Annex 8

Calculation Rules for Counterpart Credit Risk Exposures

1. General Requirements

1.1 A commercial bank must have in place the appropriate counterparty credit risk (CCR) management framework, including policies and processes that are commensurate with the sophistication of its trading activities and exposures..

1.2 A commercial bank should calculate risk weighted assets (RWA) for CCR exposures with regard to unsettled securities, commodities, and foreign exchange transactions in both banking and trading books, which are defined as the sum of the following:

1.2.1 CCR exposures from over-the-counter (OTC) derivative transactions;

1.2.2 CCR exposures from securities financing transactions (SFTs) such as repurchase agreements, reverse repurchase agreements, security lending and borrowing, and margin lending transactions; and

1.2.3 credit exposures to the central counterparties (CCPs).

1.3 For OTC derivative transactions, in addition to the default risk capital requirements for counterparty credit risk, a commercial bank must add a capital charge to cover the risk of mark-to-market losses on the expected counterparty risk to OTC derivatives (i.e. credit value adjustments, CVA).
CVA captures potential mark-to-market losses to OTC derivatives which are incurred by the deterioration of the counterparties’ credit standing or changes in counterparties’ credit spreads.

1.4 The rules for calculating risk-weighted assets for credit exposures to CCPs will be specified by the CBRC separately.

2. Calculation of CCR Risk-Weighted Assets for OTC Derivative Transactions

CCR risk-weighted assets for OTC derivative transactions include the risk-weighted assets for default risk and the risk-weighted assets for the CVA risk.

2.1 Calculation of risk-weighted assets for default risk

2.1.1 A commercial bank can use either regulatory weighting approach or IRB approach to calculate risk-weighted assets for counterparty’s default risk in the OTC derivative transactions.

2.1.2 Under the regulatory weighting approach, the risk weighted assets should be the exposures at default (EAD) in the OTC derivatives transactions multiplied by the applicable risk weight of the counterparty as provided in Annex 2.

2.1.3 Under the IRB approach, the bank should calculate the risk weighted assets for counterparty’s default risk in the OTC derivative transactions according to the provisions of Annex 3.

2.1.4 In computing the EAD for counterparty’s default risk in the OTC derivative transactions, the bank should use the current exposure method (CEM) via the following formula:

\[ \text{EAD} = \text{MtM} + \text{Add on}, \]

where:
2.1.4.1 MtM = the total replacement cost (obtained by “markikng-to-market”) of all its contracts with positive value

2.1.4.2 Add-on = a factor to reflect the potential future exposure over the remaining life of the contact

2.1.4.3 The Add-on for potential future credit exposure should be calculated on the basis of the total notional principal amount in the book, multiplied by relevant add-on factors.

2.1.5 For single name credit derivative transactions, the potential future exposure add-on factors are outlined in Table 1.

**Table 1: Add-on factors for single name credit derivative transactions**

<table>
<thead>
<tr>
<th>Type</th>
<th>Reference obligation</th>
<th>Protection buyer (%)</th>
<th>Protection seller (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Return Swap</td>
<td>“qualifying”</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>“Non-qualifying”</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Credit Default Swap</td>
<td>“qualifying”</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>“Non-qualifying”</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

2.1.5.1 The “qualifying” category includes securities issued by the Chinese central government, PBC and policy banks, plus other government issues and qualified securities as defined in Annex 10 of the Rules.

2.1.5.2 The protection seller of a credit default swap shall only be subject to the add-on factor where it is subject to closeout upon the insolvency of the protection buyer while the underlying is still solvent. Add-on should then be capped to the amount of unpaid premiums.
2.1.5.3 Where the credit derivative is a first-to-default transaction, the add-on will be determined by the lowest credit quality underlying in the basket, i.e. if there are any non-qualifying items in the basket, the non-qualifying reference obligation add-on should be used. For second and subsequent to default transactions, underlying assets should continue to be allocated according to the credit quality, i.e. the second lowest credit quality will determine the add-on for a second to default transaction etc.

2.1.6 The potential future exposure add-on factors for other derivative transactions are outlined in Table 2.

**Table 2: Add-on factors for other derivatives transactions**

<table>
<thead>
<tr>
<th>Residual maturity</th>
<th>Interest Rates (%)</th>
<th>FX and Gold (%)</th>
<th>Equities (%)</th>
<th>Precious Metals Except Gold (%)</th>
<th>Other Commodities (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year or less</td>
<td>0.0</td>
<td>1.0</td>
<td>6.0</td>
<td>7.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Over one year to five years</td>
<td>0.5</td>
<td>5.0</td>
<td>8.0</td>
<td>7.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Over five years</td>
<td>1.5</td>
<td>7.5</td>
<td>10.0</td>
<td>8.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

2.1.7 A commercial bank can obtain capital relief for credit derivative instruments that are bought to hedge credit risk in the banking book or CCR, if the credit risk mitigation effect of such credit derivative instruments has already been considered.

2.1.8 A commercial bank can obtain capital relief for credit default swaps sold and booked in the banking book, if the credit risk mitigation effect of such credit default swaps has already been considered.
2.1.9 For OTC transactions that meet the netting criteria as set out in section 3 of Annex 6, the bank can calculate the exposure accordingly.

2.2 Calculation of CVA risk weighted assets

2.2.1 A commercial bank shall calculate CVA risk weighted assets using the following formula:

CVA risk weighted assets

\[
= 12.5 \times 2.33 \cdot \sqrt{h} \cdot \left[ \sum_{i} w_i \cdot \left( M_i \cdot EAD_i^{\text{total}} - M_i^{\text{holder}} \cdot B_i \right) - \sum_{i} w_i \cdot M_i \cdot B_i \right] + \sum_{i} 0.75 \cdot w_i \cdot \left( M_i \cdot EAD_i^{\text{total}} - M_i^{\text{holder}} \cdot B_i \right)^2
\]

where:

2.2.1.1 \( h \) is the one-year risk horizon (in units of a year), \( h = 1 \).

2.2.1.2 \( w_i \) 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 Table 3. When a counterparty does not have an external rating, the bank must, subject to CBRC approval, map the internal rating of the counterparty to one of the external ratings. If a counterparty does not have external rating or internal rating, \( w_i = 1\% \).

2.2.1.3 \( EAD_i^{\text{total}} \) is the exposure at default of counterparty ‘i’ (summed across its netting sets), including the effect of collateral. The exposure should be discounted by applying the factor \( \left( 1 - \exp \left( -0.05 \cdot M_i \right) \right) / (0.05 \cdot M_i) \).

2.2.1.4 \( B_i \) 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 should be discounted by applying the factor \( \left( 1 - \exp \left( -0.05 \cdot M_{\text{hedge}} \right) \right) / (0.05 \cdot M_{\text{hedge}}) \).
2.2.1.5 Bind 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 \( (1-\exp(-0.05\times Mind)) / (0.05\times Mind) \).

2.2.1.6 Wind 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’ according to Table 3.

2.2.1.7 Mi is the effective maturity of the transactions with counterparty ‘i’. Mi should be calculated according Annex 5, and should not be capped at 5 years.

2.2.1.8 Mihedge is the maturity of the hedge instrument with notional \( B_i \) (the quantities Mihedge-\( B_i \) are to be summed if these are several positions).

2.2.1.9 Mind is the maturity of the index hedge “ind”. In case of more than one index hedge position, it is the notional weighted average maturity.

2.2.2 For any counterparty that is also a constituent of an index on which a CDS is used for hedging counterparty credit risk, the notional amount attributable to that single name (as per its reference entity weight) may, with CBRC 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.

2.2.3 The seven weights based on the external rating of the counterparty are outlined in Table 3.

<table>
<thead>
<tr>
<th>Table 3: Mapping of risk weights to external rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>AAA</td>
</tr>
<tr>
<td>AA</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>BBB</td>
</tr>
<tr>
<td>BB</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>CCC</td>
</tr>
</tbody>
</table>

3. Calculation of CCR Risk-Weighted Assets for Securities Financing Transactions (SFTs)

3.1 A commercial bank can use regulatory weighting approach or IRB approach to calculate the CCR risk weighted assets for SFTs.

3.2 Under the IRB approach, a commercial bank should calculate the risk weighted assets for SFTs in both the banking and trading books according to the provisions of Annex 3 and Annex 6 of the Rules.

3.3 Under the regulatory weighting approach, a commercial bank should calculate the risk weighted assets for SFTs as follows:

3.3.1 For SFTs in the banking book, the bank should calculate risk weighted assets according to Article 73, 74 and Annex 2 of the Rules.

3.3.2 For SFTs in the trading book, the exposure amount after risk mitigation will be multiplied by the risk weight of the counterparty as outlined in Annex 2 of the Rules to obtain the risk weighted asset amount for the collateralized transaction.

3.3.3 The SFT exposure after considering risk mitigation is calculated as follows:

\[ E^* = \max\{0, [E \times (1 + H_c) - C \times (1 - H_c - H_{fc})]\} \]

where:

\[ E = \text{current value of the exposure before risk mitigation} \]
\( E^* \) = the exposure value after risk mitigation

\( H_e \) = haircut appropriate to the exposure

\( C \) = the current value of the collateral received

\( H_c \) = haircut appropriate to the collateral

\( H_{fc} \) = haircut appropriate for currency mismatch between the collateral and exposure.

The eligible collateral instruments and the corresponding supervisory haircuts are defined in section 6 and section 7 in Annex 6 of the Rules.

3.3.4 For SFTs in the trading book that meet the netting criteria as set out in Annex 6 of the Rules, a commercial bank can calculate the exposure according to the provisions in section 3 of Annex 6 of the Rules.