to the articles in Annex J of the PRA Rulebook
BA-CVA	Basic Approach for CVA risk
CDS	Credit Default Swap
CVA	Credit Valuation Adjustment
FO	Front Office
IA	Independent Amount
IM	Initial Margin
IMA	Internal Models Approach
LGD	Loss Given Default
MI	Management Information
MPOR	Margin Period of Risk
PD	Probability of Default
PRA	Prudential Regulation Authority
RFE	Risk Factor Evolution
SA-CVA	Standardised Approach for CVA risk
SMF	Senior Management Function
VM	Variation Margin
WWR	Wrong Way Risk

A Introduction to the SA-CVA application

Please compile an introductory section that shall cover the aspects given below to a sufficient level of detail, providing a common understanding for all members of the PRA's review team.

1. Please provide an overview of the rationale for the application, and a description of the business lines and trading desks that the application proposes to cover, along with the relationship to the legal entities relevant to the application, noting that business lines may cut across legal entity boundaries.
2. Please provide the projected impact on CVA risk regulatory capital requirements that the SA-CVA permission is expected to produce by legal entity, clearly stating any assumptions being made. The capital impact should also be provided as a proportion of total UK solo/solo-consolidated and consolidated capital requirements.
3. For legal entities within a group, please describe the relationship between the use of the model within the legal entity compared with the use of the model within the wider group.
4. Please provide details of the due diligence process undertaken by the SMF prior to their signing the application.
5. Please include a point of contact in your firm for the SA-CVA application.

B Permission for SA-CVA for credit valuation adjustment capital requirements

Please provide a line-by-line self-assessment against each item (article and sub-article) in Chapter 5 of Annex J Credit Valuation Adjustment Risk Part.

Please provide self-contained responses to questions in this section, including detailed references to the relevant submitted documentation; and also provide the requested documentation and data, and fill in the template required. You may reference these responses for the line-by-line self-assessment of the articles above.

1. ***CVA Desk***: Please provide an organisation chart of the CVA desk or similar dedicated function responsible for risk management and hedging of CVA risk, as required by Article 5.2(3). Please also provide information on the roles,

responsibilities and reporting lines of staff, as well as the geographical locations that these members of staff are based in.

2. ***Scope***: Please provide the scope of the requested SA-CVA permission, inclusive of all the dimensions that may apply (e.g. product types, underlying, booking systems, contractual and/or collateral terms).
3. ***Nature of Documentation***: Please provide evidence that all documentation used in collateralised transactions is binding on all parties and legally enforceable in all relevant jurisdictions.
4. ***PD Term Structure***: Please provide a summary description of the methodology used to estimate the term structure of market-implied probability of default for the in-scope counterparties, including the treatment of names for which credit spreads are not observable / missing and proxy spreads are used.
5. ***LGD***: Please describe how market-consensus expected Loss Given Default (LGD) is estimated. If external data sources are used, please characterise these data sources and explain their scope of usage.
6. ***Derivatives Valuation Framework***:
    a. Please describe the derivatives valuation framework used for SA-CVA.
    b. Please explain the process in place to reconcile the t=0 prices generated by the above-mentioned framework with Front Office (FO) valuations for the same trades.
    c. Please describe the evidence that the valuation framework is suitable for a broad variety of realised market conditions, including periods of distress in the relevant asset classes. You may refer to the submitted model methodology and validation documents.
7. ***Risk Factor Evolution (RFE) models***: Please provide a summary description of the Risk Factor Evolution (RFE) models and overarching simulation framework used to generate the scenarios used for the SA-CVA valuation.

8. ***Wrong Way Risk***: Please provide a summary description of the approach to account for specific and general Wrong Way Risk (WWR) in the SA-CVA calculation.
9. ***Collateral Balance Forecasting***: Please provide a summary description of the methodology used to forecast future collateral balances for the supported types of collateral agreements (such as VM, IM, IA) in SA-CVA. Please describe, at a minimum, the following:
    a. how margin requirements are forecast on a scenario basis for the different types of margin agreements;
    b. how forecasted margin requirements are converted into collateral balances on a scenario basis;
    c. (if applicable) how collateral balances are allocated for netting agreements split between SA-CVA and BA-CVA;
    d. how the market risk of the collateral over the MPOR is accounted for in the computation of the exposures;
    e. how the MPOR is determined.
10. ***SA-CVA vs. BA-CVA routing***: Please describe the SA-CVA vs. BA-CVA routing logic, and provide an explanation for the split, for covered transactions in scope of regulatory SA-CVA, including:
    a. which conditions may cause a trade or netting agreement to be processed with BA-CVA;
    b. (If applicable) how the split is implemented for netting agreements that cover trades in both SA-CVA and BA-CVA (e.g. for collateral and other contractual terms).
11. ***Accounting CVA vs SA-CVA***: Please provide a comparison of the accounting CVA vs. the SA-CVA frameworks, highlighting the areas where the two may differ, including the following areas, at a minimum: trades and counterparties scope, market and portfolio data sources, scenarios generation, pricing, exposures aggregation and sensitivities.

12. ***Netting***: Please describe the implementation of netting for the scope of SA-CVA calculation, including the valuation logic, the data used, as well as a comparison with accounting CVA.
13. ***Model Performance Monitoring***: Please describe the model performance assessment process for all the models that contribute to SA-CVA.
14. ***Implementation***: Please provide an overview of the regulatory CVA implementation (both SA-CVA and BA-CVA), including:
    a. Market data feeds;
    b. Trades data feeds;
    c. Collateral feeds;
    d. Contractual terms / legal feeds;
    e. the applicable valuation components.
15. ***Controls and Reconciliation processes***:
    a. Please provide an overview of the controls and reconciliation processes in place to ensure:
        i. the accuracy, timeliness and integrity of the market and portfolio data;
        ii. the accuracy and integrity of the valuation (overall and component-wise, e.g. prices, sensitivities).
    b. Please describe how such controls and reconciliation processes are integrated in the valuation waterfall. Please also describe the process to handle failures in these controls and reconciliations.
16. ***Proxy choices***: Please explain the conservatism of the given modelling choices if the usage of market data proxy is material for one or more asset classes. Please also provide evidence of the review of such choices by the independent model validation function[1].

[1] Our expectation is that the bank's internal CCR and model risk management policies deem accounting CVA in scope of periodic independent model validation reviews. This should be considered as a pre-requisite for the SA-CVA permission application.

17. ***Hedge Classification***: Please explain the process to classify trades as hedges for the SA-CVA calculation.

18. ***Delta Risk***:

    a. Please provide a summary description of the methodology used to compute SA-CVA delta sensitivities.

    b. Please provide a comparison of this methodology for sensitivity calculations with the methodology used to compute sensitivities for the trades / netting agreements in scope of accounting CVA. Please highlight any material differences between these two methodologies.

    c. Please provide evidence that the delta risk aggregation for SA-CVA has been implemented according to the requirements. At a minimum, this evidence should include a summary of the unit tests performed using the PRA sample portfolio (see appendix).

19. ***Vega Risk***:

    a. Please provide a summary description of the methodology used to compute SA-CVA vega sensitivities.

    b. Please provide a comparison of this methodology for sensitivity calculations with the methodology used to compute sensitivities for the trades / netting agreements in scope of accounting CVA. Please highlight any material differences between these two methodologies.

    c. Please provide evidence that the vega risk aggregation for SA-CVA has been implemented according to the requirements. At a minimum, this evidence should include a summary of the unit tests performed using the PRA sample portfolio (see appendix).

20. **Qualitative requirements**:

    a. Please provide confirmation that your exposure models used for calculating regulatory CVA are part of your CVA risk management framework, including the identification, measurement, management, approval and internal reporting of CVA risk.

b. Please provide an organisation chart of the independent risk unit overseeing the CVA desk or similar dedicated function. Please also provide information on the roles, responsibilities and reporting lines of staff, as well as the geographical locations that these members of staff are based in.

c. Please provide details of CVA risk reporting and escalation of CVA risk issues to senior management including recent examples.

d. Please provide details of your process for ensuring compliance with your internal policies, controls and procedures concerning the operation of your CVA calculation system.

e. Please provide an organisation chart of the independent control unit responsible for the validation of exposure models. Please also provide information on the roles, responsibilities and reporting lines of staff, as well as the geographical locations these members of staff are based in.

f. Please provide evidence that Internal Audit conducts periodic reviews of the security of the database for storing transaction terms and specifications, and the transmission of data to the exposure model, including the existence of reconciliation processes to ensure data quality is maintained.

g. Please provide MI for data quality around the exposure model and CVA risk calculation.

h. Please provide explanations for any differences in risk factor shifts used in the CVA risk calculation and internal risk management, and separately any differences from regulatory prescribed shifts.

Documentation requirement:

a) Please provide all your Policies for ensuring compliance with Annex J Chapters 2, 3, 5 and 7. In particular, please provide:

   i. the Policy for model performance monitoring framework for exposure models, and any related documentation that describes the framework, including the remediation process in the case of unacceptable performance;

ii. the Policies related to the usage of market data proxies in the context of SA-CVA.

b) Please provide Methodology documentation as well as Independent Model Validation review documentation for each of the following:

i. the splitting of trades in scope for regulatory CVA between SA-CVA and BA-CVA, including (if applicable) the handling of split netting agreements (e.g. for collateral and other contractual terms);

ii. the estimation of the term structure of market-implied probability of default for the in-scope counterparties, including the treatment of names for which credit spreads are not observable / missing and proxy spreads are used;

iii. the estimation of market-consensus expected LGD (if an internal methodology is used);

iv. the valuation models underlying the derivatives valuation framework;

v. the Risk Factor Evolution (RFE) models;

vi. the model(s) used to address WWR in SA-CVA;

vii. the forecasting of future collateral balances for the supported types of collateral agreements (such as VM, IM, IA) in SA-CVA;

viii. any material incremental modelling specific to SA-CVA and to the generation of the simulated paths of discounted future exposures;

ix. computation of SA-CVA delta and vega sensitivities, including:

- all the applicable sub-cases, as for the risk classes specified in Articles 5.15 and 5.17 for delta and vega respectively;
- the treatment of index instruments, also when used as SA-CVA hedges;
- the business process around valuation failures, such as when some of the in-scope sensitivities cannot be calculated accurately on a given day.

c) Please provide the Independent Model Validation review document for the assessment of the model performance monitoring framework.
d) Please provide the Independent Model Validation review documents for
    i. the delta risk aggregation for SA-CVA;
    ii. the vega risk aggregation for SA-CVA.
e) Please provide the most recent Internal Audit reviews for the CVA desk and independent risk control covering CVA risk.

Data requirement:

1. Please provide the model inventory, including the Risk Factor Evolution (RFE) models, used for the SA-CVA calculation, with the last review and approval dates, re-review frequency and approval expiry dates for each model.
2. Please provide evidence of being able to compute SA-CVA for the trade population in scope of the application, e.g. in the form of monthly parallel run results[2] for at least two consecutive quarters (i.e. at least 6 data points). Such results should include:
    a. The total regulatory CVA, as it would be computed upon SA-CVA permission approval, and inclusive of both the BA-CVA and SA-CVA components.
    b. The baseline regulatory CVA, computed as BA-CVA full-volume.
3. Based on the scope mentioned in the previous paragraph (item 2) and using the same parallel run data, please provide theoretical and realised coverages[3] of the SA-CVA valuation for at least two consecutive quarters (i.e. at least 6 data points).

[2] In this context, "parallel run" should be intended as a full scope valuation, de facto equivalent to the one that would be performed if the model was approved and live in production.
[3] Both quantities should be measured by trade count. The theoretical coverage is defined as SA-CVA in-scope trades / total regulatory CVA trades; while the realised coverage is defined as SA-CVA processed trades / total regulatory CVA trades.

4. Using the same parallel run data, please provide usage information for market data proxies for the purpose of computing SA-CVA for at least two consecutive quarters (i.e. at least 6 data points).
5. Using the same parallel run data, please list the hedges included in the SA-CVA calculation for at least two consecutive quarters (i.e. at least 6 data points). For each hedge, please include:
    a. Description;
    b. Materiality;
    c. Whether used for SA-CVA (vs. BA-CVA);
    d. How they are used in the SA-CVA calculation (reference credit vs. counterparty credit spread).
6. Using the same parallel run data, please provide the list of the counterparty names and their designated buckets.
7. Using the same parallel run data, for every counterparty credit spread, please indicate if its own data is used (for the purpose of determining the term structure of market-implied probability of default, see Article 5.7(1)) or a proxy. In the latter case, please provide the bucketing classification of the given name according to the proxy model used (e.g. INDUSTRY == ENERGY / REGION == US / RATING == BBB).
8. Using the same parallel run data, please provide the list of the reference names and their designated buckets.
9. Using the same parallel run data, please explain which dataset is used to base the classification of each reference name in the list, and provide a commentary and/or any additional data that drove the classification for each reference name.
10. If the CDS RFE model makes use of proxies and/or is based on a multi-factor approach: for every reference name, please provide the bucketing classification of the given name according to the model (e.g. INDUSTRY == ENERGY / REGION == US / RATING == BBB).

11. Using the same parallel run data, please provide the list of the equity names and their designated buckets.
12. Using the same parallel run data, please explain which dataset is used to base the classification of each equity name in the list, and provide a commentary and/or any additional data that drove the classification for each equity name.
13. If the Equity RFE model makes use of proxies and/or is based on a multi-factor approach: for every equity name, please provide the bucketing classification of the given name according to the model (e.g. INDUSTRY == ENERGY / REGION == US / SIZE == LARGE CAP).
14. Using the same parallel run data, please provide the list of the commodities curves and their designated buckets.

C Appendices

C1 Worksheet template for sample portfolio for unit tests

Please refer to the specified sample portfolio to run unit tests and provide the results in the template.