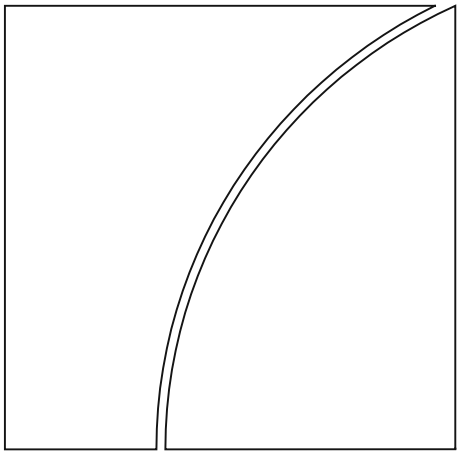
Basel Committee
on Banking Supervision



Basel III: The standardised approach for measuring counterparty credit risk exposures: Frequently asked questions

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Introduction

The Basel Committee on Banking Supervision has received a number of interpretation questions related to the Standardised Approach for measuring counterparty credit risk (SA-CCR), as published in March 2014 (and revised in April 2014). The SA-CCR will replace both current non-internal model approaches, the Current Exposure Method (CEM) and the Standardised Method (SM).

To help ensure consistent global implementation of its standards, the Committee has agreed to periodically review frequently asked questions and publish answers along with any technical elaboration of the standards and interpretative guidance that may be necessary. This document presents a set of frequently asked questions that relate to the SA-CCR. The questions and answers are grouped according to different relevant areas.

General formula

1. Capping of margined EAD at otherwise un-margined EAD

We understand the capping of the exposure at default (EAD) at the otherwise unmargined EAD is motivated by the need to ignore exposure from a large threshold amount that would not realistically be hit by some small (or non-existent) transactions.

We have, however, come across a potential anomaly relating to this capping, namely in the case of margined netting sets comprising short-term transactions with a residual maturity of 10 business days or less. In this situation, the maturity factor (MF) weighting will be greater for a margined set than for a non-margined set, because of the 1.5 multiplier. That multiplier will, however, be negated by the capping. The anomaly would be magnified if there were some disputes under the margin agreement, ie where the margin period or risk (MPOR) would be doubled to 20 days but, again, negated by the capping to an unmargined calculation.

Yes, such an anomaly does exist. Nonetheless, this anomaly is generally expected to have no significant impact on banks' capital requirements. Thus, no modification to the standard is required.

PFE add-on

2. Definition of maturity (M_i), end date (E_i), start date (S_i) and latest contractual exercise date (T_i)

The document defines parameters M_i, E_i, S_i and T_i as dates. We think this is not technically correct, as from the examples and formulae these appear to be time periods (between two dates). Whilst the end date of each period is defined, could the Basel Committee please provide guidance as to what the start date should be? We think it is clear that for M the start date should be "Today" (because the text refers to "residual" maturity), and similarly for T (which is generally referred to as "time to maturity" in option pricing). However, we are unsure whether E and S should be calculated from the trade date or from "Today". We think "Today" would make sense (as the text clarifies that S should be set to zero for transactions that have already started), but would appreciate confirmation of this from the Basel Committee.

The formulae using the above parameters (eg in paragraphs *157 and 159) also define S, E and T as dates. These formulae won't work with dates. It may also be worth clarifying that the time periods should be expressed in years (not days). While Table 1 in paragraph 156 makes this clear, the rest of the text should use the correct notation, rather than having to rely on examples.*

The word "dates" should be interpreted as the time period from today to the date in question and should be measured in years.

3. Margin Period of Risk under the SA-CCR

Section 164 lists the criteria determining the Margin Period of Risk (MPOR). Is this meant to be a summary of the Internal Model Method (IMM) rules introduced in Basel III (as could be implied by footnote 17), or a deliberate simplification of those rules? We note for example that there is no mention of the criteria relating to illiquid collateral or illiquid transactions; are such cases alluded to in footnote 17 as "circumstances requiring an extended margin period of risk", or were they deliberately excluded?

The standard extends to SA-CCR the minimum MPOR rules specified for the IMM. Thus, the criteria relating to illiquid collateral or illiquid transactions also apply to the SA-CCR.

4. $MF^{(margined)}$ denominator

Could the Basel Committee please confirm that the denominator for the $MF^{(margined)}$ *calculation should be (say) 250? That is the number of business days in a year, considering the MPOR (numerator) is expressed in business days? Similarly, the flooring of the remaining maturity in the unmargined calculation to 10 business days can be specified as MAX(M, 10/250) (assuming M is expressed in years), effectively flooring* $MF^{(unmargined)}$ *to 0.2 (the square root of 10/250). Alternatively, the Basel Committee may wish to specify the remaining maturity floor as 14 calendar days rather than 10 business days.*

The units of the numerator and denominator of the calculation must be consistent. For example, if MPOR and "M" are measured in business days, then the denominator must also be expressed in business days. If MPOR and "M" are measures in years, then "1 year" is literally 1.

5. Supervisory delta adjustments

Why doesn't the supervisory delta adjustment calculation take the risk-free rate into account? It is identical to the Black-Scholes formula except that it's missing the risk-free rate.

Whenever appropriate, the forward (rather than spot) value of the underlying in the supervisory delta adjustments formula should be used in order to account for the risk-free rate as well as for possible cash flows prior to the option expiry (such as dividends).

6. Adjusted notional for equity and commodity volatility transactions

Paragraph 157 states that "For equity and commodity derivatives, the adjusted notional is defined as the product of the current price of one unit of the stock or commodity (eg a share of equity or barrel of oil) and the number of units referenced by the trade." How should this definition be applied to volatility transactions such as equity volatility swaps mentioned in paragraph 163?

For equity and commodity volatility transactions, the underlying volatility or variance referenced by the transaction should replace the unit price and contractual notional should replace the number of units.

7. Summary table of supervisory parameters (a)

Should a 50% supervisory option volatility on swaptions for all currencies be used?

Yes.

8. Summary table of supervisory parameters (b)

Are the supervisory volatilities from the table in paragraph 183 recommended or required?

Required – they must be used for calculating the supervisory delta of options.

Specific derivatives

9. Sold options

We would welcome clarification of the treatment of sold options. At the very least, we hope the BCBS could recognise that a netting set comprising only sold options (where premiums have been paid upfront) should have EAD set to zero.

The EAD can be set to zero only for sold options that are outside netting and margin agreements.

10. Forward rate agreement (FRA) example in Table 1, Section 156

As FRAs are cash-settled at the start of the underlying interest rate period (the "effective date"), that date represents the "end-of-risk" date, aka "M" in the BCBS notation. Hence, in this example, M should be 0.5 years instead of 1 year.

In Table 1, Section 156, it is implicitly assumed that the payment is made at the end of the period (similar to vanilla interest rate swaps). If the payment is made at the beginning of the period, as it is typically the case according to market convention, M should indeed be 0.5 years.

11. Binary options

Section 158 attempts to clarify the notional amount determination for complex instruments. The first point mentions digital options. The explanation is somewhat obscure ("a bank must calculate the trade notional amount for each state and use the largest resulting calculation"). A digital option does not have a notional amount for any "state". It has a fixed payoff amount that is paid if certain conditions are met. It would be wrong to treat the payoff amount as the notional amount. The payoff effectively represents the maximum potential exposure on the trade, ie the fixed amount that is owed to the buyer of the option upon exercise (if the current price exceeds the strike price in the case of a digital call option). Our suggestion would be to "gross up" the payoff amount to a regulatory notional amount using the applicable supervisory weighting factor (weighted by MF and delta), resulting in a PFE equal to the Payoff Amount. For example, an FX digital option with a payoff of $3 million, a delta of 0.6 and a residual maturity of 0.25 years would have a Notional Amount of 3m / sqrt (0.25) / 0.6 / 0.04 = $250m. Would this be acceptable?

The interpretation of the SA-CCR rules for binary options suggested in the question is consistent with the standard.

12. Average notional calculation for variable notional swaps

The third bullet point of paragraph 158 may need to clarify that the variable notional calculation should use the weighted average over time (see for example the definitions of EPE and EEPE in Annex 4). Also, we would assume this rule should apply to any transactions with variable notional amounts, not just swaps.

Yes, the average should be calculated as "time weighted". The rule in question should be interpreted as referring to all interest rate and credit derivatives with variable notional amounts specified by the contract. The rule does not cover those transactions where the SA-CCR notional varies due to price changes (typically, FX, equity and commodity derivatives).

Miscellaneous edits

13. Put options footnote

There appears to be a footnote 7 applicable to the supervisory delta calculation for put options (paragraph 159, top of page 12). This footnote does not seem to reference anything. We guess it should be 13.

The existence of footnote 7 is a typo. There should be no footnote after "Put options".

14. Reference to paragraph 111 in footnote 17

Does this refer to a paragraph number in Annex 4 (as with the previously mentioned paragraph 41), or a paragraph number in the Basel III document?

Footnote 17 refers to paragraph 111 of Annex 4 as modified by the BCBS document "Capital requirements for bank exposures to central counterparties", July 2012 ("interim rules" for exposures to CCPs).

Technical amendment to the SA-CCR framework

The following is a technical amendment to the rules text related to situations where the perimeters of the margin agreement and the netting set differ. In particular, when a single margin agreement covers multiple netting sets, paragraph 186 sets out a special rule for the calculation of the replacement cost.

The equation specified in paragraph 186 works well in situations where the bank is a net receiver of collateral, allowing the collected collateral to offset an overall positive mark-to-market value of the derivatives included in the margin agreement. On the contrary, when the bank is a net poster of collateral, the current equation does not allow an overall negative mark-to-market value of the derivatives in the margin agreement to offset the exposure generated by the posted (non-segregated) collateral.

To ensure accurate treatment of the calculation of the replacement cost and consistency in the general SA-CCR framework, paragraph 186 is hereby amended as follows:

> *"186. If a single margin agreement applies to several netting sets, special treatment is necessary because it is problematic to allocate the common collateral to individual netting sets. The replacement cost at any given time is determined by the sum of two terms. The first term is equal to the unmargined current exposure of the bank to the counterparty aggregated across all netting sets within the margin agreement reduced by the positive current net collateral (ie collateral is subtracted only when the bank is a net holder of collateral). The second term is non-zero only when the bank is a net poster of collateral: it is equal to the current net posted collateral (if there is any) reduced by the unmargined current exposure of the counterparty to the bank aggregated across all netting sets within the margin agreement. Net collateral available to the bank should include both VM and NICA. Mathematically, RC for the entire margin agreement is:*

$$\mathrm{RC}_{\mathrm{MA}} = \max\left\{\sum_{NS\in MA} \max\{V_{NS};\ 0\} - \max\{C_{MA};0\};\ 0\right\} + \max\left\{\sum_{NS\in MA} \min\{V_{NS};\ 0\} - \min\{C_{MA};0\};\ 0\right\}$$

> *where the summation NS ∈ MA is across the netting sets covered by the margin agreement (hence the notation), V_{NS} is the current mark-to-market value of the netting set NS and C_{MA} is the cash equivalent value of all currently available collateral under the margin agreement."*