

Basel Committee on Banking Supervision

MAR

Calculation of RWA for market risk

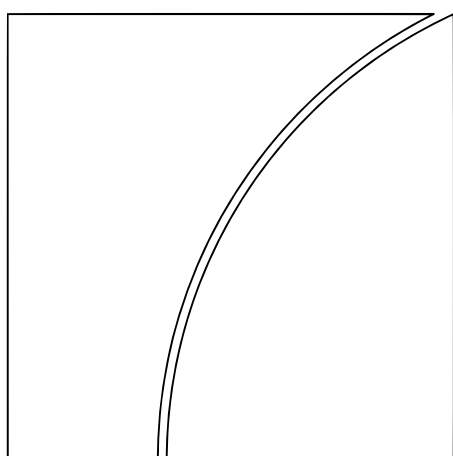
MAR50

Credit valuation adjustment framework

This chapter sets out how to calculate capital requirements to cover credit valuation adjustment risk.

Version effective as of 15 December 2019

First version in the format of the consolidated framework.



BANK FOR INTERNATIONAL SETTLEMENTS

This document has been generated on 29/08/2026 based on the Basel Framework data available on the BIS website (www.bis.org).

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Credit valuation adjustment risk capital requirement

50.1

The risk-weighted assets (RWA) for credit valuation adjustment (CVA) risk are determined by multiplying the capital requirements calculated as set out in this chapter by 12.5.

50.2

In addition to the default risk capital requirements for counterparty credit risk determined based on the standardised or internal ratings-based (IRB) approaches for credit risk, a bank must add a capital requirement to cover the risk of mark-to-market losses on the expected counterparty risk (such losses being known as CVA) to over-the-counter (OTC) derivatives. The CVA capital requirement will be calculated in the manner set forth below depending on the bank's approved method of calculating capital requirements for counterparty credit risk and specific interest rate risk. A bank is not required to include in this capital requirement:

1. transactions with a qualifying central counterparty; and
2. securities financing transactions (SFTs), unless their supervisor determines that the bank's CVA loss exposures arising from SFT transactions are material.

8 FAQs

FAQ1 *Can the Basel Committee clarify whether the 1.06 scaling factor applied to RWA for credit risk [CRE30.4](#) will apply to the CVA RWA category? Our expectation is that the calculation of CVA RWA is a market risk calculation and the 1.06 scaling factor should not be applied.*

The 1.06 scaling factor does not apply. The CVA volatility formula multiplied with the factor 3 (under the quantitative standards described in [MAR30.16](#)) produces a capital number directly, rather than an RWA. Multiplying the CVA volatility charge by 12.5 to get an RWA equivalent would then not involve the 1.06 scalar.

FAQ2 *The counterparty credit risk rules in [CRE50](#) to [CRE55](#) include a number of areas that have not previously received regulatory scrutiny. Does the Basel Committee consider that supervisory approvals will be required for Basel III, specifically in the areas of: (1) proxy models in respect of credit default swap (CDS) spread used where no direct CDS available; (2) applicability of index hedges to obtain the base 50% offset of the new CVA capital requirement; (3) if the basis risk requirement for index hedges is sufficient to satisfy the supervisor, will this automatically enable a 100% offset or is it intended to be a sliding scale between 50% and 100%; (4) overall system and process infrastructure to deliver the Basel III changes, even if covered by existing approved models and processes; (5) choice of stress periods to ensure industry consistency (in this regard, for value-at-risk, or VaR, calculation purposes, how should the one year period within the three year stress period be identified); and (6) the fundamental review of the Trading Book will include further analysis of the new CVA volatility charge - is there any indication as to implementation date and, in the meantime, should CVA market risk sensitivities be included in the bank's VaR calculation.*

The use of an advanced or standardised CVA risk capital requirement method depends on whether banks have existing regulatory approvals for both internal models method and specific risk of debt instruments in their VaR model. Supervisors will review each element of banks' CVA risk capital requirement framework based on each national supervisor's normal supervisory review process.

- FAQ3** *How should purchased credit derivative protection against a banking book exposure that is subject to the double-default framework [CRE32.27](#) or the substitution approach [CRE22.32](#) to [CRE22.34](#) be treated in the context of the CVA capital requirement?*
Purchased credit derivative protection against a banking book exposure that is subject to the double default framework ([CRE32.27](#)) or the substitution approach ([CRE22.32](#) to [CRE22.34](#)) and where the banking book exposure itself is not subject to the CVA capital requirement, will also not enter the CVA capital requirement. This purchased credit derivative protection may not be recognised as hedge for any other exposure. (This is consistent with [CRE51.16](#) that says that the exposure at default, or EAD, for counterparty credit risk from such instruments is zero. It is also consistent in the sense that hedging should not increase the capital requirement.)
- FAQ4** *How should purchased credit derivative protection against a counterparty credit risk exposure that is subject to the double-default framework ([CRE32.27](#)) or the substitution approach ([CRE22.32](#) to [CRE22.34](#)) be treated in the context of the CVA capital-charge?*
For purchased protection against a counterparty credit risk exposure that is itself subject to the CVA capital requirement, the procedure is analogous to the substitution approach. That is:
a) in the advanced CVA charge, the exposure time-profile (EE_i) of the original counterparty credit risk gets reduced by the protected amount and the exposure profile to the protection seller gets increased by the amount for which it has sold protection. This substitution is done for time buckets whose valuation time (t_i) is smaller than the maturity of the purchased protection but not for the buckets with larger valuation times.
b) In the standardised CVA capital requirement, the protected amount times the residual maturity of the protection gets deducted from the $M \times EAD$ of the original counterparty credit risk and added to the $M \times EAD$ of the protection seller. Alternatively, if the purchased protection is an eligible hedge within the CVA capital requirement ([MAR50.13](#) and [MAR50.14](#)), then the credit protection may be recognised as a CDS hedge as specified in the rules for the CVA capital requirement. In the latter case, the CVA capital requirement must also reflect the CVA-risk of the credit protection. That is, despite [CRE51.16](#) which still applies in the context of the default-risk charge, the counterparty credit risk exposure towards the protection seller may not be set to zero in the context of the CVA capital requirement.
- FAQ5** *Is a bank required to calculate the CVA capital requirement daily?*
Banks should discuss the frequency with which the CVA capital requirement needs to be computed with their national supervisor. To receive regulatory approval to use the advanced CVA approach, banks are generally expected to have the systems' capability to calculate the CVA capital requirement on a daily basis, but would not be expected or required to calculate it on a daily basis. Instead, banks are required to calculate the CVA capital requirement at least on a monthly basis in which expected exposure is also required to be calculated. In this case, banks are to calculate VaR and stressed VaR by taking the average over a quarter.

- FAQ6** *We seek clarification of whether the reduction in EAD by incurred CVA extends to the calculation of expected loss amounts for banks applying IRB risk weights. We would expect the reduction in EAD to be extended to expected loss (EL) but this would necessitate amendments to other requirements (eg [CRE35.2](#)). Could the Committee confirm that amendments to the calculation of CVA risk and default risk capital will be clarified to refer to expected loss capital deduction as well as RWA? The Committee confirms that, after the quantitative impact study undertaken after the release of the Basel III Accord, incurred CVA will be recognised as a reduction in EAD when calculating the default risk capital. Incurred CVA is not permitted to be counted as eligible provisions under [CAP30.13](#), ie banks that are currently recognising CVA as general provisions to offset expected loss in the IRB framework should no longer count CVA as provisions. Nevertheless, EL can be calculated based on the reduced “outstanding EAD” which reflects incurred CVA (see [CRE51.12](#)). That is, for derivatives, the EL is calculated as $PD \times LGD \times (\text{outstanding EAD})$.*
- FAQ7** *Could the treatment of defaulted exposures in terms of CVA capital requirement and incurred CVA be clarified? Banks are not required to calculate the CVA capital requirement for defaulted counterparties, where the loss due to default has been recognised for accounting and reporting purposes and provided that, as a result of the default, the derivative contracts have been transformed into a simple claim and no longer have the characteristics of a derivative.*
- FAQ8** *Is an intercompany transaction with a zero risk weight subject to a CVA capital requirement? Industry members would like confirmation on a technical note that, as with the downgrade-and-default charge within the Basel II framework, the CVA-variability charge associated with affiliate exposures will net out under group consolidated reporting. As per the group consolidated reporting, no regulatory capital requirement (including a CVA capital requirement) applies to intercompany transactions. This should include the relevant CVA hedge that is only with an internal desk; internal hedges are not recognised for regulatory capital purposes because they are eliminated in consolidation.*

Advanced CVA risk capital requirement

50.3

Banks with internal models method (IMM) approval for counterparty credit risk and approval to use the market risk internal models approach for the specific interest-rate risk of bonds must calculate this additional capital requirement by modelling the impact of changes in the counterparties' credit spreads on the CVAs of all OTC derivative counterparties, together with eligible CVA hedges according to [MAR50.12](#) to [MAR50.14](#), using the bank's VaR model for bonds. This value-at-risk (VaR) model is restricted to changes in the counterparties' credit spreads and does not model the sensitivity of CVA to changes in other market factors, such as changes in the value of the reference asset, commodity, currency or interest rate of a derivative. Regardless of the accounting valuation method a bank uses for determining CVA, the CVA capital requirement calculation must be based on the following formula for the CVA of each counterparty, where:

1. t_i is the time of the i -th revaluation time bucket, starting from $t_0=0$.
2. t_r is the longest contractual maturity across the netting sets with the counterparty.
3. s_i is the credit spread of the counterparty at tenor t_i , used to calculate the CVA of the

counterparty. Whenever the credit default swap (CDS) spread of the counterparty is available, this must be used. Whenever such a CDS spread is not available, the bank must use a proxy spread that is appropriate based on the rating, industry and region of the counterparty.

4. LGD_{MKT} is the loss-given-default of the counterparty and should be based on the spread of a market instrument of the counterparty (or where a counterparty instrument is not available, based on the proxy spread that is appropriate based on the rating, industry and region of the counterparty). It should be noted that this LGD_{MKT} , which inputs into the calculation of the CVA risk capital requirement, is different from the loss-given-default (LGD) that is determined for the IRB and counterparty credit risk (CCR) default risk charge, as this LGD_{MKT} is a market assessment rather than an internal estimate.
5. The first factor within the sum represents an approximation of the market implied marginal probability of a default occurring between times t_{i-1} and t_i . Market implied default probability (also known as risk-neutral probability) represents the market price of buying protection against a default and is in general different from the real-world likelihood of a default.
6. EE_i is the expected exposure to the counterparty at revaluation time t_i , as defined in [CRE53.12](#) (regulatory expected exposure), where exposures of different netting sets for such counterparty are added, and where the longest maturity of each netting set is given by the longest contractual maturity inside the netting set.
7. D_i is the default risk-free discount factor at time t_i , where $D_0 = 1$.

$$CVA = (LGD_{MKT}) \cdot \sum_{i=1}^T \text{Max} \left(0; \exp \left(-\frac{s_{i-1} \cdot t_{i-1}}{LGD_{MKT}} \right) - \exp \left(-\frac{s_i \cdot t_i}{LGD_{MKT}} \right) \right) \cdot \left(\frac{EE_{i-1} \cdot D_{i-1} + EE_i \cdot D_i}{2} \right)$$

4 FAQs

FAQ1 [MAR50.3](#) permits the use of proxy CDS spreads. As the majority of banks have portfolios that extend well beyond the scope of bond issuers, proxying a CDS spread will be the norm rather than the exception. We consider this approach to be acceptable given an appropriate model. Is this correct?

Yes, that is correct. To the extent that single-name CDS spread data is not available, banks should use a proxy spread, the methodology for determining the proxy being part of the approved internal model for specific interest rate risk.

FAQ2 We seek clarification of the calculation of LGD for the purposes of [MAR50.3](#) where market instruments or proxy market information is not available). For example, for sovereign entities the identification of a market spread or a proxy spread is often not possible other than in distressed scenarios. Also, we seek clarity on how to take into account potential security packages or other credit enhancement provisions that could be available in the Credit Support Annex or the trade confirmation. While the Committee recognises that there is often limited market information of LGDMKT (or equivalently the market implied recovery rate), the use of LGDMKT for CVA purposes is deemed most appropriate given the market convention of CVA. As it is also the market convention to use a fixed recovery rate for CDS pricing purposes, banks may use that information for purposes of the CVA risk capital requirement in the absence of other information. In cases where a netting set of derivatives has a different seniority than those derivative instruments that trade in the market from which LGDMKT is inferred, a bank may adjust LGDMKT to reflect this difference in seniority. Note that bank specific risk mitigants are not used for this calculation.

FAQ3 [MAR50.3](#) states: “Whenever such a CDS spread is not available, the bank must use a proxy spread that is appropriate based on the rating, industry and region of the counterparty.” For counterparties (eg small or medium-sized entities) where no market data is available, neither CDS spreads nor traded debt, VaR modelling based on proxy index spreads is hard to validate. Is it left to the national supervisor to decide whether these may be modelled in advanced CVA or should standardised CVA be compulsory? The recognition of index hedges is very different in advanced CVA and standardised CVA, so this could lead to material differences in implementation.
Yes, it is left to national supervisors to decide.

FAQ4 The regulatory CVA formula contains the terms EE_i and D_i which assume in the case of interest rate related exposures (eg interest rate swaps) that the discount factor and IR exposures are independent. Is the bank allowed to replace the terms $EE_i \times D_i$ by E [discount factor $\times \max(0, V(t))$]?
No, the regulatory formula is not to be changed.

50.4

The formula in [MAR50.3](#) must be the basis for all inputs into the bank’s approved VaR model for bonds when calculating the CVA risk capital requirement for a counterparty. For example, if this approved VaR model is based on full repricing, then the formula must be used directly. If the bank’s approved VaR model is based on credit spread sensitivities for specific tenors, the bank must base each credit spread sensitivity on the following formula:

$$\text{Regulatory CS01}_i = 0.0001 \cdot t_i \cdot \exp\left(-\frac{s_i \cdot t_i}{LGD_{MKT}}\right) \cdot \left(\frac{EE_{i-1} \cdot D_{i-1} - EE_{i+1} \cdot D_{i+1}}{2}\right)$$

50.5

This derivation of the formula in [MAR50.3](#) assumes positive marginal default probabilities before and after time bucket t_i and is valid for i

50.6

If the bank’s approved VaR model uses credit spread sensitivities to parallel shifts in credit spreads (Regulatory CS01), then the bank must use the following formula (the derivation of which assumes positive marginal default probabilities):

$$\text{Regulatory CS01} = 0.0001 \cdot \sum_{i=1}^T \left(t_i \cdot \exp\left(-\frac{s_i \cdot t_i}{LGD_{MKT}}\right) - t_{i-1} \cdot \exp\left(-\frac{s_{i-1} \cdot t_{i-1}}{LGD_{MKT}}\right) \right) \cdot \left(\frac{EE_{i-1} \cdot D_{i-1} + EE_i \cdot D_i}{2}\right)$$

50.7

If the bank’s approved VaR model uses second-order sensitivities to shifts in credit spreads (spread gamma), the gammas must be calculated based on the formula in [MAR50.3](#).

50.8

Banks with IMM approval for the majority of their businesses, but which use the standardised approach for counterparty credit risk (SA-CCR) for certain smaller portfolios, and which have approval to use the market risk internal models approach for the specific interest rate risk of bonds, will include these non-IMM netting sets into the CVA risk capital requirement, according

to [MAR50.3](#), unless the national supervisor decides that [MAR50.15](#) should apply for these portfolios. Non-IMM netting sets are included into the advanced CVA risk capital requirement by assuming a constant expected exposure (EE) profile, where EE is set equal to the exposure-at-default (EAD) as computed under the SA-CCR for a maturity equal to the maximum of: (i) half of the longest maturity occurring in the netting set; and (ii) the notional weighted average maturity of all transactions inside the netting set. The same approach applies where the IMM model does not produce an EE profile.

50.9

For exposures to certain counterparties, the bank's approved market risk VaR model may not reflect the risk of credit spread changes appropriately, because the bank's market risk VaR model does not appropriately reflect the specific risk of debt instruments issued by the counterparty. For such exposures, the bank is not allowed to use the advanced CVA risk charge. Instead, for these exposures the bank must determine the CVA risk charge by application of the standardised method in [MAR50.15](#) and [MAR50.16](#). Only exposures to counterparties for which the bank has supervisory approval for modelling the specific risk of debt instruments are to be included into the advanced CVA risk charge.

50.10

The CVA risk capital requirement consists of both general and specific credit spread risks, including stressed VaR but excluding the incremental risk capital requirement. The VaR figure should be determined in accordance with the quantitative standards described in [MAR30.12](#) to [MAR30.15](#). It is thus determined as the sum of the non-stressed VaR component and the stressed VaR component. For the calculation of each component:

1. When calculating the non-stressed VaR, current parameter calibrations for expected exposure must be used.
2. When calculating the stressed VaR future counterparty EE profiles (according to the stressed exposure parameter calibrations as defined in [CRE53.51](#)) must be used. The period of stress for the credit spread parameters should be the most severe one-year stress period contained within the three-year stress period used for the exposure parameters.¹

1 Footnote, 3 FAQs

- ¹ *Note that the three-times multiplier inherent in the calculation of a bond VaR and a stressed VaR will apply to these calculations.*

FAQ1 [MAR50.10](#) requires a period of stress for credit spread parameters to be used in determining future counterparty EE profiles under the stressed VaR capital component of the advanced CVA risk capital requirement. We seek confirmation that the credit spread of the counterparty input into the CVA and regulatory CS01 formulae (ie si) is not impacted by this. That is, the si inputs remain the same for both the VaR and stressed VaR capital calculations of the CVA risk capital requirement.

It depends on the specific risk VaR model. If the VaR model uses a sensitivity (or Greek) based approach, the credit spread values in the 1st and 2nd-order sensitivities (as in [MAR50.7](#)) are the current levels ("as of valuation date") for both unstressed VaR and stressed VaR. In contrast, if the VaR model uses a full-revaluation approach using the CVA formula as in [MAR50.3](#), the credit spread inputs should be based on the relevant stress scenarios.

FAQ2 Does a specific backtesting on the CVA VaR need to be conducted or is the backtesting of the market VaR considered as relevant also for the CVA VaR? In particular, [MAR50](#) (footnote 1) says that “the three-times multiplier inherent in the calculation of a bond VaR and a stressed VaR will apply to these calculations.” Does it mean that the multipliers applied to the CVA VaR have to be the same as the multipliers applied to the market risk VaR (ie at least 3 + backtesting of market risk VaR) or does a specific multiplier for the CVA capital requirement need to be calculated depending on the results of the backtesting of the CVA VaR? Banks are not required to conduct a separate VaR backtesting for purposes of the CVA capital requirement. [MAR50](#) (Footnote 1) was intended to require banks to apply at least a three-times multiplier and a potentially higher multiplier for CVA purposes where appropriate.

FAQ3 From [MAR50.10](#), our understanding is that the periods involved in the calculation of stressed Effective expected positive exposure (EPE) and the CVA capital requirement, according to [MAR50.10\(2\)](#), are as follows:
A period of stress to the credit default spreads of a bank’s counterparties. The length of this period is not defined (in [CRE53.51](#)); A three-year period containing period (1). This three-year period is used for calibration when calculating stressed Effective EPE; The one-year period of most severe stress to credit spreads within period (2). This one-year period is used when calculating stressed VaR, as described in [MAR50.10\(2\)](#). In general, period (3) will be different from the one-year period used to calculate stressed VaR, as described in [MAR30.14](#) to [MAR30.17](#). The difference is due to period (3) being a period of stress to credit spreads, whereas the market risk one-year period is a period of stress to the bank’s portfolio and therefore to all types of market risk factor that affect the portfolio.
Please confirm our understanding of the above.
Yes, this is correct. The one-year period of stress used for the stressed CVA VaR calculation is the most severe year within the three-year period used for the stressed Effective EPE calculation. This one-year period may, and will probably, be different to the one-year period used for market risk calculations.

50.11

This additional CVA risk capital requirement is the standalone market risk charge, calculated on the set of CVAs (as specified in [MAR50.3](#)) for all OTC derivatives counterparties, collateralised and uncollateralised, together with eligible CVA hedges. Within this standalone CVA risk capital requirement, no offset against other instruments on the bank’s balance sheet will be permitted (except as otherwise expressly provided herein).

1 FAQ

FAQ1 A strict interpretation of [MAR50.12](#) and [MAR50.13](#) suggests that market LGDs (based on bond recovery rates) should be used instead of LGDs that reflect internal experience, potential security packages or other credit enhancement that could be available in the Credit Support Annex or the trade confirmation. Is this strict interpretation intended by the Committee?
Yes, market LGDs (LGDMKT) based on market recovery rates are used as inputs into the CVA risk capital requirement calculation. LGDMKT is a market assessment of LGD that is used for pricing the CVA, which might be different from the LGD that is internally determined for the IRB and CCR default risk charge. In other words, LGDMKT needs to be consistent with the derivation of the hazard rates – and therefore must reflect market expectations of recovery rather than mitigants or experience specific to the bank.

50.12

Only hedges used for the purpose of mitigating CVA risk, and managed as such, are eligible to be included in the VaR model used to calculate the above CVA capital requirement or in the standardised CVA risk capital requirement set forth in [MAR50.15](#) and [MAR50.16](#). For example, if a CDS referencing an issuer is in the bank's inventory and that issuer also happens to be an OTC counterparty but the CDS is not managed as a hedge of CVA, then such a CDS is not eligible to offset the CVA within the standalone VaR calculation of the CVA risk capital requirement.

1 FAQ

FAQ1 We seek clarity on the treatment of internal trades and CVA VaR. There is a concern that if a CVA desk buys protection from another desk (within the bank) which faces "the street" it would not get CVA credit although the CVA VAR would be flat ([MAR50.12](#)). Only hedges that are with external counterparties are eligible to reduce CVA. A hedge that is only with an internal desk cannot be used to reduce CVA.

50.13

The only eligible hedges that can be included in the calculation of the CVA risk capital requirement under [MAR50.3](#) or [MAR50.15](#) and [MAR50.16](#) are single-name CDSs, single-name contingent CDSs, other equivalent hedging instruments referencing the counterparty directly, and index CDSs. In case of index CDSs, the following restrictions apply:

1. The basis between any individual counterparty spread and the spreads of index CDS hedges must be reflected in the VaR. This requirement also applies to cases where a proxy is used for the spread of a counterparty, since idiosyncratic basis still needs to be reflected in such situations. For all counterparties with no available spread, the bank must use reasonable basis time series out of a representative bucket of similar names for which a spread is available.
2. If the basis is not reflected to the satisfaction of the supervisor, then the bank must reflect only 50% of the notional amount of index hedges in the VaR.

7 FAQs

FAQ1 With regard to [MAR50.3](#): we seek confirmation as to whether the risk mitigation available for EE profiles remains unchanged. Specifically, please confirm our understanding that the post risk mitigated exposure values are used in the CVA capital requirement, whilst the additional mitigation is also allowed for the CVA capital requirement itself, via eligible CVA hedges, which is undertaken post any EE mitigation available.

The EEs or the EADs used as inputs in the advanced and standardised CVA risk capital requirement must not have been subject to any adjustments arising from credit protection that a firm intends to include as an eligible hedge in the CVA risk capital requirement (see [MAR50.12](#) to [MAR50.14](#)). However, the use of other types of credit risk mitigation (eg collateral and/or netting) reducing the EE or the EAD amounts in the CCR framework can be maintained when these EE or EAD feed the CVA risk capital requirement.

- FAQ2** *Industry seeks clarification as to whether (i) CDS swaptions are eligible CVA hedge instruments; and if so, (ii) whether both single name and index CDS swaptions are eligible.*
A CDS swaption can be considered as an equivalent hedging instrument, and therefore CDS swaptions are eligible hedge instruments, in both single-name and index CDS cases, insofar as the contract does not contain a knock-out clause, ie the option contract is not terminated following a credit event. As per banks applying the advanced CVA risk capital requirement (see [MAR50.3](#) to [MAR50.14](#)), their VaR model should properly capture the non-linear risk of swaptions. As regards banks that use the standardised CVA approach, they may apply the delta-adjusted notional to reflect the moneyness of the option into the standardised CVA formula.
- FAQ3** *Industry seeks further clarifications as to how the following two cases of different risk characteristics associated with CVA hedge providers should be treated for CVA capital requirement purposes. Is a single name CDS (or a basket of CDS that is not tranching) an eligible CVA hedge if the entity that provides protection is any kind of special purpose entity (SPE), private equity fund, pension fund, or any other non-bank financial entity? Does the answer change if the bank is providing a liquidity facility or another kind of credit enhancement to the protection provider, whereby the bank is effectively exposed to a certain tranche of the underlying default risk? (That is, a bank buys CDS protection, while an additional transaction or facility is transferring a tranche of the default risk back to the bank.) The liquidity facility or credit enhancement would be on accrual accounting so that no CVA risk is transferred back to the bank via that facility.*
There are no specific restrictions on the protection provider for the purposes of the CVA hedges. Eligible CVA hedges can be bought from SPEs, private equity funds, pension funds, or other non-bank financial entities as long as the general eligibility criteria set by the Basel framework (see in particular [CRE22.90](#)) are met. If the bank remains effectively exposed to a tranche of the underlying default risk by providing any form of credit enhancement to the protection provider, then the CDS is not an eligible CVA hedge because, in economic substance, the transaction becomes a tranching CDS protection, regardless of whether the credit enhancement is on accrual accounting. All kinds of engagement between the bank and the protection provider need to be taken into account in order to determine whether the protection is effectively tranching.
- FAQ4** *What are the eligible hedges for the CVA volatility charge when a transaction has securitisations as underlying and the firm is not allowed to use a VaR model to calculate market risk capital for securitisations?*
While it is true that banks are not allowed to use a specific risk VaR model for securitised products, this is not applicable for CVA capital requirement purposes. Different product types of derivatives (including securitised products) form expected exposures underpinning CVA to a certain counterparty, whereas the eligible hedge instruments apply to those credit hedges referencing a bank's counterparties (via either single-name or index). The supervisory approval of the market risk VaR model for advanced CVA risk capital requirement purposes should apply to specific interest risk VaR, ie a VaR model for debt instruments. This VaR can be used to reflect the risk of credit spread changes for single-name CDS products, including those referencing debt instruments issued by the counterparty. Hence, banks should not encounter any issues of calculating the advanced CVA even if the regulatory approval for specific risk VaR model for securitised products is not available.

FAQ5 *When hedging CVA, given the underlying derivatives portfolio (netting sets) is changing over time, excess CDS hedges bought cannot always be unwound and are sometimes “cancelled” by selling protection (ie the CVA desk is selling protection). The eligible CVA over-hedge is the hedge to this protection sold. How is this to be recognised under Basel III?*

Since the dedication of CDS-bought protection for the purpose of CVA hedging needs to be done explicitly, the same process, documentation and controls can be and are expected to be applied for bought protection as well by partial unwinding the excess CDS hedges by making use of the same instrument via the opposite position; this being based on approval of the national supervisor.

If the national supervisor does not agree to recognise the inclusion of sold protection in the framework (standalone portfolio) of CVA calculation and CVA hedging, respective trades are treated as any other derivative or any CDS that is not part of CVA hedging.

FAQ6 *From [MAR50.13](#), we would like clarification in terms of eligibility of hedges. Is a CDS indirectly referencing a counterparty (eg a related entity) an eligible hedge? Can you confirm inclusion of sovereigns in the CVA capital requirement and ability to use sovereign CDS as hedges?*

Any instrument of which the associated payment depends on cross default (such as a related entity hedged with a reference entity CDS and CDS triggers) is not considered as an eligible hedge. When restructuring is not included as a credit event in the CDS contract, for the purposes of calculating the advanced CVA capital requirement, the CDS will be recognised as in the market risk framework for VaR.

For the purposes of the Standardised CVA capital requirement, the recognition of the CDS hedge will be done according to the standardised measurement method in the market risk framework. The Committee confirms that sovereigns are included in the CVA capital requirement, and sovereign CDS is recognised as an eligible hedge.

FAQ7 *Industry seeks further clarification as to whether a single-name CDS for which the bank uses proxies can also be considered as eligible hedges. The answer to [MAR50.13](#)(FAQ6) states: “Any instrument of which the associated payment depends on cross default (such as a related entity hedged with a reference entity CDS and CDS triggers) is not considered as an eligible hedge.” A question has arisen whether this means that a single-name CDS cannot be recognised against an exposure to a related counterparty (for example a sovereign CDS against a province in the same country) even if the VaR model captures the basis risk between the exposure and the hedge, or was this clause aimed at instruments other than single-name CDS, that pay out only if there is more than one default event.*

Single -ame proxy hedges cannot be recognised in the advanced CVA capital requirement, irrespective of whether the basis risk between the exposure and the hedge is appropriately captured in the model. In fact, [MAR50.13](#) admits as eligible hedges only instruments (such as CDSs and contingent CDSs) referencing the counterparty directly or index CDSs. As an example, consider an exposure to counterparty B with no CDS traded on its name (eg a province within a country) whose spread is approximated by that of counterparty A (eg the central government of that country). The only eligible hedge of the exposure to counterparty B would be an index C containing counterparty A, provided the bank can incorporate the basis between C and A into its VaR model to the satisfaction of its supervisor.

Further, to the extent that single-name proxy hedges are not to be recognised in the advanced CVA capital requirement on one hand, but a proxy spread is required to be used whenever the relevant CDS spread is not available on the other hand, banks should be further noted that they are prohibited from, or should derecognise, over hedging on a single-name level.

To illustrate this, in the above example, whenever the bank over hedges its exposure to A, these hedges on A will effectively act as a proxy hedge for the exposure to B; this is true irrespective of whether B is mapped to the CDS spread of A or not. Therefore, the firm should set a cap on the recognition of all single-name hedges.

50.14

Other types of counterparty risk hedges (ie those not listed in [MAR50.13](#)) must not be reflected within the calculation of the CVA capital requirement, and these other hedges must be treated as any other instrument in the bank’s inventory for regulatory capital purposes. Tranched or nth-to-default CDSs are not eligible CVA hedges. Eligible hedges that are included in the CVA capital requirement must be removed from the bank’s market risk capital requirement calculation.

1 FAQ

FAQ1 *With respect to identifying eligible hedges to the CVA risk capital requirement, the Basel III provisions state that “tranched or nth-to-default CDSs are not eligible CVA hedges” ([MAR50.14](#)). Can the Basel Committee confirm that this does not refer to tranched CDS referencing a bank’s actual counterparty exposures and refers only to tranched index CDS hedges? Also, can the Committee clarify that Risk Protection Agreements, credit-linked notes, short bond positions as CVA hedges, and First Loss on single or baskets of entities can be included as eligible hedges?*

All tranched or nth-to-default CDS are not eligible. In particular, credit-linked notes and first loss are also not eligible. Single name short bond positions may be eligible hedges if the basis risk is captured. When further clarifications are needed, banks should consult with supervisors.

Standardised CVA risk capital requirement

50.15

When a bank does not have the required approvals to use [MAR50.3](#) to calculate a CVA capital requirement for its counterparties, the bank must calculate a portfolio capital requirement using the following formula, where:

1. h is the one-year risk horizon (in units of a year), $h = 1$.
2. w_i is the weight applicable to counterparty i . Counterparty i must be mapped to one of the seven weights w_i based on its external rating, as shown in the table below. When a counterparty does not have an external rating, the bank must, subject to supervisory approval, map the internal rating of the counterparty to one of the external ratings.
3. EAD_i^{total} is the EAD of counterparty i (summed across its netting sets), including the effect of collateral as per the existing IMM or SA-CCR rules as applicable to the calculation of counterparty risk capital requirements for such counterparty by the bank. For non-IMM banks the exposure should be discounted by applying the factor
$$\frac{(1 - e^{-0.05 \times M_i})}{(0.05 \times M_i)}$$
. For IMM banks, no such discount should be applied as the discount factor is already included in M_i .
4. B_i is the notional of purchased single-name CDS hedges (summed if more than one position) referencing counterparty i , and used to hedge CVA risk. This notional amount
$$\frac{(1 - e^{-0.05 \times M_i^{hedge}})}{(0.05 \times M_i^{hedge})}$$
 should be discounted by applying the factor .
5. B_{ind} is the full notional of one or more index CDS of purchased protection, used to hedge CVA risk. This notional amount should be discounted by applying the factor
$$\frac{(1 - e^{-0.05 \times M_{ind}})}{(0.05 \times M_{ind})}$$
6. w_{ind} is the weight applicable to index hedges. The bank must map indices to one of the seven weights w_i based on the average spread of index 'ind'.
7. M_i is the effective maturity of the transactions with counterparty 'i'. For IMM-banks, M_i is to be calculated as per [CRE53.20](#). For non-IMM banks, M_i is the notional weighted average maturity as referred to in [CRE32.44](#). However, for this purpose, M_i should not be capped at 5 years.
8. M_{ihedge} is the maturity of the hedge instrument with notional B_i (the quantities $M_{ihedge} \times B_i$ are to be summed if these are several positions).
9. M_{ind} is the maturity of the index hedge "ind". In case of more than one index hedge position, it is the notional weighted average maturity.
10. For any counterparty that is also a constituent of an index on which a CDS is used for hedging CCR, the notional amount attributable to that single name (as per its reference entity weight) may, with supervisory approval, be subtracted from the index CDS notional amount and treated as a single name hedge (B_i) of the individual counterparty with maturity based on the maturity of the index.

$$K = 2.33 \cdot \sqrt{h} \cdot \sqrt{\left(\sum_i 0.5 \cdot w_i \cdot (M_i \cdot EAD_i^{total} - M_i^{hedge} B_i) - \sum w_{ind} \cdot M_{ind} \cdot B_{ind} \right)^2 + \sum_i 0.75 \cdot w_i^2 \cdot (M_i \cdot EAD_i^{total} - M_i^{hedge} B_i)^2}$$

4 FAQs

- FAQ1** [MAR50.15](#) states that, in the case of index CDSs, the following restrictions apply: “*M_i is the effective maturity of the transactions with counterparty i. For IMM banks, M_i is to be calculated as per [CRE53.20](#). For non-IMM banks, M_i is the notional weighted average maturity as referred to in [CRE32.44](#)”. [CRE32.41](#) includes in it a cap which means that M will not be greater than 5 years. Can the Basel Committee provide clarity on whether this cap still applies for the purpose of calculating M_i above?
For CVA purposes, the 5-year cap of the effective maturity will not be applied. This applies to all transactions with the counterparty, not only to index CDSs. Maturity will be capped at the longest contractual remaining maturity in the netting set.*
- FAQ2** [MAR50.15](#)(7) talks about effective maturity at a counterparty level. In rolling up effective maturity from netting sets to counterparty, do we apply the one-year floor first and then do a weighted average by notional, or do we calculate the weighted average by notional at counterparty level and then apply the floor?
The 1-year floor applies at a netting set level. If there is more than one netting set to the same counterparty, an effective maturity (M) should be determined separately for each netting set, the EAD of each netting set should be discounted according to its individual maturity and the quantities M x EAD should be summed.
- FAQ3** If a bank has more than one CDS contract on the same counterparty, the instructions for the standardised CVA capital requirement demand a different discounting than in the case of several index CDS. For single-name CDS, each contract gets discounted using its individual maturity and the quantities M x B are to be summed. In contrast, for index-CDS, the full notional (summed over all index contracts) must be discounted using the average maturity. Is there a reason for this difference in the treatment of single-name vs index hedges?
For index CDS, the same treatment should be applied as described for single-name CDS. That is, each index contract gets discounted using its individual maturity and the quantities M x B are to be added.
- FAQ4** In the standardised CVA capital requirement formula, there are “weights” for individual counterparties (w_i) and for credit indexes (wind). “Weights” w_i are uniquely determined by the counterparty’s rating from the table in [MAR50.15](#). How should one determine “weights” wind?
Banks should first look through index constituents’ ratings so as to determine the corresponding weight for each constituent, which then should be weight-averaged for determining the weight for the index.

50.16

The weights referenced in [MAR50.15](#) above are set out in the following table, and are based on the external rating of the counterparty:²

Rating	Weight w _i
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AAA	0.7%
AA	0.7%
A	0.8%
BBB	1.0%
BB	2.0%
B	3.0%
CCC	10.0%

1 Footnote

- [2](#) *The notations follow the methodology used by one institution, Standard & Poor's. The use of Standard & Poor's credit ratings is an example only; those of some other approved external credit assessment institutions could be used on an equivalent basis. The ratings used throughout this document, therefore, do not express any preferences or determinations on external assessment institutions by the Committee.*