Annex 9:

**Calculation Rules for Exposures under Securitization Framework**

1. General Requirements

1.1 Asset securitization transactions include traditional and synthetic securitization or similar structures that contain features common to both.

A traditional securitization is a structure where the cash flow from an underlying pool of exposures is used to service at least two different stratified risk positions, while the credit risks of underlying assets are transferred to investors in whole or in part by way of asset assignment or trusteeship, etc.

A synthetic securitization is a structure with at least two different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of funded (e.g. credit-linked notes) or unfunded (e.g. credit default swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio. Accordingly, the investors’ potential risk is dependent upon the performance of the underlying pool.

1.2 The on and off-balance-sheet risk exposures of a commercial bank to a securitization are hereafter referred to as “securitization exposures”. Securitization exposures can include but are not restricted to the following: asset-backed securities, mortgage-backed securities, credit enhancements, liquidity facilities, interest rate or currency swaps, credit derivatives and tranched cover.

Reserve accounts recorded as an asset by the originating bank must be treated as securitization exposures. It can include but are not restricted to cash collateral accounts and spread accounts.

1.3 To guard against risks arising from securitizations, the capital treatment of a securitization exposure must be determined on the basis of its economic substance rather than its legal form.

Regulatory capital shall be required as long as the bank is engaged in any of the following activities such as serving as an securitization originator, investor or lending
service institution, or providing credit enhancement or liquidity facilities, etc.

On the basis of its economic substance, the CBRC is empowered to judge whether
the bank is exposed to risks arising from securitization, and determine capital
treatment accordingly.

1.4 A commercial bank that has received approval from the CBRC to use the IRB
approach for the type of underlying exposures securitized must use the IRB approach
for securitizations. Conversely, the bank may not use the IRB approach to
securitization unless it receives approval from the CBRC to use the IRB approach for
the underlying exposures.

If the bank is using the IRB approach for exposures that exceed 50% within the
pool, then IRB approach for securitization shall be generally used. Otherwise, the
standardized approach shall be adopted.

Where there is no specific IRB treatment for the underlying asset type, the
originating bank that has received approval from the CBRC to use the IRB approach
must calculate capital charges on its securitization exposures using the standardized
approach in the securitization framework, and the investing bank with approval to use
the IRB approach must apply the ratings-based approach (RBA).

1.5 The capital treatment of a commercial bank’s securitization risk exposures
shall be in line with the following rules:

1.5.1 On-balance-sheet securitization exposures shall be computed as the book
value after deduction of the depreciation reserve provisioned specially with regard
to such asset securitization risk exposure.

1.5.2 Off-balance-sheet securitization exposures shall be computed by
deducting the depreciation-reserve from off-balance-sheet notional sum and then
multiplying with correspondent credit conversion factor (CCF).

1.6 If a commercial bank provides an asset securitization transaction with credit
supports and such credit supports have been reflected in external ratings, the bank
shall not use external ratings but measure the regulatory capital requirements by
following the relevant provisions in the Rules on unrated securitization exposures.

1.7 In the case that a commercial bank provides duplicative coverage to the
underlying exposures, it is only required to hold capital once for the position covered
by the overlapping facilities. However, comparisons shall be made so as to ensure that the bank attributes the overlapping part to the facility with the highest conversion factor.

1.8 A commercial bank shall not recognize in regulatory capital any gain-on-sale according to the Rules. The bank shall, at a minimum, hold capital against all of the exposures associated with the securitization as if they were not securitized.

1.9 With respect to the securitization risk exposures failing to comply with the following requirements, only standardized approach shall be applied with risk weight of 1250% while computing regulatory capital requirements:

1.9.1 As a general rule, a commercial bank must, on an ongoing basis, have a comprehensive understanding of the risk characteristics of its individual securitization exposures, whether on balance sheet or off balance sheet, as well as the risk characteristics of the pools underlying its securitization exposures.

1.9.2 A commercial bank must be able to access performance information on the underlying pools on an on-going basis in a timely manner. Such information may include, as appropriate: exposure type; percentage of loans 30, 60 and 90 days past due; default rates; prepayment rates; loans in foreclosure; property type; occupancy; average credit score or other measures of creditworthiness; average loan-to-value ratio; and industry and geographic diversification.

1.9.3 A commercial bank must have a thorough understanding of all structural features of a securitization transaction that would materially impact the performance of the bank’s exposures to the transaction, credit enhancements, liquidity enhancements, market value triggers, and deal-specific definitions of default.

2. Credit Risk Transfer and Regulatory Capital Measurement

2.1 With respect to traditional securitizations, an originating bank may exclude securitized exposures from the calculation of risk-weighted assets only if all of the following conditions have been met.

2.1.1 Significant credit risk associated with the securitized exposures has been transferred to third parties.

2.1.2 The transferor does not maintain effective or indirect control over the
transferred exposures.

The assets are legally isolated from the transferor in such a way that the exposures are put beyond the reach of the transferor and its creditors, even in bankruptcy or receivership. These conditions must be supported by an opinion provided by a qualified legal counsel.

The transferor is deemed to have maintained effective control over the transferred credit risk exposures if it:
(a) is able to repurchase from the transferee the previously transferred exposures in order to realize their benefits;
or (b) is obligated to retain the risk of the transferred exposures. The transferor’s retention of servicing rights to the exposures will not necessarily constitute indirect control of the exposures.

2.1.3 The securities issued are not obligations of the transferor.

2.1.4 The trust agreement and securitization does not contain clauses that
(a) require the originating bank to alter systematically the underlying exposures such that the pool’s weighted average credit quality is improved unless this is achieved by selling assets to independent and unaffiliated third parties at market prices;

(b) allow for increases in a retained first loss position or credit enhancement provided by the originating bank after the transaction’s inception;

or (c) increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool.

2.1.5 Clean-up calls must satisfy the conditions set out in paragraphs of 1.6 in this Annex.

As the transferor, the bank meeting all the above mentioned requirements must still hold regulatory capital against any securitization exposures it retains according to the Rules.

As the transferor, the bank failing to meet any of the above mentioned requirements shall raise capital according to the pre-securitization capital
requirements.

2.2 With respect to synthetic asset securitization transactions, the use of CRM techniques for hedging the underlying exposure may be recognized for risk-based capital purposes only if the conditions outlined below are satisfied:

2.2.1 Credit risk mitigants must comply with the requirements as set out in Annex 6 of the Rules.

2.2.2 Eligible collateral is limited to that specified in Annex 6 of the Rules. Eligible collateral pledged by the SPEs may be recognized.

2.2.3 Eligible guarantees and credit derivatives shall only be restricted to those outlined in 6.3 and 6.4 in Annex 6 of the Rules. A commercial bank may not recognize SPEs as eligible guarantors in the securitization framework;

2.2.4 The transferor must transfer significant credit risk associated with the underlying exposure to third parties.

2.2.5 The instruments used to transfer credit risk may not contain terms or conditions that limit the amount of credit risk transferred, such as those provided below:

(a) Clauses that materially limit the credit protection or credit risk transference (e.g. significant materiality thresholds below which credit protection is deemed not to be triggered even if a credit event occurs or those that allow for the termination of the protection due to deterioration in the credit quality of the underlying exposures);

(b) Clauses that require the originating bank to alter the underlying exposures to improve the pool’s weighted average credit quality;

(c) Clauses that increase the bank’s cost of credit protection in response to deterioration in the pool’s quality;

(d) Clauses that increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the reference pool; and

(e) Clauses that provide for increases in a retained first loss position or credit enhancement provided by the originating bank after the transaction’s inception.
2.2.6 Securitizations must obtain an opinion provided by a qualified legal counsel so as to recognize the effectiveness of implementation in the relevant countries or regions.

2.2.7 Clean-up calls must satisfy the conditions set out in 2.6 in this Annex.

As the transferor, the bank meeting all the above mentioned requirements must still hold regulatory capital against any securitization exposures it retains according to the Rules.

As the transferor, the bank failing to meet any of the above mentioned requirements shall not recognize the use of CRM techniques for hedging the underlying exposure while measuring regulatory capital.

2.3 With respect to the synthetic securitization meeting the requirements of 2.2 the transferor shall recognize the use of CRM for hedging the underlying exposure according to the following provisions while measuring regulatory capital

2.3.1 If the IRB approach is applied, the transferor shall recognize the use of CRM for hedging the underlying exposure according to the relevant provisions on IRB in Annex 6 of the Rules

2.3.2 If the IRB approach is not applied, the transferor shall recognize the use of CRM for hedging the underlying exposure according to the relevant provisions on the Regulatory Weighting Approach of the Rules.

2.4 In case there is a maturity mismatch between the CRM and the underlying assets, the originating bank of synthetic securitizations shall compute the regulatory capital according to the following provisions:

When the exposures in the underlying pool have different maturities, the longest maturity must be taken as the maturity of the pool.

2.5 For all other securitization exposures, the transferor must apply the maturity mismatch treatment set forth in Annex 6.

2.6 For securitization transactions that include a clean-up call, no capital will be required due to the presence of a clean-up call if the following conditions are met:
(a) the exercise of the clean-up call must not be mandatory, in form or in substance, but rather must be at the discretion of the originating bank;

(b) the clean-up call must not be structured to avoid allocating losses to credit enhancements or positions held by investors or otherwise structured to provide credit enhancement;

(c) For traditional securitization, the clean-up call must only be exercisable when 10% or less of the original underlying portfolio, or securities issued remain; and

(d) For synthetic securitizations, the clean-up call must only be exercisable, when 10% or less of the original reference portfolio value remains.

Securitization transactions that include a clean-up call that does not meet all of the criteria set out in 2.6 result in a capital requirement for the originating bank. For a traditional securitization, the underlying exposures must be treated as if they were not securitized. Additionally, the bank must not recognize in regulatory capital any gain-on-sale. For synthetic securitizations, the bank purchasing protection must hold capital against the entire amount of the securitized exposures as if they did not benefit from any credit protection. If a synthetic securitization incorporates a call (other than a clean-up call) that effectively terminates the transaction and the purchased credit protection on a specific date, the bank must treat the transaction in accordance with the provisions in 2.4 of this Annex.

2.7 When a commercial bank provides implicit support in excess of its predetermined contractual obligation to a securitization, it must, at a minimum, hold capital against all of the exposures associated with the securitization transaction as if they had not been securitized. Additionally, the bank is required to disclose publicly that it has provided non-contractual support and the capital impact of doing so.

The implicit support provided by the bank may include but are not limited to the following:

(a) The initiating bank redeems partial assets from the pool at a price higher than the market price, or redeems the assets of declining credit quality, unless it is required by relevant provisions to redeem or replace the assets due to the fact that the underlying assets are recognized, on the commencement date of their entry into the warehouse, fail to meet the scope, category, standards and conditions agreed upon in the trusteeship contract;
(b) Re-inject capital to the pool by giving discount;

(c) Introduce the first loss liabilities beyond the contract; and

(d) Clean-up calls are regarded as providing credit enhancement.

3. Standardized Approach for Securitization Exposures

3.1 If the risk weight is determined by an eligible external rating agency evaluated by a commercial bank, the risk weight of a securitization exposure and that of a re-securitization exposure shall be determined in accordance with Table 1 and Table 2.

**Table 1** Table of Correspondence between Long-term Rating and Risk Weights

<table>
<thead>
<tr>
<th>Long-term Rating</th>
<th>AAA to AA-</th>
<th>A+ to A-</th>
<th>BBB+ to BBB-</th>
<th>BB+ to BB-</th>
<th>B+ and Below or unrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securitization Exposures</td>
<td>20%</td>
<td>50%</td>
<td>100%</td>
<td>350%</td>
<td>1250%</td>
</tr>
<tr>
<td>Re-securitization Exposures</td>
<td>40%</td>
<td>100%</td>
<td>225%</td>
<td>650%</td>
<td>1250%</td>
</tr>
</tbody>
</table>

Note: If the long-term rating is between BB+ (including BB+) and BB- (including BB-), the risk weight of 350% or 650% as set forth in the table shall not apply to the initiating bank, instead, the risk weight at 1250% shall apply.

**Table 2** Table of Correspondence between Short-term Rating and Risk Weights

<table>
<thead>
<tr>
<th>Short-term Rating</th>
<th>A-1/P-1</th>
<th>A-2/P-2</th>
<th>A-3/P-3</th>
<th>All other ratings or unrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securitization Exposures</td>
<td>20%</td>
<td>50%</td>
<td>100%</td>
<td>1250%</td>
</tr>
<tr>
<td>Re-securitization Exposures</td>
<td>40%</td>
<td>100%</td>
<td>225%</td>
<td>1250%</td>
</tr>
</tbody>
</table>

3.2 A commercial bank shall, under the following circumstances, compute regulatory capital for the securitization exposures and resecuritization exposures that are unrated or whose ratings are not recognized by the bank as the foundation of risk weighting (hereinafter referred to as unrated securitization exposures).
3.2.1 For the most senior exposure in a securitization or resecuritization, the unrated most senior position receives the average risk weight of the underlying exposures if the bank could determine the average risk weight of the pool.

3.2.2 For eligible liquidity facilities as defined in 3.3 of this Annex and where the conditions for use of external credit assessments are not met, the risk weight applied to the exposure’s credit equivalent amount is equal to the highest risk weight assigned to any of the underlying individual exposures covered by the facility.

3.2.3. For other unrated securitization exposures, the risk-weighted assets shall be calculated according to the risk weight at 1250%.

3.3 A commercial bank is permitted to treat off-balance sheet securitization exposures as eligible liquidity facilities if the following minimum requirements are satisfied:

3.3.1 The facility documentation must clearly identify and limit the circumstances under which it may be drawn. Draws under the facility must be limited to the amount that is likely to be repaid fully from the liquidation of the underlying exposures and any seller-provided credit enhancements. In addition, the facility must not cover any losses incurred in the underlying pool of exposures prior to a draw;

3.3.2 The use of liquidity facilities shall be ad hoc. It shall not be used permanently or regularly to provide capital to securitization;

3.3.3 The facility must be subject to an asset quality test that precludes it from being drawn to cover credit risk exposures that are in default. In addition, if the exposures that a liquidity facility is required to fund are externally rated securities, the facility can only be used to fund securities that are externally rated investment grade at the time of funding;

3.3.4 The facility cannot be drawn after all applicable credit enhancements from which the liquidity would benefit have been exhausted; and

3.3.5 Repayment of draws on the facility must not be subordinated to any interests of any note holder in the program or subject to deferral or waiver.
3.4 Eligible servicers may advance cash facilities in the event of meeting the following requirements:

3.4.1 The servicer is entitled to full reimbursement; and

3.4.2 this right is senior to other claims on cash flow from the underlying pool of exposures.

3.5 Credit conversion factors for off-balance sheet exposures shall be in accordance with the following provisions:

3.5.1 If an external rating of the facility itself is used for risk weighting the facility, a CCF of 100% shall be applied;

3.5.2 If an external rating of the facility itself is not used for risk weighting the facility, eligible liquidity facilities under one year receive a 20% CCF, while those over one year receive a 50% CCF;

3.5.3 For eligible servicer cash advance facilities, the regulatory capital shall be computed according to relevant provisions on eligible liquidity facilities. Such undrawn servicer’s cash advances or facilities that are unconditionally cancellable without prior notice may be eligible for a 0% CCF; and

3.5.4 All other off-balance sheet securitization exposures will receive a 100% CCF.

3.6 When standardized approach is applied to measure the regulatory capital for the securitization exposures using CRM techniques, eligible collateral is limited to that recognized under the standardized approach for CRM in Annex 6 of the Rules. Collateral pledged by SPEs may be recognized.

3.7 When standardized approach is applied to measure the regulatory capital for the securitization exposures using eligible collaterals as CRM, the bank shall first calculate the regulatory capital as if there is no eligible collaterals, then multiply by the \( \frac{E^*}{E} \) stipulated in 2.5 of Annex 6 of the Rules.

Here \( E \) refers current value of the exposure, while \( E^* \) equals to the exposure value after risk mitigation.

3.8 When standardized approach is applied to measure the regulatory capital for the
securitization exposures using CRM techniques, credit protection provided by the entities listed in 6.1 and 6.2 of Annex 6 of the Rules may be recognized. SPEs cannot be recognized as eligible guarantors

3.9 When eligible guarantor provides credit protection with risk mitigation to securitization exposures, capital requirements for the guaranteed/protected portion shall be calculated according to the requirements of computing the direct credit claim of the guarantor.

3.10 When CRM only covers part of securitization exposures, the bank shall, with respect to the covered part, measure the regulatory capital by taking into account the CRM and in accordance with relevant provisions of this Annex; while with respect to the uncovered part, it shall measure the regulatory capital as if the CRM does not exist.

If the CRM only covers part of securitization exposures, and there are different classes of asset securitization risk exposures, it shall be deemed that the credit risk mitigation instrument will provide credit protection for all classes of asset securitization risk exposures in a sequence of higher classes to lower ones in case that there is no explicit covenant in this regard.

3.11 For the purpose of setting regulatory capital against a maturity mismatch, the capital requirement will be determined in accordance with Annex 6 of the Rules.

3.12. When a commercial bank other than the originator provides credit protection to a securitization exposure, it must calculate a capital requirement on the covered exposure as if it were an investor in that securitization.

3.13 Apart from the exceptions as described below in 3.14, an originating bank is required to hold capital against all or a portion of the investors’ interest (i.e. against both the drawn and undrawn balances related to the securitized exposures) when:

(a) It sells exposures into a structure that contains an early amortization feature; and

(b) The exposures sold are of a revolving nature. These involve exposures where the borrower is permitted to vary the drawn amount and repayments within an agreed limit under a line of credit.

For securitization structures wherein the underlying pool comprises revolving and term exposures, a commercial bank must apply the relevant early amortization
treatment (outlined below in 3.15) to that portion of the underlying pool containing revolving exposures.

For a commercial bank subject to the early amortization treatment, the total capital charge for all of its positions will be subject to a maximum capital requirement (i.e. a ‘cap’) equal to the greater of (a) that required for retained securitization exposures, or (b) the capital requirement that would apply had the exposures not been securitized.

3.14 A commercial bank are not required to calculate a capital requirement for early amortizations in the following situations:

(a) Replenishment structures where the underlying exposures do not revolve and the early amortization ends the ability of the bank to add new exposures;

(b) Transactions of revolving assets containing early amortization features that mimic term structures (i.e. where the risk on the underlying facilities does not return to the originating bank);

(c) Structures where a commercial bank securitizes one or more credit line(s) and where investors remain fully exposed to future draws by borrowers even after an early amortization event has occurred;

(d) The early amortization clause is solely triggered by events not related to the performance of the securitized assets or the selling bank, such as material changes in tax laws or regulations.

3.15 The originator’s capital charge for the investors’ interest is determined as the product of (a) the investors’ interest, (b) the appropriate CCF, and (c) the risk weight appropriate to the underlying exposure type, as if the exposures had not been securitized.

Investors’ interest is defined as investors’ drawn balances related to securitization exposures and EAD associated with investors’ undrawn lines related to securitization exposures. For determining the EAD, the undrawn balances of securitized exposures would be allocated between the seller’s and investors’ interests on a pro rata basis, based on the proportions of the seller’s and investors’ shares of the securitized drawn balances.

As described below, the CCFs depend upon whether the early amortization repays investors through a controlled or non-controlled mechanism. They also differ according to whether the securitized exposures are uncommitted retail credit lines or
other credit lines. A line is considered uncommitted if it is unconditionally cancelable without prior notice.

3.16 With respect to securitization featured by controlled early amortization, the originator shall determine the CCF according to Table 3:

3.16.1 For committed credit lines in securitizations, a CCF of 90% shall apply;

3.16.2 For uncommitted non-retail credit lines in securitizations, a CCF of 90% shall apply; and

3.16.3 For uncommitted retail credit lines in securitizations, the bank must compare the three-month average excess spread defined according to the below Table 3 to the point at which the bank is required to trap excess spread as economically required by the structure (i.e. excess spread trapping point) so as to determine CCF appropriately. In cases where such a transaction does not require excess spread to be trapped, the trapping point is deemed to be 4.5 percentage points.

Table 3 Controlled Early Amortization Features

<table>
<thead>
<tr>
<th>Retail Credit Lines</th>
<th>Uncommitted</th>
<th>Committed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-month average excess spread/ excess spread trapping point (R)</td>
<td></td>
<td>90% CCF</td>
</tr>
<tr>
<td>R&gt;=133.33%</td>
<td>0% CCF</td>
<td></td>
</tr>
<tr>
<td>100%=&lt;R&lt;133.33%</td>
<td>1% CCF</td>
<td></td>
</tr>
<tr>
<td>75%=&lt;R&lt;100%</td>
<td>2% CCF</td>
<td></td>
</tr>
<tr>
<td>50%=&lt;R&lt;75%</td>
<td>10% CCF</td>
<td></td>
</tr>
<tr>
<td>25%=&lt;R&lt;50%</td>
<td>20% CCF</td>
<td></td>
</tr>
<tr>
<td>R&lt;25%</td>
<td>40% CCF</td>
<td></td>
</tr>
<tr>
<td>Non-retail Credit Lines</td>
<td>90% CCF</td>
<td>90% CCF</td>
</tr>
</tbody>
</table>

3.17 With respect to securitization featured by non-controlled early amortization, the originator shall determine the CCF according to Table 4:

3.17.1 For committed credit lines in securitizations, a CCF of 100% shall apply;

3.17.2 For uncommitted non-retail credit lines in securitizations, a CCF of
10% shall apply;

3.17.3 For uncommitted retail credit lines in securitizations, the bank must compare the three-month average excess spread defined according to the below Table 4 to the point at which the bank is required to trap excess spread as economically required by the structure (i.e. excess spread trapping point) so as to determine CCF appropriately. In cases where such a transaction does not require excess spread to be trapped, the trapping point is deemed to be 4.5 percentage points.

Table 4 Non-controlled Early Amortization Features

<table>
<thead>
<tr>
<th>Retail Credit Lines</th>
<th>Non-Committed 3-month average excess spread/ excess spread trapping point (R)</th>
<th>Committed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R&gt;=133.33%</td>
<td>0% CF</td>
</tr>
<tr>
<td></td>
<td>100%=&lt;R&lt;133.33%</td>
<td>5% CF</td>
</tr>
<tr>
<td></td>
<td>75%=&lt;R&lt;100%</td>
<td>15% CCF</td>
</tr>
<tr>
<td></td>
<td>50%=&lt;R&lt;75%</td>
<td>50% CCF</td>
</tr>
<tr>
<td></td>
<td>R&lt;50%</td>
<td>100% CF</td>
</tr>
<tr>
<td>No retail credit lines</td>
<td>100% CF</td>
<td>100% CF</td>
</tr>
</tbody>
</table>

4. Internal ratings-based Approach for Securitization Exposures

4.1 The internal rating-based approach (IRB) for securitization exposures includes ratings based approach (RBA) and supervisory formula approach (SF). A commercial bank shall, as the following circumstances may be, select approaches appropriately:

4.1.1 The RBA must be applied to securitization exposures that are rated, or where a rating can be inferred.

4.1.2 Where an external or an inferred rating is not available, the following approaches could be selected to calculate regulatory capital:

(a) The Supervisory Formula (SF);
(b) Eligible liquidity facilities conforming to 3.3 of this Annex, the regulatory capital shall be computed in accordance with 4.8 of this Annex; or

(c) The risk-weighted assets shall be calculated by multiplying the capital charge by 12.5.

The risk weight of the securitization exposures calculated as a result of SF shall be no less than 7% and the risk weight of re-securitization exposures shall be no less than 20%.

4.2 Under the RBA, the risk-weighted assets are determined by multiplying the amount of the exposure by the appropriate risk weights, provided in Table 5 and Table 6.

The risk weights depend on the following four factors: (a) the external rating grade or an available inferred rating; (b) whether the credit rating (external or inferred) represents a long-term or a short-term credit rating; (c) the granularity of the underlying pool; and (d) the seniority of the position.

For purposes of the RBA, a securitization exposure is treated as a senior tranche if it is effectively backed or secured by a first claim on the entire amount of the assets in the underlying securitized pool. In a traditional securitization where all tranches above the first-loss piece are rated, the most highly rated position would be treated as a senior tranche. However, when there are several tranches that share the same rating, only the most senior one in the waterfall would be treated as senior. In a typical synthetic securitization, the “super-senior” tranche would be treated as a senior tranche, provided that all of the conditions in 4.3 of this Annex are fulfilled.

The risk weight of securitization exposures shall be determined according to the following approaches:

(a) If the effective number of underlying exposures (N) is less than 6, the risk weights in column 4 of Table 5 and Table 6 apply.

(b) If the effective number of underlying exposures (N) is 6 or more and the position is senior, the risk weights in column 2 from Table 5 and Table 6 apply. In all other cases, the risk weights in column 3 apply.

The effective number of underlying exposures (N) as mentioned above shall be calculated according to the provisions of 4.4.6 of this Annex.
The risk weight of re-securitization exposure is determined by its senior tranche. The risk weight in column 5 of Table 5 and Table 6 apply to senior position of re-securitization exposures, while the risk weight in column 6 of Table 5 and Table 6 apply to non-senior position.

Senior re-securitization exposures are defined as re-securitization exposure satisfying the following two conditions:

(a) the exposure is a senior position, and

(b) none of the underlying exposures are themselves re-securitization exposures.

Table 5 RBA Risk Weights based on Long-term Credit Rating and/or Inferred Rating from Long-term Assessment

<table>
<thead>
<tr>
<th>External rating</th>
<th>Securitization Exposures</th>
<th>Resecuritization Exposures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk weights for senior positions backed by granular pools</td>
<td>Risk weights for non-senior positions backed by granular pools</td>
</tr>
<tr>
<td>AAA</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>AA</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>A+</td>
<td>10%</td>
<td>18%</td>
</tr>
<tr>
<td>A</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>A-</td>
<td>20%</td>
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<tr>
<td>BBB+</td>
<td>35%</td>
<td>50%</td>
</tr>
<tr>
<td>BBB</td>
<td>60%</td>
<td>75%</td>
</tr>
<tr>
<td>BBB-</td>
<td>100%</td>
<td>200%</td>
</tr>
<tr>
<td>BB+</td>
<td>250%</td>
<td>300%</td>
</tr>
<tr>
<td>BB</td>
<td>425%</td>
<td>500%</td>
</tr>
<tr>
<td>BB-</td>
<td>650%</td>
<td>750%</td>
</tr>
<tr>
<td>Below BB-Or Unrated</td>
<td>1250%</td>
<td>1250%</td>
</tr>
</tbody>
</table>
### Table 6  RBA Risk Weights based on Short-term Credit Rating and/or Inferred Rating from Short-term Assessment

<table>
<thead>
<tr>
<th>External Rating</th>
<th>Securitization Exposures</th>
<th></th>
<th>Resecuritization Exposures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk weights for senior positions backed by granular pools</td>
<td>Risk weights for non-senior positions backed by granular pools</td>
<td>Risk weights for tranches banked by non-granular pools</td>
</tr>
<tr>
<td>A-1/P-1</td>
<td>7%</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>A-2/P-2</td>
<td>12%</td>
<td>20%</td>
<td>35%</td>
</tr>
<tr>
<td>A-3/P-3</td>
<td>60%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Below BB- Or Unrated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.3 When the following minimum operational requirements are satisfied, a commercial bank must attribute an inferred rating to an unrated position. These requirements are intended to ensure that the unrated position is senior in all respects to an externally rated securitization exposure termed the “reference securitization exposure”.

(a) The reference securitization exposure must be subordinate in all respects to the unrated securitization exposure. Credit enhancements, if any, must be taken into account when assessing the relative subordination of the unrated exposure and the reference securitization exposure. For example, if the reference securitization exposure benefits from any third-party guarantees or other credit enhancements that are not available to the unrated exposure, then the latter may not be assigned an inferred rating based on the reference securitization exposure.

(b) The maturity of the reference securitization exposure must be equal to or longer than that of the unrated exposure.
(c) The external rating of the reference securitization exposure must satisfy the general requirements for recognition of external ratings, and recognized by the bank as the basis for determining risk weight.

On an ongoing basis, any inferred rating must be updated continuously to reflect any changes in the external rating of the reference securitization exposure.

4.4 Under the SF, the capital charge for a securitization tranche depends on five bank-supplied inputs: the IRB capital charge had the underlying exposures not been securitized (KIRB); the tranche’s credit enhancement level (L) and thickness (T); the pool’s effective number of exposures (N); and the pool’s exposure-weighted average loss-given-default (LGD). The inputs KIRB, L, T and N are defined below. The capital charge is calculated as follows:

4.4.1 Tranche’s IRB capital charge = the amount of exposures that have been securitized times the greater of (a) 0.0056*T, or (b) (S [L+T] – S [L]),

When the bank holds only a proportional interest in the tranche, that position’s capital charge equals the prorated share of the capital charge for the entire tranche.

4.4.2 The Supervisory Formula is given by the following expression:

when \( L \leq K_{IRB} \), \( S[L] = L \)

when \( K_{IRB} < L \),
\[
S[L] = K_{IRB} + K[L] - K[K_{IRB}] + (d \times K_{IRB} / \omega)(1 - e^{\omega(K_{IRB} - L)/K_{IRB}})
\]

where:
\( h = (1 - K_{IRB} / LGD)^N \)
\( c = K_{IRB} / (1 - h) \)
\( v = (LGD - K_{IRB}) \times K_{IRB} + 0.25 \times (1 - LGD) \times K_{IRB} \)
\( f = \left( \frac{v + K_{IRB}^2}{1-h} - c^2 \right) + \frac{(1 - K_{IRB}) \times K_{IRB} - v}{(1 - h) \times \tau} \)
\( g = \frac{(1-c) \times c}{f} - 1 \)
\( a = g \times c \)
\( b = g \times (1 - c) \)
\[ d = 1 - (1 - h) \times (1 - \text{Beta}[K_{IRB}; a, b]) \]
\[ K[L] = (1 - h) \times ((1 - \text{Beta}[L; a, b]) \times L + \text{Beta}[L; a + 1, b] \times c) \]

In these expressions, Beta [L; a, b] refers to the cumulative beta distribution with parameters a and b evaluated at L.89

The CBRC determined parameters in the above expressions are as follows:
\[ \tau = 1000, \omega = 20. \]

4.4.3 KIRB is the ratio of (a) the IRB capital requirement including the EL portion for the underlying exposures in the pool to (b) the exposure amount of the pool (e.g. the sum of drawn amounts related to securitized exposures plus the EAD associated with undrawn commitments related to securitized exposures). Quantity (a) above must be calculated in accordance with the applicable minimum IRB standards (as set out by the CBRC) as if the exposures in the pool were held directly by the bank. This calculation shall reflect the effects of any credit risk mitigant that is applied on the underlying exposures (either individually or to the entire pool), and hence benefits all of the securitization exposures. For structures involving an SPE, all the assets of the SPE that are related to the securitizations are to be treated as exposures in the pool, including assets in which the SPE may have invested a reserve account, such as a cash collateral account.

In cases where a commercial bank has set aside a specific provision or has a non-refundable purchase price discount on an exposure in the pool, quantity (a) defined above and quantity (b) also defined above must be calculated using the gross amount of the exposure without the specific provision and/or non-refundable purchase price discount. In this case, the amount of the non-refundable purchase price discount on a defaulted asset or the specific

4.4.4 L is measured (in decimal form) as the ratio of (a) the amount of all securitization exposures subordinate to the tranche in question to (b) the amount of exposures in the pool.

A commercial bank will be required to determine L before considering the effects of any tranche-specific credit enhancements, such as third-party guarantees that benefit only a single tranche. Any gain-on-sale and/or credit enhancing I/Os associated with the securitization are not to be included in the measurement of L. The size of interest rate or currency swaps that are more junior than the tranche in question may be measured at their current values (without the potential future exposures) in calculating the enhancement level. If the current value of the
instrument cannot be measured, the instrument shall be ignored in the calculation of L. If there is any reserve account funded by accumulated cash flows from the underlying exposures that is more junior than the tranche in question, this can be included in the calculation of L. Unfunded reserve accounts may not be included if they are to be funded from future receipts from the underlying exposures.

4.4.5 Thickness of exposure (T) is measured as the ratio of (a) the nominal size of the tranche of interest to (b) the notional amount of exposures in the pool. In the case of an exposure arising from an interest rate or currency swap, the bank must incorporate potential future exposure. If the current value of the instrument is non-negative, the exposure size shall be measured by the current value plus the addition as in the 1988 Accord. If the current value is negative, the exposure shall be measured by using the potential future exposure only.

4.4.6 Effective number of exposures (N) is calculated as:

\[ N = \frac{\sum_i EAD_i^2}{\sum_i EAD_i^2} \]

where EAD\(_i\) represents the exposure-at-default associated with the ith instrument in the pool. Multiple exposures to the same obligor must be consolidated (i.e. treated as a single instrument).

In the case of re-securitization (securitization of securitization exposures), the formula applies to the number of securitization exposures in the pool and not the number of underlying exposures in the original pools. If the portfolio share associated with the largest exposure, C1, is available, the bank may compute N as 1/C1.

4.4.7 The exposure-weighted average LGD is calculated as follows:

\[ LGD = \frac{\sum_i LGD_i \times EAD_i}{\sum_i EAD_i} \]

where LGDi represents the average LGD associated with all exposures to the ith obligor.

In the case of re-securitization, an LGD of 100% must be assumed for the underlying
4.5 For securitizations involving retail exposures, the SF may be implemented using the simplifications: \( h = 0 \) and \( v = 0 \).

4.6 Under the conditions provided below, a commercial bank may employ a simplified method for calculating the effective number of exposures and the exposure-weighted average LGD.

4.6.1 If the portfolio share associated with the largest exposure, \( C_1 \), is no more than 0.03 (or 3% of the underlying pool), then for purposes of the SF, the bank may set \( \text{LGD}=0.50 \) and \( N \) equal to the following amount

\[
N = \left( C_1 \times C_m + \left( \frac{C_m - C_1}{m - 1} \right) \times \max \{ 1 - m \times C_1, 0 \} \right)^{-1}
\]

4.6.2 If only \( C_1 \) is available and this amount is no more than 0.03, then the bank may set \( \text{LGD}=0.50 \) and \( N=1/\text{C1} \).

4.7 Off-balance sheet securitization exposures receive a CCF of 100%.

4.8 When it is not practical for a commercial bank to use the IRB approach for calculating KIRB, the bank may, on an exceptional basis and subject to the approval of the CBRC, temporarily be allowed to apply the following method.

4.8.1 For eligible liquidity facility, the highest risk weight assigned under the standardized approach to any of the underlying individual exposures covered by the liquidity facility can be applied to the liquidity facility. The CCF must be 50% for a facility with an original maturity of one year or less, or 100% if the facility has an original maturity of more than one year.

4.8.2 For all the other cases, the CCF and the risk weight must be 100% and 1250% respectively.

4.9 When IRB approach is applied to measure the regulatory capital for the securitization exposures using CRM techniques, eligible collaterals shall be restricted to those prescribed in Annex 6 of the Rules. Eligible collaterals provided by SPEs may be recognized as eligible guarantors.

4.10 When IRB approach is applied to measure the regulatory capital for the securitization exposures using CRM techniques, eligible guarantees and derivatives shall be restricted to those prescribed in Annex 6 of the Rules. SPEs may be
recognized as eligible guarantors.

4.11 The originator applying IRB approach shall, according to the relevant provisions in 3.7, 3.9 and 3.12 of this Annex regarding CRM treatment and the provisions on IRB approach in Annex 5 of the Rules, compute regulatory capital requirements for the securitization exposures using CRM techniques.

4.12 The originator applying IRB approach shall, according to the relevant provisions in 3.13 to 3.17 of this Annex, compute regulatory capital requirements for amortization. The originator’s capital charge for the investors’ interest is determined as the product of (a) the investors’ interest, (b) the appropriate CCF, and (c) the regulatory capital requirements (KIRB) of the IRB approach existing before the underlying asset securitization.

Investors’ interest is defined as investors’ drawn balances related to securitization exposures and EAD associated with investors’ undrawn lines related to securitization exposures. For determining the EAD, the undrawn balances of securitized exposures would be allocated between the originator’s and investors’ interests on a pro rata basis, based on the proportions of the originator’s and investors’ shares of the securitized drawn balances.

5. Operational Requirements for Use of External Credit Assessments

The following operational criteria concerning the use of external credit assessments apply in the standardized and IRB approaches of the securitization framework:

5.1 To be eligible for risk-weighting purposes, the external credit assessment must take into account and reflect the entire amount of credit risk exposure the bank has with regard to all payments owed to it. For example, if a commercial bank is owed both principal and interest, the assessment must fully take into account and reflect the credit risk associated with timely repayment of both principal and interest.

5.2 The external credit assessments must be from an eligible external credit assessment institution (ECAI) as recognized by the CBRC with the following exception. Eligible credit ratings, procedures, methods, assumptions and key elements shall all be publicly available. In other words, a rating must be published in an accessible form and included in the ECAI’s transition matrix. Additionally, losses, cash flow analysis and sensitivity of rating results to major rating assumptions shall also be publicly available. Ratings that are made available only to the parties to a
transaction do not satisfy this requirement.

5.3 Eligible ECAIs must have a demonstrated expertise in assessing securitizations, which may be evidenced by strong market acceptance.

5.4 A commercial bank must apply external credit assessments from eligible ECAIs consistently across a given type of securitization exposure. Furthermore, a commercial bank cannot use the credit assessments issued by one ECAI for one or more tranches and those of another ECAI for other positions (whether retained or purchased) within the same securitization structure that may or may not be rated by the first ECAI.

5.5 Where CRM is provided directly to an SPE, if the CRM provider current external credit rating is above BBB- (inclusive), and the external credit rating at the time of provision of CRM is above A- (inclusive), and the CRM is reflected in the external credit rating of the securitization exposures, the risk weight corresponding to the external credit rating shall be used. In order to avoid any double counting, no additional capital recognition is permitted. If the CRM provider is not recognized as an eligible guarantor in accordance with the above requirements, the covered securitization exposures shall be treated as unrated.

5.6 In the situation where a credit risk mitigant is not obtained by the SPE but rather applied to a specific securitization exposure within a given structure (e.g. ABS tranche), the bank must treat the exposure as if it were unrated and then use the CRM treatment outlined to recognize the hedge.

5.7 If a securitization exposure has two different ratings, the rating with higher risk weight shall be applied. If a securitization exposure has three or more ratings, the bank shall choose the rating with higher risk weight from those two ratings which have relatively lower risk weights among the all.

6. Related Definitions

A *traditional securitization* is a structure where the cash flow from an underlying pool of exposures is used to service at least two different stratified risk positions or tranches reflecting different degrees of credit risk.

A *synthetic securitization* is a structure with at least two different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of
funded (e.g. credit-linked notes) or unfunded (e.g. credit default swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio.

_Funded credit derivatives_ mean that the credit protection purchasing institution has the right to receive funds or assets due to credit protection at the time when default occurs, and may receive compensation by distraining, disposing or assigning such funds or assets. The credit protection purchasing institution will be under such circumstance if holding the collateralized assets for credit protection or issuing credit-linked notes.

_Unfunded credit derivatives_ mean that the credit protection purchasing institution may only, when a default occurs, receive compensation on the basis that the credit protection providing institution fulfills its commitments. _Guarantee_ and CDS belong to such circumstances.

_A liquidity facility_ is a kind of short-term financing provided by the bank under circumstance that the actual principal and interests of the underlying assets temporarily mismatches the repayment, so as to guarantee that the investors could be repaid with the principal and interests backed by the securitization in time and in full amounts.

_Typeched cover_ means where the bank transfers a portion of the risk of an exposure in one or more tranches to a protection seller or sellers and retains some level of risk of the loan and the risk transferred and the risk retained are of different seniority, the bank may obtain credit protection for either the senior tranches (e.g. second loss portion) or the junior tranche (e.g. first loss portion).

_Cash collateral account_ serves as a way of internal credit enhancement in securitizations. Provided by the originator or other financial institutions, the funds of cash collateral account are used for making up the losses incurred for securitizations.

_Spread account_ serves as a way of internal credit enhancement in securitizations. The funds of spread account are received from the excess spread gained from the interest income of assets and other securitization transaction income minus asset-backed security interest expenses and other securitization transaction costs. It is used for making up the losses incurred for securitizations.

_Gain on sale_ is the increase of creditor’s interests gained through banks’ securitizations.

_First loss position_ refers to the liabilities of securitization participant to firstly assume
loss positions;

A clean-up call is an option that permits the securitization exposures (e.g. asset-backed securities) to be called before all of the underlying exposures or securitization exposures have been repaid. In the case of traditional securitizations, this is generally accomplished by repurchasing the remaining securitization exposures once the pool balances or outstanding securities have fallen below some specified level. In the case of a synthetic transaction, the clean-up call may take the form of a clause that extinguishes the credit protection.

A re-securitization exposure is a securitization exposure in which the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposures is a securitization exposure. In addition, an exposure to one or more re-securitization exposures is a re-securitization exposure.

Servicer cash advance facilities refer to a kind of short-term advance provided by credit institutions, including but not limited to prepaid collection expenses, mortgage-related expenses for timely recovering the principal and interest of the underlying assets, so that the investors can timely and fully collect the principal and interest of asset-backed securities.

Early amortization provisions are mechanisms that, once triggered, allow investors to be paid out prior to the originally stated maturity of the securities issued.

A controlled early amortization provision must meet all of the following conditions:

(a) The bank must have an appropriate capital/liquidity plan in place to ensure that it has sufficient capital and liquidity available in the event of an early amortization;

(b) Throughout the duration of the transaction, including the amortization period, there is the same pro rata sharing of interest, principal, expenses, losses and recoveries based on the bank’s and investors’ relative shares of the receivables outstanding at the beginning of each month;

(c) The bank must set a period for amortization that would be sufficient for at least 90% of the total debt outstanding at the beginning of the early amortization period to have been repaid or recognized as in default; and

(d) The pace of repayment shall not be any more rapid than would be allowed by straight-line amortization over the period set out in criterion (c).
An early amortization provision that does not satisfy the conditions for a controlled early amortization provision will be treated as a non-controlled early amortization provision.