

Completion Instructions

Return of Capital Adequacy Ratio Part IIIb – Risk-weighted Amount for Credit Risk Standardized (Credit Risk) Approach Form MA(BS)3(IIIb)

Introduction

1. Form MA(BS)3(IIIb) of Part III should be completed by each authorized institution incorporated in Hong Kong using the *standardized (credit risk) approach (STC approach)* to calculate *credit risk* under Part 4 of the Banking (Capital) Rules.
2. This Form covers the following exposures of the reporting institution:
 - (a) All on-balance sheet exposures and off-balance sheet exposures booked in its *banking book*, except:
 - (i) exposures subject to deduction from the *core capital* and/or *supplementary capital* (which should be reported in Form MA(BS)3(II)); and
 - (ii) exposures subject to the requirements of Part 7 of the Rules (which should be reported in Form MA(BS)3(IIIId));
 - (b) All exposures to counterparties under the following transactions booked in its *trading book: repo-style transactions* treated as collateralized lending (see paragraph 9 below), *OTC derivative transactions* and *credit derivative contracts*.
 - (c) All exposures which are exempted from the requirements of Part 8 of the Rules but expose the institution to credit risk.
3. This Form and its completion instructions should be read in conjunction with the Rules and the relevant supervisory policy/guidance on the revised capital adequacy framework.

Section A: Definitions and Clarification

4. The amounts reported in the column of “Principal Amount” should be net of *specific provisions* for all items in Division A and items 1 to 9c of Division B, but gross of specific provisions for items 10a to 16 in Division B. For items 10a to 16 in Division B, specific provisions should be deducted from the *credit equivalent amount* and the resulting figure should be reported in the column of “Credit Equivalent Amount”.

5. “Principal Amount after CRM” means the reported “Principal Amount” adjusted for the capital effect of **recognized credit risk mitigation** (CRM). The latter refers to techniques the reporting institution may use to mitigate credit risk, hence reduce the capital requirement of a credit exposure. Four types of CRM techniques, viz., collateral, netting, **guarantees** and credit derivatives, are recognized for this purpose provided that they satisfy the relevant operational requirements and conditions set out in the definition of “**valid bilateral netting agreement**” in section 2(1), or sections 77, 79, 80, 98 or 99 of the Rules, as the case requires. For the avoidance of doubt, guarantees issued by other offices of the reporting institution are not regarded as recognized CRM. See Section C for capital treatment and reporting arrangement.
6. Double counting of exposures arising from the same contract or transaction should be avoided. For example, only the undrawn portion of a loan commitment should be reported as an off-balance sheet exposure under item 9a, b or c of Division B while the actual amount which has been lent out should be reported as an on-balance sheet exposure under the relevant class of Division A. **Trade-related contingencies** such as trust receipts and shipping guarantees for which the exposures have already been reported as letters of credit issued or loans against import bills etc. should not be reported under item 3 of Division B.
7. In certain cases, credit exposures arising from **derivative contracts** may already be reflected, in part, on the balance sheet. For example, the reporting institution may have recorded current credit exposures to counterparties (i.e. **mark-to-market** values) under foreign exchange and interest rate related contracts on the balance sheet, typically as either sundry debtors or sundry creditors. To avoid double counting, such exposures should be excluded from the on-balance sheet exposures and treated as off-balance sheet exposures for the purposes of this Form.
8. Accruals on an exposure should be classified and weighted in the same way as the exposure. Accruals which cannot be so classified should, with the **prior consent** of the Monetary Authority (MA), be included in Class XI - Other exposures which are not **past due exposures**.
9. Other than those covered by valid bilateral netting agreements, the reporting institution should adopt the “economic substance” approach for capital treatment of repo-style transactions and report them as on-balance sheet exposures in Division A in the following manner:
 - (a) **repos of securities** - where the reporting institution has sold securities under repo agreements, the securities sold should continue to be treated as assets on the balance sheet of the institution, with **regulatory capital** provided for the credit exposure to the securities;
 - (b) **reverse repos of securities** - where the reporting institution has acquired securities under reverse repo agreements, the transaction should be treated as a collateralized lending to the counterparty, providing the securities acquired meet the relevant criteria for qualifying as recognized CRM under the Rules. Regulatory capital should then be provided for the credit

exposure to the counterparty, taking into account the CRM effect of the collateral;

- (c) *securities lending* - the treatment is similar to that of repo transactions. The securities lent should continue to remain as assets on the balance sheet of the reporting institution, with regulatory capital provided for the credit exposure to the securities; and
- (d) *securities borrowing* - the treatment depends on whether the collateral provided is cash or securities:
 - (i) Where the collateral provided is cash, the transaction should be treated as a collateralized lending to the counterparty¹, providing the securities received meet the relevant criteria for qualifying as recognized CRM under the Rules. Regulatory capital should then be provided for the credit exposure to the counterparty, taking into account the CRM effect of the collateral;
 - (ii) Where the collateral provided is not cash but securities, the securities should continue to remain as assets on the balance sheet of the reporting institution, with regulatory capital provided for the credit exposure to the securities.

For repo-style transactions covered by valid bilateral netting agreements, the reporting institution should refer to paragraph 26 of Section C for capital treatment and reporting arrangement.

- 10. ***Underlying exposures*** of a ***synthetic securitization transaction*** which fulfils the requirements set out in Schedule 10 of the Rules should be reported in this Form with the CRM available to hedge the credit risk of the underlying exposures taken into account. For cases which are not specified in these instructions or in any other supervisory guidance relevant to securitization transactions, reporting institution should consult the HKMA on the reporting arrangements.

Section B: Exposure Classification, Determination of Credit Conversion Factors and Risk-weights

B.1 On-balance Sheet Exposures

Exposure Classification

- 11. Division A of the Form is organized according to the 12 standard classes into which on-balance sheet exposures should be classified under the STC approach:

Class I - ***Sovereign*** exposures

¹ For securities lending or borrowing where the contractual agreement is made between the securities borrower/lender and the custodian (e.g. Clearstream Banking or Euroclear Bank) and the securities borrower/lender has no knowledge as from/to whom the security is borrowed/lent, the custodian becomes the “counterparty” of the securities borrower/lender.

Class II	- Public sector entity exposures
Class III	- Multilateral development bank exposures
Class IV	- Bank exposures
Class V	- Securities firm exposures
Class VI	- Corporate exposures
Class VII	- Collective investment scheme exposures
Class VIII	- Cash items
Class IX	- Regulatory retail exposures
Class X	- Residential mortgage loans
Class XI	- Other exposures which are not past due exposures
Class XII	- Past due exposures

12. The 12 classes are mutually exclusive and therefore any given exposure should be reported under only one of them. For instance, any exposure which falls within the definition of “past due exposure” should only be reported under Class XII and not elsewhere.

Determination of Risk-weights

13. The risk-weight for an exposure under any of Classes I, II, IV to VII is determined based on its credit assessment rating assigned by an **external credit assessment institution (ECAI)** recognized by the HKMA. Each of these six ECAI ratings based portfolios has its own risk-weighting framework under which risk-weights are mapped to a scale of **Credit Quality Grades** represented by the numerals 1, 2, 3, 4, 5 or 6, as the case may be. **Annex IIIb-A** sets out how, for each portfolio, different sets of notations used by different ECAIs are mapped to the Credit Quality Grades. It also provides separate scales specifically for risk-weighting exposures to banks, securities firms and corporates with short-term credit assessment rating assigned by ECAIs.
14. There are a number of general principles that AIs should follow for the selection of the appropriate external credit assessment rating for risk-weighting an exposure. These principles are incorporated in **Annex IIIb-B**.
15. The term “issuer rating” means, for all ECAI ratings based portfolios, an **ECAI issuer rating** assigned to an **obligor** and the term “issue specific rating” means:
- for Class I (i.e. Sovereign Exposures): a **long-term ECAI issue specific rating** specifically assigned to a particular debt obligation of an obligor;
 - for Classes IV, V and VI (i.e. Bank, Securities Firm and Corporate Exposures): either a long-term or a **short-term ECAI issue specific rating** specifically assigned to a particular debt obligation of an obligor; and
 - for Class VII (i.e. Collective Investment Scheme Exposures): an **ECAI issue specific rating** specifically assigned to a particular collective investment scheme.

16. The following explains how exposures in each class are risk-weighted and, where applicable, the relevant principles for reporting exposures under the class.

Item Nature of item

Class I **Sovereign Exposures**

1. *Domestic currency exposures* to the Government are risk-weighted at 0%. Included are:

(a) deposits placed with and loans made to the Government (these include those for the account of the Exchange Fund and clearing balances with the Exchange Fund).

(b) holdings of Exchange Bills/Notes. Market makers who have short positions in Exchange Fund Bills/Notes may report their net holdings of such instruments provided the short positions are covered by the Sale and Repurchase Agreements with the HKMA. The following steps should be taken in determining the amount to be reported:

(i) the long and short positions of instruments with a residual maturity of under 1 year may be offset with each other;

(ii) the long and short positions of instruments with a residual maturity of 1 year and over may be offset with each other;

(iii) if the net positions of both (i) and (ii) above are long, the positions should be reported;

(iv) if the net position in (i) is long and the net position in (ii) is short, or the other way round, the positions can be netted with each other on a dollar for dollar basis. The resultant net long position, if any, should be reported.

2. Other exposures to sovereigns include foreign currency exposures to the Government, and all exposures to other sovereigns. For risk-weighting purposes, these exposures should be divided into those with an issue specific rating and those without.

(a) *Exposure with an issue specific rating (i.e. rated exposure)*

The issue specific rating should be used to determine the applicable risk-weight of the exposure based on Table 1.

Table 1

Credit Quality Grade of an issuer/issue	1	2	3	4	5	6
Risk-weight	0%	20%	50%	100%	100%	150%

(b) Exposure without an issue specific rating (i.e. unrated exposure)

(i) Where the sovereign has no issuer rating and none of its other debt obligations has an issue specific rating, a 100% risk-weight should be allocated to the exposure.

(ii) Where the sovereign has an issuer rating and/or any of its other debt obligations has an issue specific rating, the following instructions apply:

(A) Where the sovereign has an issuer rating, the risk-weight which is applicable to that rating based on Table 1 should be allocated to the exposure. Nevertheless, in case the applicable risk-weight is lower than 100%, the exposure should be senior (i.e. unsubordinated) in order for the lower risk-weight to apply.

(B) Where any of the other debt obligations of the sovereign has an issue specific rating, the risk-weight which is applicable to that rating based on Table 1 should be allocated to the exposure. Nevertheless, in case the applicable risk-weight is lower than 100%, the exposure should rank pari passu or senior to the rated debt obligation in all respects in order for the lower risk-weight to apply.

(C) Where both (A) and (B) above apply, the reporting institution will have the discretion to choose which one to allocate to the exposure.

(c) Despite (a) and (b) above:

(i) where an overseas banking supervisory authority exercises its discretion under Basel II to permit banks in its jurisdiction to allocate a lower risk-weight to domestic currency exposures to its sovereign, the reporting institution may allocate the same lower risk-weight to its domestic currency exposure to the sovereign;

(ii) where (i) above is not applicable (e.g. the banking supervisory authority concerned has not yet adopted Basel II, or has adopted Basel II but has not exercised

its discretion referred to in (i)), the institution may allocate to its domestic currency exposure to a sovereign a risk-weight of

- (A) 0% if the exposure arises from a loan granted by the institution to the sovereign;
- (B) 10% if the exposure arises from fixed rate *debt securities* with a residual maturity of less than one year or floating rate debt securities of any maturity;
- (C) 20% if the exposure arises from fixed rate debt securities with a residual maturity of not less than one year.

3. **Relevant international organization** exposures are risk-weighted at 0%.

Class II Public Sector Entity (PSE) Exposures

4. Exposures to *domestic PSEs* should be allocated a risk-weight which is the next higher risk-weight than the risk-weight attributable to the credit quality grade applicable to the issuer rating of the Government, with the following exceptions should any of these become applicable in future:

- (a) Where the issuer rating of the Government is mapped to credit quality grade 4 or 5 (i.e. allocated a 100% risk-weight), exposures to domestic PSEs should be allocated a 100% risk-weight.
- (b) Where the issuer rating of the Government is mapped to credit quality grade 6 (i.e. allocated a 150% risk-weight), exposures to domestic PSEs should be allocated a 150% risk-weight.
- (c) If no issuer rating is assigned to the Government, exposures to domestic PSEs should be allocated a 100% risk-weight.

5. Exposures to *foreign PSEs* should be allocated a risk-weight which is the next higher risk-weight than the risk-weight attributable to the credit quality grade applicable to the issuer rating of the sovereign of the jurisdiction in which the PSEs are *incorporated*, with the following exceptions:

- (a) Exposures to *sovereign foreign PSEs* should be allocated the risk-weight applicable to the issuer rating of the sovereign of the jurisdiction in which the PSEs are incorporated.

- (b) Where the issuer rating of the sovereign of the jurisdiction in which a PSE is incorporated is mapped to credit quality grade 4 or 5 (i.e. allocated a 100% risk-weight), exposures to the PSE should be allocated a 100% risk-weight.
- (c) Where the issuer rating of the sovereign of the jurisdiction in which a PSE is incorporated is mapped to credit quality grade 6 (i.e. allocated a 150% risk-weight), exposures to the PSE should be allocated a 150% risk-weight.
- (d) If no issuer rating is assigned to a sovereign, exposures to its PSEs should be risk-weighted at 100%.

Class III Multilateral Development Bank (MDB) Exposures

6. MDB exposures are risk-weighted at 0%.

Class IV Bank Exposures

7a & b. Bank exposures should be divided into those with an original contractual period of time for full repayment (“original maturity”) of 3 months or less (“**3 months’ exposures**”) and those with an original maturity longer than 3 months (“**general exposures**”).

Exposures within each of the two categories should then be divided into those with an issue specific rating and those without.

- (a) Exposure with an issue specific rating (i.e. rated exposure)

The issue specific rating should be used to determine the applicable risk-weight of the exposure based on Table 2 if it is a long-term issue specific rating, or based on Table 3 if it is a short-term issue specific rating.

Table 2

Credit Quality Grade of an issuer/issue	1	2	3	4	5
Risk-weight for general exposures	20%	50%	50%	100%	150%
Risk-weight for 3 months’ exposures (other than those which have a short-term issue specific rating)	20%	20%	20%	50%	150%

Table 3

Short-term Credit Quality Grade of an issue	1	2	3	4
Risk-weight for exposures with a short-term issue specific rating	20%	50%	100%	150%

Notwithstanding the above, a rated 3 months' exposure denominated and funded in Hong Kong dollars may be allocated a risk-weight of 20%.

(b) Exposure without an issue specific rating (i.e. unrated exposure)

(i) Where the bank has no issuer rating and none of its other debt obligations has been assigned an issue specific rating, the risk-weight to be allocated should be 50% for a general exposure and 20% for a 3 months' exposure. However, the risk-weight to be allocated will be –

(A) the one applicable to the sovereign of incorporation of the bank instead if it is higher than either 50% or 20%, as the case may be; or

(B) 100% if the sovereign does not have an issuer rating.

(ii) Where the bank has an issuer rating and/or any of its other debt obligations has an issue specific rating, the risk-weight of the exposure should be determined as follows:

(A) *Unrated general exposure*

(I) Where the bank has an issuer rating and/or any of its other debt obligations has a long-term issue specific rating, the reporting institution may, at its choice, determine the risk-weight to be allocated to the exposure according to either approach set out below:

- Where the bank has an issuer rating, the risk-weight which is applicable to that rating based on the row of "Risk-weight for general exposures" in Table 2 should be applied to the exposure. Nevertheless, in case the applicable risk-weight is lower than 50%, the exposure should be senior (i.e. unsubordinated) for the lower risk-weight to apply;

- Where any of the other debt obligations of the bank has a long-term issue specific rating, the risk-weight which is applicable to that rating based on the row of “Risk-weight for general exposures” in Table 2 should be applied to the exposure. Nevertheless, in case the applicable risk-weight is lower than the 50%, the exposure should rank pari passu or senior to the rated debt obligation in all respects for the lower risk-weight to apply.

(II) Where any of the other debt obligations of the bank has a short-term issue specific rating, but the bank does not have an issuer rating, and none of its other debt obligations has a long-term issue specific rating, the risk-weight applicable to the exposure should be determined according to (i) above.

(B) *Unrated 3 months’ exposures*

(I) Where none of the other debt obligations of the bank has a short-term issue specific rating, but the bank has an issuer rating and/or any of its other debt obligations has a long-term issue specific rating, the risk-weight which should be applied to the exposure will be, at the choice of the reporting institution, either:

- the risk-weight applicable to the issuer rating of the bank as determined based on the row of “Risk-weight for 3 months’ exposures” in Table 2; or
- the risk-weight applicable to the long-term issue specific rating of any of its other debt obligations as determined based on the row of “Risk-weight for 3 months’ exposures” in Table 2.

(II) Where any of the other debt obligations of the bank has a short-term issue specific rating, but the bank does not have an issuer rating, and none of its other debt obligations has a long-term issue specific rating, the risk-weight which should be applied to the exposure will be the higher of:

- 20%; or
- the risk-weight applicable to the short-term issue specific rating as determined based on Table 3.

(III) Where both (1) the bank has an issuer rating and/or any of its other debt obligations has a long-term issue specific rating, and (2) another debt obligation of the bank has a short-term issue specific rating, the risk-weight which should be applied to the exposure will be the higher of:

- at the choice of the reporting institution, either the risk-weight applicable to the issuer rating or the risk-weight applicable to the long-term issue specific rating as determined based on the row of “Risk-weight for 3 months’ exposures” in Table 2, if the two risk-weights are different; or
- the risk-weight applicable to the short-term issue specific rating as determined based on Table 3.

(iii) Exceptions to the above

(A) Notwithstanding (ii)(A)(I) to (ii)(B)(III), the risk-weight of the exposure should be adjusted to 150% if the bank has a short-term issue specific rating, which maps to a 150% risk-weight based on Table 3, assigned to any of its other debt obligations.

(B) Notwithstanding (ii)(B)(I) to (iii)(A), a 3 months’ exposure denominated and funded in Hong Kong dollars may be allocated a risk-weight of 20%.

For the purpose of this class, export trade bills negotiated under other banks’ letters of credit may be reported as exposures to the issuing banks of the letters of credit.

Class V Securities Firm Exposures

8. Exposures should be divided into those with an issue specific rating and those without.

(a) Exposure with an issue specific rating (i.e. rated exposure)

The issue specific rating should be used to determine the risk-weight of the exposure based on the following two tables, viz., Table 4 if it is a long-term issue specific rating and Table 5 if it is a short-term issue specific rating.

Table 4

Credit Quality Grade of an issuer/issue	1	2	3	4	5
Risk-weight for exposures with long-term issue specific rating / issuer rating	20%	50%	50%	100%	150%

Table 5

Short-term Credit Quality Grade for an issue	1	2	3	4
Risk-weight for exposures with a short-term issue specific rating	20%	50%	100%	150%

(b) Exposure without an issue specific rating (i.e. unrated exposure)

(i) An unrated exposure to a securities firm should be allocated a 50% risk-weight if the securities firm

(A) has no issuer rating and none of its other debt obligations has any issue specific rating; or

(B) has no issuer rating and none of its other debt obligations has a long-term issue specific rating, but any of its other debt obligations has a short-term issue specific rating.

However, the risk-weight to be allocated will be –

(C) the one applicable to the sovereign of incorporation of the firm instead if it is higher than 50%; or

(D) 100% if the sovereign does not have an issuer rating.

(ii) Where the securities firm has an issuer rating and/or any of its other debt obligations has a long-term issue specific rating, the risk-weight of the exposure should be determined based on the following instructions:

(A) Where the firm has an issuer rating, the risk-weight which is applicable to that rating based on Table 4 should be allocated to the exposure.

Nevertheless, in case the applicable risk-weight is lower than 50%, the exposure should be senior (i.e. unsubordinated) for the lower risk-weight to apply.

- (B) Where any of the other debt obligations of the firm has a long-term issue specific rating, the risk-weight which is applicable to that rating based on Table 4 should be allocated to the exposure. Nevertheless, in case the applicable risk-weight is lower than 50%, the exposure should rank pari passu or senior to the rated debt obligation in all respects for the lower risk-weight to apply.
- (C) Where both (A) and (B) above apply, the reporting institution will have the discretion to choose which one to allocate to the exposure.

(iii) Exceptions to the above

- (A) Notwithstanding (i)(B) above, where any of the other debt obligations of the firm (“reference debt”) has a short-term issue specific rating which maps to a risk-weight of 50% or 100% based on Table 5, and the exposure has a residual maturity equal to or shorter than the original maturity of the reference debt, the risk-weight to be allocated to the exposure should be 100%. If the firm has two or more debt obligations which attract a risk-weight of 50% or 100%, the one with the longest original maturity should be taken as the reference debt.
- (B) Notwithstanding (ii) above, where any of the other debt obligations of the firm (“reference debt”) has a short-term issue specific rating which maps to a risk-weight of 50% or 100% based on Table 5, and the exposure has a residual maturity equal to or shorter than the original maturity of the reference debt, the risk-weight to be allocated to the exposure should be the higher of 100% or the risk-weight derived from (ii) above. If the firm has two or more debt obligations which attract a risk-weight of 50% or 100%, the one with the longest original maturity should be taken as the reference debt.
- (C) Notwithstanding (i)(B) to (iii)(B) above, the risk-weight of the exposure should be adjusted to 150% if any of the other debt obligations of the firm has

a short-term issue specific rating which maps to a 150% risk-weight based on Table 5.

Class VI Corporate Exposures

9a to d. Exposures² should be divided into those with an issue specific rating and those without.

(a) Exposure with an issue specific rating (i.e. rated exposure)

The issue specific rating should be used to determine the risk-weight of the exposure based on the following two tables, viz., Table 6 if it is a long-term issue specific rating and Table 7 if it is a short-term issue specific rating.

Table 6

Credit Quality Grade of an issuer/issue	1	2	3	4	5
Risk-weight for exposures with long-term issue specific rating / issuer rating	20%	50%	100%	100%	150%

Table 7

Short-term Credit Quality Grade for an issue	1	2	3	4
Risk-weight for exposures with a short-term issue specific rating	20%	50%	100%	150%

(b) Exposure without an issue specific rating (i.e. unrated exposure)

(i) An unrated exposure to a corporate should be assigned a 100% risk-weight if the corporate

(A) has no issuer rating and none of its other debt obligations has any issue specific rating; or

(B) has no issuer rating and none of its other debt obligations has a long-term issue specific rating, but any of its other debt obligations has a short-term issue specific rating.

However, the risk-weight to be assigned will be –

(C) the one applicable to the sovereign of incorporation of the corporate instead if it is higher than 100%; or

² For the avoidance of doubt, corporate exposures include exposures to regional, provincial or municipal governments.

- (D) 100% if the sovereign does not have an issuer rating.
- (ii) Where the corporate has an issuer rating and/or any of its other debt obligations has a long-term issue specific rating, the risk-weight of the exposure should be determined based on the following instructions:
 - (A) Where the corporate has an issuer rating, the risk-weight which is applicable to that rating based on Table 6 should be allocated to the exposure. Nevertheless, in case the applicable risk-weight is lower than 100%, the exposure should be senior (i.e. unsubordinated) for the lower risk-weight to apply.
 - (B) Where any of the other debt obligations of the corporate has a long-term issue specific rating, the risk-weight which is applicable to that rating based on Table 6 should be allocated to the exposure. Nevertheless, in case the applicable risk-weight is lower than 100%, the exposure should rank pari passu or senior to the rated debt obligation in all respects for the lower risk-weight to apply.
 - (C) Where both (A) and (B) above apply, the reporting institution will have the discretion to choose which one to allocate to the exposure.

(iii) Exceptions to the above

- (A) Notwithstanding (ii) above, where any of the other debt obligations of the corporate (“reference debt”) has a short-term issue specific rating which maps to a risk-weight of 50% or 100% based on Table 7, and the exposure has a residual maturity equal to or shorter than the original maturity of the reference debt, the risk-weight to be allocated to the exposure should be the higher of 100% or the risk-weight derived from (ii) above. If the corporate has two or more debt obligations which attract a risk-weight of 50% or 100%, the one with the longest original maturity should be taken as the reference debt.
- (B) Notwithstanding (i)(B) to (iii)(A) above, the risk-weight of a exposure should be adjusted to 150% if the corporate has a short-term issue specific rating

assigned to any of its other debt obligations which maps to a 150% risk-weight based on Table 7.

Class VII Collective Investment Scheme (CIS) Exposures

10a to d. Holding of shares or units in a CIS which has been assigned with an issue specific rating should be allocated a risk-weight based on Table 8.

Table 8

Credit Quality Grade of a CIS	1	2	3	4	5
Risk-weight for CIS with issue specific rating	20%	50%	100%	100%	150%

If no issue specific rating is assigned to a CIS, the risk-weight allocated to the units or shares in the CIS held by the reporting institution should be 100%.

Holdings in a CIS which invests in assets other than cash and fixed income assets should be risk-weighted at 100% and reported under item *10c*.

Class VIII Cash Items

- 11.* Notes and coins are allocated a risk-weight of 0%.
- 12.* Government certificates of indebtedness are allocated a risk-weight of 0%.
- 13.* Gold bullion held by the reporting institution or held by another person for the institution on an allocated basis, to the extent backed by gold bullion liabilities, is risk-weighted at 0%. Gold bullion held in safe custody for other institutions or customers should not be reported.

Gold bullion held for the reporting institution on an unallocated basis by a third party, though backed by gold liabilities, should be risk-weighted as an exposure to that third party and reported under the class to which the third party belongs.
- 14.* Gold bullion held not backed by gold liabilities, which refers to all other holdings of gold bullion not included in item *13* above, is risk-weighted at 100%.
- 15.* Cash items in the course of collection refer to the amount of cheques, drafts and other items drawn on other banks which are payable to the account of the reporting institution immediately

upon presentation and which are in the process of collection. Such items are allocated a risk-weight of 20%. Included are cheques and drafts against which the institution has paid to its customers (i.e. by purchasing or discounting the cheques or drafts presented by the customers) and in respect of which it now seeks payment from the drawee banks.

Import and export trade bills held by the reporting institution which are in the process of collection should be excluded and allocated a risk-weight according to the counterparty of the exposure.

Unsettled clearing items under the interbank clearing system in Hong Kong, and receivables arising from transactions in securities (other than repo-style transactions), foreign exchange, and commodities which are not yet due for settlement should be excluded.

16a to e. Failed trade - delivery-versus-payment (DvP) basis

For any transaction in securities (other than repo-style transactions), foreign exchange, and commodities entered into on a ***delivery-versus-payment (DvP) basis***³ where payment / delivery has not yet taken place after the settlement date, the reporting institution should report the ***positive current exposure*** of the transaction in both the column of “Principal Amount” and the column of “Principal Amount after CRM”. The ***risk-weighted amount*** (RWA) of the transaction is calculated by multiplying the positive current exposure of the transaction by the risk-weight corresponding to the length of the period of unsettlement (both the start and end days of the period inclusive).

Failed trade - non-DvP basis

When such transaction is entered into on a non-DvP basis and payment / delivery from the counterparty has not yet taken place up to and including the fourth ***business day*** after the settlement date, the amount of payment made or the current market value of thing delivered by the reporting institution, plus any positive current exposure associated with the transaction, should be treated as exposure to that counterparty. The amount of the exposure should be reported under the class to which the counterparty belongs and risk-weighted at the risk-weight applicable to that counterparty.

When in any of the above non-DvP transactions, payment / delivery has not yet taken place for five or more business days after the settlement date, the reporting institution should deduct

³ DvP transactions include payment-versus-payment (PvP) transactions

the relevant amount from the capital base. Please refer to Form M(BS)3(II) and Part 3 of the Rules for details.

17a to c.

These items are for reporting institutions which have adopted **simple approach** for CRM treatment of collateral (see Section C) to report exposures collateralized by cash deposits (including certificates of deposits and comparable instruments issued by the institution). The amount of exposures secured by cash deposits should be reported in the column of “Principal Amount after CRM” along the corresponding risk-weight applicable to the cash deposits:

- where the cash deposits and the exposures have no **currency mismatch**, the cash deposits are risk-weighted at 0%;
- where the cash deposits and the exposures have currency mismatch, the cash deposits are risk-weighted at 20%;
- cash deposits securing repo-style transactions attract a risk-weight of 10% if the repo-style transactions satisfy criteria D3 to D10 set out in **Annex IIIb-D**.

When the cash deposit pledged to the institution is held at a third-party bank in a non-custodial arrangement, the institution should treat the cash deposit as an exposure to that third-party bank. The amount secured by that deposit should be reported under Class IV in the column of “Principal Amount after CRM” and allocated the risk-weight applicable to that third-party bank.

Class IX Regulatory Retail Exposures

18a & b.

Exposures which qualify for this class are allocated a risk-weight of 75%.

To apply the risk-weight of 75% to exposures to **small businesses** or individuals, the reporting institution must satisfy the relevant criteria set out in section 64 of the Rules.

Where the regulatory retail exposures to a borrower include a residential mortgage loan which is eligible for a risk-weight of 75% according to section 65(4)(a) of the Rules, the RML should be reported under item *19b* of Class X – Residential Mortgage Loans.

Exposures to small businesses or individuals which are not past due exposures but do not satisfy the criteria for inclusion as regulatory retail exposures or residential mortgage loans (see Class X) should be reported as either corporate exposures (see

Class VI) or other exposures which are not past due exposures (see Class XI).

Class X Residential Mortgage Loans (RMLs)

19. RMLs which are not past due exposures should be reported under this item. The following RMLs should also be included:

- (A) RMLs granted for the purchase of flats under Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme, which are covered by guarantees issued by the Housing Authority; and
- (B) RMLs granted under Mortgage Insurance Programme of the Hong Kong Mortgage Corporation Limited.

19a. 35% risk-weight

RMLs eligible for a risk-weight of 35% must satisfy the relevant criteria set out in section 65(1) of the Rules.

19b. 75% risk-weight

RMLs which are not eligible for the risk-weight of 35% but can satisfy the criteria set out in section 65(4)(a) of the Rules can be allocated a risk-weight of 75%.

19c. 100% risk-weight

Other RMLs (i.e. those which do not satisfy sections 65(1) and 65(4)(a) of the Rules) which are not past due exposures should be allocated a risk-weight of 100%.

19d. Where the reporting institution has opted to risk-weight those RMLs which are secured by a first legal charge on residential properties situated outside Hong Kong according to the capital adequacy requirements in the jurisdictions in which the properties are situated, the RMLs should be reported under this item if the risk-weights are other than 35%, 75% or 100%. RMLs which are risk-weighted at 35%, 75% or 100% according to those jurisdictions' capital adequacy requirements should be reported under item 19a, 19b or 19c, whichever is applicable.

For (A) and (B), the reporting arrangements are set out in the following:

- (C) The ***principal amount*** of these RMLs should be reported under item 19a, 19b or 19c, depending on whether they can, after applying section 65(6) of the Rules in respect of

the guarantees or insurances concerned, meet the respective conditions for being so risk-weighted.

- (D) For (A), the CRM effect of the guarantees can be taken into account and reported according to paragraph 26(a) of Section C, while in the case of (B), the insured portion of the RMLs can be treated as guaranteed exposures and reported according to paragraph 26(a) of Section C if the insurance concerned meets all the criteria set out in section 98 of the Rules.

Class XI Other Exposures which are not Past Due Exposures

Included in this class are all on-balance sheet exposures falling within the scope of this Form which are not past due exposures and have not been included elsewhere in this Form. Exposures included in this class are subject to a risk-weight of 100%, unless otherwise specified by the MA. Examples of exposures to be included in this class are:

20a. Exposures to individuals not elsewhere reported

This refers to exposures to individuals which have not been included in Class X – Residential Mortgage Loans and do not satisfy the qualifying criteria for inclusion in Class IX - Regulatory Retail Exposures.

20b. Investments in equity or other capital instruments of other banks and financial institutions (other than where deducted from the capital base)

Included are investments in equity or other capital instruments without issue-specific ratings issued by banking, securities, insurance and other financial institutions, for which the MA is satisfied that a deduction from capital base is not required. Capital instruments with issue-specific ratings can be reported under Class IV, Class V or Class VI, as the case requires.

20c. Investments in equity of other entities

Included are investments in commercial entities, for which the MA is satisfied that a deduction from capital base is not required.

20d. Premises, plant and equipment, other fixed assets for own use, and other interest in land

Included are investments in premises, plant and equipment and all other fixed assets of the reporting institution which are held for own use and also any fixed asset which is held by the institution

as lessee under a finance lease in accordance with the Hong Kong Accounting Standards 17 issued by Hong Kong Institute of Certified Public Accountants.

Other interests in land which are not occupied or used in the operation of the reporting institution's business should also be reported here.

20e. Other on-balance sheet exposures which are not elsewhere specified (or reported here as instructed by the MA)

This refers to other investments or exposures which are not classified elsewhere, and may include any fixed asset leased by the reporting institution under an operating lease.

Where necessary, the MA may specify risk-weights which are greater than 100% for an exposure falling within this class. Such exposure should be reported under this item.

Class XII Past Due Exposures

21a to g. A risk-weight of 150% is allocated to the unsecured portion of a past due exposure, determined by netting the amount of specific provision and the amount of *credit protection* from the gross outstanding amount of the exposure.

17. Risk-weights for Credit-linked Notes held

A *credit-linked note* held by the reporting institution should be allocated a risk-weight which is the higher of the risk-weight of the *reference obligation* of the note, or the risk-weight of the note issuer. The amount of the exposure, which is the book value of the note, should be reported under the relevant class in Division A. Where the note is referenced to multiple reference obligations, the institution should determine the risk-weight of the basket of reference obligations according to the principles set out in paragraph 23(g) in Section B.2 below.

B.2 Off-balance Sheet Exposures

Classification and Determination of Credit Conversion Factors

18. The reporting institution should classify off-balance sheet exposures into the following 17 standard items and report the principal amount and the RWA arrived at for each exposure based on the instructions under Section C.

19. **Credit conversion factors (CCFs)** for items 1 to 9 are set out in the Form. CCFs for items 10 to 17 are set out in paragraphs 20 to 22.

<u>Item</u>	<u>Nature of item</u>
1.	<i>Direct credit substitutes</i>
2.	<i>Transaction-related contingencies</i>
3.	Trade-related contingencies
4.	<i>Asset sales with recourse</i>
5.	<i>Forward asset purchases</i>
6.	<i>Partly paid-up shares and securities</i>
7.	<i>Forward forward deposits placed</i>

These include a commitment to place a forward forward deposit. Where the reporting institution has contracted to receive the deposit, failure to deliver by the counterparty will result in an unanticipated change in its interest rate exposure and may involve a replacement cost. Such exposure should be accorded the same treatment as ***interest rate contracts*** and reported under item 11.

8. ***Note issuance and revolving underwriting facilities***

9a to c. Other commitments

Included is the undrawn portion of any binding arrangements which obligate the reporting institution to provide funds or to incur off-balance sheet exposures (e.g. this includes commitment to issue letters of credit or performance bonds, but does not include commitments to enter into OTC derivative / credit derivative contracts) at some future dates.

A commitment is regarded as being created no later than the acceptance in writing by the customer of the facility offered.

In the case of a commitment the drawdown of which will give rise to an off-balance sheet exposure falling within any of items 1 to 8 and 17, the CCF applicable to the commitment should be the lower of

- the CCF applicable to the commitment based on its original maturity⁴ and whether it can be cancelled at any time unconditionally; or
- the CCF applicable to the off-balance sheet exposure arising from the drawdown of the commitment.

If the commitment is in the form of a general banking facility consisting of 2 or more credit lines (including lines for entering into OTC derivative / credit derivative contracts), the reporting institution should assign a CCF to the commitment based on its original maturity and whether it can be unconditionally cancelled at any time.

- 9a. This item includes commitments which are unconditionally cancellable without prior notice by the reporting institution other than for “force majeure” reason, or which effectively provide for automatic cancellation due to deterioration in a borrower’s creditworthiness. This also includes any revolving or undated/open-ended commitments, e.g. overdrafts or unused credit card lines, provided that they can be unconditionally cancelled at any time and subject to credit review at least annually.
- 9b. Other commitments with an original maturity of up to one year, or commitments to incur off-balance sheet exposures of which the applicable CCF is 20%.
- 9c. Other commitments with an original maturity of over one year, or commitments to incur off-balance sheet exposures of which the applicable CCF is 50%.
10. ***Exchange rate contracts***

The following derivative contracts may be excluded from the calculation of RWA:

- exchange rate contracts (except those which are based on gold) with an original maturity of 14 calendar days or less. When such contracts are covered by a valid bilateral netting agreement (see Section C below), the reporting institution may net the profit or loss on such contracts against those on other contracts covered by the same agreement in arriving at the net exposure for capital adequacy purposes. The inclusion or exclusion of such contracts for netting purposes must however be done on a consistent basis; or

⁴ This is the length of time between the date the commitment is made and the earliest date on which the reporting institution can, at its option, unconditionally cancel the commitment.

- forward exchange rate contracts arising from swap deposit arrangements. Under such arrangements, the money deposited by the customer remains under the control of the reporting institution during the life of the forward contract, therefore the institution is in a position to ensure that the customer does not default on the settlement of the forward contract.

11. Interest rate contracts
12. ***Equity contracts***
13. ***Precious metal contracts***
14. ***Debt security contracts or other commodity contracts***
15. Credit derivative contracts

This item is intended for the reporting of counterparty credit risk exposures to ***credit default swaps*** and ***total return swaps*** (“credit derivative contracts”) which are booked in the trading book.

Credit risk exposure to ***reference entities*** of credit derivative contracts booked in the banking book does not fall within the scope of this item and should be reported in the following manners:

- (a) Reporting institution as protection seller

Credit risk exposure to a reference entity of a credit derivative contract is reported as “direct credit substitutes” under item 1 above.

- (b) Reporting institution as protection buyer

Credit risk protection provided by a credit derivative contract is either:

- ignored for capital adequacy purposes if the protection is not bought for the purposes of hedging the credit risk of an exposure of the institution or the credit derivative contract is not a ***recognized credit derivative contract***; or
- accounted for in the ways as described in Section C if the protection is bought for the purposes of hedging the credit risk of an exposure of the institution and the credit derivative contract is a recognized credit derivative contract.

If the reporting institution has taken into account the CRM effects of recognized credit derivative contracts purchased against its banking book exposures or counterparty credit risk exposures in accordance with Division 9 of Part 4 of the Rules, the credit equivalent amount of these contracts can be taken as zero.

16. OTC derivative transactions and credit derivative contracts subject to valid bilateral netting agreements

This item refers to the net counterparty credit risk exposure obtained by the use of the methodology described in paragraph 31. For capital adequacy purposes, only counterparty credit risk exposures of credit derivative contracts booked in the trading book and OTC derivative transactions may be reported on a net basis.

17. Other off-balance sheet exposures not elsewhere reported.

For off-balance sheet exposures other than those included in items 1 to 16 above, the reporting institution should consult the HKMA on the reporting arrangements.

20. CCFs for OTC derivative transactions

The CCFs applicable to OTC derivative transactions are set out in the following table:

Residual Maturity	Exchange Rate (including gold)	Interest Rate	Equity	Precious Metal	Debt Security or Other Commodity
1 year or less	1.0%	0%	6.0%	7.0%	10.0%
Over 1 year to 5 years	5.0%	0.5%	8.0%	7.0%	12.0%
Over 5 years	7.5%	1.5%	10.0%	8.0%	15.0%

For contracts with multiple exchanges of principal, the CCFs to be used are to be multiplied by the number of remaining payments in the contract.

For contracts structured to settle outstanding exposure following specified payment dates and where the terms are reset such that the market value of the contract is zero on these dates, the residual maturity should be set equal to the time until the next reset date. In the case of interest rate contracts which meet these criteria and the remaining time to final maturity of the contracts is more than one year, the CCF is subject to a floor of 0.5%.

21. CCFs for credit derivative contracts booked in the trading book

The CCFs to be applied for the calculation of **potential exposure** for single name credit derivative contracts are as follows:

	Protection buyer	Protection seller
Total Return Swap		
Qualifying reference obligation ⁵	5%	5%
Non-qualifying reference obligation ⁵	10%	10%
Credit Default Swap		
Qualifying reference obligation ⁵	5%	5%*
Non-qualifying reference obligation ⁵	10%	10%*

* The protection seller of a credit default swap is required to calculate potential exposure only when such a swap is subject to closeout upon the insolvency of the protection buyer while the reference entity is still solvent. The potential exposure of the swap should be capped at the amount of unpaid premium. The protection seller of any credit default swap without such a “closeout” clause is not required to calculate the potential exposure.

In the case of a *first-to-default credit derivative contract*, the CCF for *non-qualifying reference obligation* should be applied to the contract if there is at least one non-qualifying reference obligation in the basket of reference obligations specified in the contract, otherwise, the CCF for *qualifying reference obligation* should be used. In the case of a *second-to-default credit derivative contract*, the CCF for non-qualifying reference obligation should be applied to the contract if there are at least two non-qualifying reference obligations in the basket of reference obligations specified in the contract, otherwise, the CCF to be used should be that for qualifying reference obligation. The same principle applies to other subsequent-to-default credit derivative contracts.

22. For OTC derivative transactions other than those mentioned in paragraph 20, credit derivative contracts other than those mentioned in paragraph 21, and other off-balance sheet items the CCF of which is not specified in the Form, a CCF of 100% should be applied unless otherwise specified by the MA.

Determination of Risk-weights for Off-balance Sheet Items

23. Risk-weights for items other than OTC derivative and certain credit derivative contracts (Items 1 to 9 and 17)

Except the following, the applicable risk-weight to an off-balance sheet item is determined in accordance with the relevant instructions under Section B above as if the item were an on-balance sheet exposure.

- (a) Asset sales with recourse;
- (b) Forward asset purchases;
- (c) Partly paid-up shares and securities; and
- (d) Exposures arising from the selling of credit derivative contracts in the form of total return swaps or credit default swaps booked in the reporting institution’s banking book reported as direct credit substitutes.

⁵ The definition of “qualifying” is same as that of the “qualifying” category for the treatment of specific risk under the *standardized (market risk) approach* described in Part 8 of the Rules and also includes reference obligations issued by sovereigns whose credit quality grades are 1, 2 or 3 as determined in accordance with section 287 of the Rules.

The applicable risk-weight to an exposure in any of the above categories should be:

- (e) in the case of (a) and (b), determined by reference to the risk-weights allocated to the assets sold/to be purchased or the obligor of these assets, as the case requires;
- (f) in the case of (c), 100% (i.e. the risk-weight for equities); and
- (g) in the case of (d), determined by reference to the risk-weight of the relevant reference obligation, provided that:
 - (i) where a credit derivative contract sold is a first-to-default credit derivative contract which
 - (A) has an issue specific rating, the reporting institution should allocate to the contract the risk-weight, or deduct the contract from its core and supplementary capitals, as determined by mapping the rating to the scale of credit quality grades under the ***standardized (securitization) approach*** (see section 237 of the Rules);
 - (B) does not have an issue specific rating, the reporting institution should allocate to the contract a risk-weight which is equal to the sum of the risk-weights of the reference obligations in the basket of reference obligations specified in the contract, subject to a maximum of 1,250%.
 - (ii) where a credit derivative contract sold is a second-to-default credit derivative contract which
 - (A) has an issue specific rating, the reporting institution should allocate to the contract the risk-weight, or deduct the contract from its core and supplementary capitals, as determined by mapping the rating to the scale of credit quality grades under standardized (securitization) approach (see section 237 of the Rules);
 - (B) does not have an issue specific rating, the reporting institution should allocate to the contract a risk-weight which is equal to the sum of the risk-weights of the reference obligations in the basket of reference obligations specified in the contract, but excluding the reference obligation which carries the lowest risk-weight, subject to a maximum of 1,250%.
 - (iii) where a credit derivative contract sold is some other subsequent-to-default credit derivative contract, the same principle set out in (ii), with all necessary modifications, applies to the contract.

- (iv) where a credit derivative contract sold provides credit protection proportionately to the reference obligations in the basket as specified in the credit derivative contract, the reporting institution should calculate the risk-weight of its exposure to the credit derivative contract by taking the weighted average of the risk-weights attributable to the reference obligations in the basket in accordance with the following formula:

$$RW_a = \sum_i a_i \times RW_i$$

where:

- RW_a = Average risk-weight of a basket of reference obligations
 a_i = Proportion of credit protection allocated to a reference obligation
 RW_i = Risk-weight of a reference obligation

24. Risk-weights for OTC derivative and certain credit derivative contracts (Items 10 to 16)

The applicable risk-weights are determined by reference to the risk-weights allocated to the counterparties of these contracts in accordance with the principle set out in the second bullet point of paragraph 26(a)(iii)(A) below.

Section C: Calculation and Reporting of Risk-weighted Amount

C.1 On-balance Sheet Exposures

25. Where an exposure is not covered by any recognized CRM, the amounts reported along the row of the risk-weight applicable to the exposure in the columns of “Principal Amount” and “Principal Amount after CRM” should be the same.
26. Where an exposure is covered fully or partially by recognized CRM, the amount reported in the column of “Principal Amount after CRM” should be adjusted to reflect the CRM effect. The reporting arrangement depends on the types of recognized CRM used and, in the case of collateralized transactions, the approach used by the reporting institution is recognizing the CRM effect of the collateral:
- (a) **CRM treatment by substitution of risk-weights**, which applies to the use of collateral under the simple approach⁶ and the use of guarantees and credit derivatives:

⁶ For past due exposures secured by collateral, the reporting institution should only use the Simple Approach to CRM treatment.

- (i) Firstly, identify the class to which the exposure belongs based on the instructions set out in Section B, then report the whole principal amount (after deduction of specific provisions) of the exposure in the column of “Principal Amount” in that class along the row of the risk-weight applicable to that exposure;
- (ii) Secondly, divide the reported “Principal Amount” of the exposure into two portions: the *credit protection covered portion* and the *credit protection uncovered portion*.
 - (A) For guarantees and credit derivatives, the value of credit protection is their nominal amount. However, where the credit protection and the exposure have currency mismatch, the covered portion should be reduced by a *haircut* for the currency mismatch.

$$G_a = G \times (1 - H_{fx})$$

where:

- G_a = The amount of the exposure covered by credit protection and adjusted for currency mismatch
- G = Nominal amount of the credit protection
- H_{fx} = Haircut for currency mismatch, subject to the adjustment set out in paragraph E3 of Annex IIIb-E

(See Annex IIIb-E for the value of *standard supervisory haircut* for currency mismatch).

- (B) For collateral, the value of credit protection is its market value subject to a minimum revaluation frequency of 6 months for non-past due exposures, and 3 months for past due exposures.

If the collateral takes the form of real property (which is regarded as *recognized collateral* only in the case of past due exposures), the market value of the real property should be reduced by 10% in the case of residential property and 20% in the case of other real properties. The risk-weight attributed to real properties is 100%.

- (iii) Thirdly, where

- (A) the exposure covered by recognized CRM is not past due exposure, report the covered portion in the class to which the *credit protection* belongs in the column of “Principal Amount after CRM” and along the row for the risk-weight applicable to the credit protection determined by following the instructions in Section B, as if the credit protection were an on-balance sheet exposure of the reporting institution. That is, the risk-weight applicable to the credit protection

- where the credit protection is collateral, is the one applicable to the collateral subject to a 20% floor except in the situations set out in Annex IIIb-C;
 - where the credit protection is a guarantee or a credit derivative contract, is the one applicable to the *credit protection provider* based on whether it has an issuer rating or not, without having regard to whether any of its other debt obligations has an issue-specific rating;
 - where the collateral are cash deposits, certificates of deposit, or other comparable instruments which are held at a third-party bank in a non-custodial arrangement and unconditionally and irrevocably pledged or assigned to the reporting institution, is the risk-weight applicable to the third-party bank determined by the same principle set out in the second bullet point.
- (B) the exposure covered by recognized CRM is past due exposure, report the covered portion in Class XII - Past Due Exposure in the column of “Principal Amount after CRM”, and along the row of the risk-weight applicable to the credit protection.

For both (A) and (B), the RWA of the covered portion is then calculated by multiplying the amount of the covered portion by the risk-weight applicable to the credit protection.

- (C) However, where the credit protection for a basket of exposures consists of a credit derivative contract with the following features, the extent of credit protection should be determined as follows:
- where the contract is a recognized first-to-default credit derivative contract, the reporting institution may recognize that credit protection for the exposure in the basket which would carry the lowest RWA in the absence of the credit protection, provided that the principal amount of the exposure is not more than the *notional amount* of the credit derivative contract. The institution may substitute the risk-weight of the credit protection for the risk-weight of that exposure;
 - where the contract is a recognized second-to-default credit derivative contract, the reporting institution may substitute the risk-weight of the credit protection for the risk-weight of the exposure in the basket which would carry the second lowest RWA in the absence of the credit protection only if
 - a. the institution has, as a protection buyer, entered into a recognized first-to-default credit derivative contract with the same basket of reference obligations or the same basket of obligations used for the purposes of determining whether

a *credit event* has occurred as that of the second-to-default credit derivative contract; or

b. an obligation in the basket referred to in paragraph a. above has defaulted;

- where the contract is any other subsequent-to-default credit derivative contract, the same principle as that applied to a second-to-default credit derivative contract, with all necessary modifications, applies;
- where the contract provides credit protection proportionately to reference obligations in the basket as specified in the contract, the reporting institution may substitute the risk-weight of the credit protection for the risk-weights of the exposures to the extent of the amounts protected;

(iv) Lastly, report the amount of the uncovered portion in the class to which the exposure belongs, in the column of “Principal Amount after CRM”, still along the same row for the risk-weight of the exposure. The reported RWA of the uncovered portion is then calculated by multiplying the amount of the uncovered portion by the risk-weight of the exposure.

(b) **CRM treatment by reduction of Principal Amount of an exposure**, which applies to the *comprehensive approach* for collateral, on-balance sheet netting and bilateral netting of repo-style transactions:

(i) **Comprehensive Approach for collateral**

(A) Firstly, report the whole principal amount (after deduction of specific provisions) of the exposure in the column of “Principal Amount” in the class to which the exposure belongs, along the row of the risk-weight applicable to that exposure;

(B) Secondly, subtract the value of collateral from the reported “Principal Amount” of the exposure by the use of the formula set out below. Report the net amount (i.e. E*) in the column of “Principal Amount after CRM” in the same class to which the exposure belongs, still along the same row for the risk-weight of that exposure.

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

where:

E* = Principal amount after CRM

E = Principal amount of on-balance sheet exposure, net of specific provisions

H_e = Haircut appropriate to the exposure

- C = Current market value of the collateral before adjustment required by the comprehensive approach
- H_c = Haircut appropriate to the collateral
- H_{fx} = Haircut appropriate to currency mismatch between the exposure and the collateral

Annex IIIb-E sets out the values of standard supervisory haircuts and the required adjustments for transactions with assumptions on holding-period and/or frequency of re-margining/revaluation which is/are different from those underlying the supervisory haircuts.

- (C) Thirdly, report the RWA calculated by multiplying E* by the risk-weight of the exposure.

(c) On-balance sheet netting

- (i) Firstly, identify the class to which the obligor in respect of the exposures belongs and the risk-weight applicable to the obligor. Then, report the aggregate principal amount (after deduction of specific provisions) of the exposures in the column of “Principal Amount” in that class, along the row of the risk-weight applicable to the obligor;
- (ii) Secondly, report the aggregate principal amount of the exposures net of aggregate book value of liabilities in the column of “Principal Amount after CRM” in the same class to which the obligor belongs, still along the row of the same risk-weight of the obligor. Where the exposures are denominated in currencies different from those of the liabilities, the aggregate book value of the liabilities should be reduced by a haircut for the currency mismatch.

$$\text{Principal amount after CRM} = \max \{0, \text{exposures} - \text{liabilities} \times (1 - H_{fx})\}$$

where:

H_{fx} = Haircut appropriate to currency mismatch between the exposures and the liabilities, subject to the adjustment set out in paragraph E3 of **Annex IIIb-E**

- (iii) Thirdly, report the RWA calculated by multiplying the “Principal Amount after CRM” by the risk-weight of the obligor.

(d) Netting of repo-style transactions

The reporting institution must use the comprehensive approach for collateral if it intends to recognize the CRM effect of a valid bilateral netting agreement under which certain repo-style transactions are entered into with the same counterparty. The institution should compare the aggregate value of money and securities sold/transferred/loaned/paid with the aggregate value of money and securities received, taking into account haircuts based

on the following formula. Where the value calculated in accordance with the formula is greater than zero, the institution has a net exposure to the counterparty for which regulatory capital should be provided.

$$E^* = \text{Max} \{0, [(\sum (E) - \sum (C)) + \sum (E_s \times H_s) + \sum (E_{fx} \times H_{fx})]\}$$

where:

E^* = Counterparty exposure after netting

E = Current market value of money and securities sold/transferred/loaned/paid

C = Current market value of money and securities received

E_s = Absolute value of the net position in the same securities

H_s = Haircut appropriate to the net position in the same securities (i.e. E_s)

E_{fx} = Absolute value of the net position in a currency different from the settlement currency

H_{fx} = Haircut appropriate for currency mismatch

Haircuts are subject to the adjustment set out in paragraph E3 of **Annex IIIb-E**.

The reporting arrangement for a net counterparty exposure in repo-style transactions covered by a valid bilateral netting agreement is as follows:

- (i) Firstly, identify the class to which the counterparty belongs and the risk-weight applicable to the counterparty;
- (ii) Secondly, report the gross amount (i.e. aggregate amount of all outward legs) of all the repo-style transactions subject to the netting agreement in the column of “Principal Amount” in the class to which the counterparty belongs and report the exposure after netting in the column of “Principal Amount after CRM” of the same class, along the row of the risk-weight of the counterparty;
- (iii) Thirdly, multiply the exposure after netting by the risk-weight applicable to the counterparty to calculate the RWA.

In general, repo-style transactions in banking and trading books should be netted separately. Netting across positions in the banking book and the trading book with the same counterparty will only be allowed if:

- all transactions are marked to market daily; and
- the collateral used in the transactions is recognized collateral for transactions booked in the banking book.

Where the reporting institution has received the approval of the MA for using *internal models* to calculate market risk capital charge, subject to the approval of the MA, it may use a **VaR** model as an alternative to the use of

standard supervisory haircuts to reflect the price volatility of the exposures and collateral under repo-style transactions covered by valid bilateral netting agreements on a counterparty-by-counterparty basis. The criteria for using VaR models and the calculation of net credit exposure to a counterparty using a VaR model are set out in **Annex IIIb-F**.

27. Credit protection by means of Credit-linked Notes

Where the reporting institution issues a credit-linked note to cover the credit risk of an exposure, the maximum amount of credit protection is the amount of the funds received from issuing that note. The protected amount should be treated as an exposure collateralized by cash deposits.

C.2 Off-balance Sheet Exposures

28. For each off-balance sheet exposure, the reporting institution should identify the relevant item in Division B to which the exposure belongs, and report the exposure in the row for that item. Unlike on-balance sheet exposures, it is not necessary to report details of the principal amount after CRM and the applicable risk-weight in the Form. Instead, only the principal amount and the RWA should be reported.

For Items other than OTC Derivative and Credit Derivative Contracts

29. Where an exposure is not covered by recognized CRM, the process for calculating the RWA is as follows:
- (a) Firstly, convert the principal amount (after deduction of specific provisions) into a credit equivalent amount by multiplying it by the applicable CCF;
 - (b) Secondly, multiply the credit equivalent amount by the applicable risk-weight to calculate the RWA.
30. Where an exposure is covered fully or partially by recognized CRM, the calculation is similar to that of on-balance sheet exposures explained in Section C.1, except that in calculating the RWA, the credit equivalent amount is used instead of the principal amount. The calculation will depend on the type of recognized CRM used and, in the case of collateralized transactions, the approach used by the reporting institution is recognizing the CRM effect of the collateral (see paragraph 26):
- (a) **CRM treatment by substitution of risk-weights** which applies to collateral under the simple approach, guarantees and credit derivatives:
 - (i) Firstly, report the whole principal amount (after deduction of specific provisions) of the exposure in the column of “Principal Amount” along the item to which the off-balance sheet exposure belongs;

- (ii) Secondly, divide the amount above into two portions: the credit protection covered portion and the credit protection uncovered portion (the value of the credit protection for different types of recognized CRM is determined in the same way as set out in Section C.1);
- (iii) Thirdly, multiply the amount of each of the two portions by the CCF applicable to the exposure to come up with two credit equivalent amounts and report the sum of the two credit equivalent amounts in the column of “Credit Equivalent Amount”; and
- (iv) Fourthly, obtain two RWAs by
 - (A) multiplying the credit equivalent amount of the uncovered portion by the risk-weight applicable to the off-balance sheet exposure, and
 - (B) multiplying the credit equivalent amount of the covered portion by the risk-weight applicable to the credit protection.

The sum of the two RWAs is reported in the column of “Risk-weighted Amount”.

(b) **CRM treatment by reduction of Principal Amount of exposures** which applies to the comprehensive approach for collateral:

- (i) Firstly, report the whole principal amount (after deduction of specific provisions) of the exposure in the column of “Principal Amount” along the item to which the exposure belongs;
- (ii) Secondly, calculate the credit equivalent amount after CRM based on the following formula and report the amount calculated in the column of “Credit Equivalent Amount”:

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

where:

- E^* = Credit equivalent amount after CRM
- E = Principal amount of off-balance sheet exposure, net of specific provisions
- H_e = Haircut appropriate for the exposure
- C = Current market value of the collateral
- H_c = Haircut appropriate to the collateral
- H_{fx} = Haircut appropriate for currency mismatch between the exposure and the collateral
- CCF = Credit conversion factor applicable to the exposure

Haircuts are subject to the adjustment set out in paragraph E3 of **Annex IIIb-E**.

- (iii) Thirdly, multiply the credit equivalent amount after CRM by the risk-weight of the counterparty and report the RWA calculated in the column of “Risk-weighted Amount”.

For OTC Derivative and Credit Derivative Contracts

31. The reporting institution should use the current exposure method to calculate credit exposures to counterparties under OTC derivative and credit derivative contracts. Individual OTC derivative transactions should be reported under items 10 to 14 and individual credit derivative transactions under item 15. Where OTC derivative transactions and credit derivative contracts are covered by a valid bilateral netting agreement, the reporting institution may report them on a net basis under item 16.

(a) Current exposure method

- (i) Firstly, report the principal amount of the transaction/contract in the column of “Principal Amount”.
- (ii) Secondly, calculate the credit equivalent amount by adding the *current exposure* and the potential exposure based on the current exposure method set out below. Specific provisions, if any, should then be deducted from the credit equivalent amount and the resultant amount should be reported in the column of “Credit Equivalent Amount”.

Under the current exposure method, the amount reported in the column of “Credit Equivalent Amount” should be the sum of:

(A) current exposure, which is –

- a contract’s replacement cost obtained by marking-to-market (if the value so obtained is negative, the replacement cost should be taken as zero); or
- where contracts are covered by a valid bilateral netting agreement, the sum of the positive and negative mark-to-market replacement costs of the individual contracts, if positive; and

(B) potential exposure (the add-on), which is –

- derived by multiplying the principal amount of a contract by the credit conversion factor specified in Section B.2; or
- where contracts are covered by a valid bilateral netting agreement, derived by the formula set out in paragraph (b) below.

- (iii) Thirdly, multiply the reported “Credit Equivalent Amount” by the risk-weight applicable to the counterparty to calculate the RWA.

- (b) Add-on of OTC derivative transactions and credit derivatives contracts subject to *recognized netting*

In the case of OTC derivative transactions and credit derivatives contracts, where they are covered by a valid bilateral netting agreement, the net add-on (A_{Net}) of these contracts and transactions is calculated according to the following formula:

$$A_{Net} = 0.4 \times A_{Gross} + 0.6 \times NGR \times A_{Gross}$$

where:

A_{Gross} = The sum of the individual add-on amounts derived by multiplying the principal amounts of all of the individual contracts/transactions by the applicable CCFs

NGR = The ratio of net replacement cost for all the contracts/transactions to gross replacement cost for all the contracts/transactions

The NGR in the above formula can be calculated on a per counterparty basis or on an aggregate basis. However, the basis chosen by the reporting institution should be used consistently. An illustration of the calculation of the NGR based on the two calculation bases is given in **Annex IIIb-G**.

It is not necessary to calculate the potential exposure of single currency floating/floating interest rate swaps. The current exposure, i.e. replacement cost, of these contracts should be taken as their credit equivalent amounts.

32. Where the (net) exposure to the counterparty is covered fully or partially by recognized CRM, the calculation is similar to that of on-balance sheet exposures explained in Section C.1 above, except that in calculating the RWA, the credit equivalent amount is used instead of the principal amount. The calculation will depend on the type of recognized CRM used:

- (a) **CRM treatment by substitution of risk-weights** which applies to collateral under the simple approach, guarantees and credit derivatives:

- (i) Firstly, report the principal amount of the transaction/contract in the column of “Principal Amount”;
- (ii) Secondly, convert the principal amount into a credit equivalent amount by the current exposure method. Specific provisions should be deducted from the credit equivalent amount and the resultant amount should be reported in the column of “Credit Equivalent Amount”;
- (iii) Thirdly, divide the reported “Credit Equivalent Amount” into two portions: the credit protection covered portion and the credit protection uncovered portion;

(iv) Fourthly, multiply the uncovered portion of the reported “Credit Equivalent Amount” by the risk-weight applicable to the counterparty and the covered portion of the reported “Credit Equivalent Amount” by the risk-weight applicable to the credit protection to calculate two RWAs. The sum of the two RWAs is reported in the column of “Risk-weighted Amount”.

(b) **CRM treatment by reduction of Principal Amount of exposures** which applies to collateral under the comprehensive approach:

(i) Firstly, report the principal amount of the transaction/contract in the column of “Principal Amount”;

(ii) Secondly, convert the principal amount into a credit equivalent amount by the current exposure method. Specific provisions should be deducted from the credit equivalent amount and the resultant amount should be reported in the column of “Credit Equivalent Amount”;

(iii) Thirdly, calculate the credit equivalent amount after CRM based on the following formula:

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

where:

E^* = Credit equivalent amount after CRM
 E = Credit equivalent amount of off-balance sheet exposure (i.e. sum of current exposure and potential exposure, net of specific provisions)
 C = Current market value of the collateral
 H_c = Haircut appropriate to the collateral
 H_{fx} = Haircut appropriate for currency mismatch between the settlement currency and the currency in which the collateral is denominated

Haircuts are subject to the adjustment set out in paragraph E3 of **Annex IIIb-E**.

(iv) Fourthly, multiply the credit equivalent amount after CRM by the risk-weight of the counterparty and report the RWA so calculated in the column of “Risk-weighted Amount”.

C.3 Multiple Credit Risk Mitigation

33. An exposure covered by two or more forms of recognized CRM (e.g. with both collateral and guarantee partially covering the exposure) should be divided into different portions which respectively represent the proportions of the exposure covered by each of the forms of the recognized CRM used. The calculation of

the RWA of each portion will be done separately. Where there is an overlap of coverage between different forms of recognized CRM, the reporting institution may select, in respect of the overlapped portion, the form of recognized CRM which will result in the lowest RWA of that overlapped portion of the exposure.

34. Where an exposure is covered by credit protection provided by a single credit protection provider but the credit protection has different maturities, the reporting institution should divide the exposure into different portions according to the maturities of the credit protection. The RWA of each portion should then be calculated separately.
35. Where an exposure is in the form of general banking facility consisting of several types of credit lines, the reporting institution may determine how credit protection obtained for the facility should be allocated amongst individual exposures under each of the credit lines.

C.4 Maturity Mismatches

36. For credit protection in the form of collateral, guarantees, credit derivatives, or on-balance sheet netting, where a maturity mismatch (as defined in section 103 of the Rules) exists, the value of the credit protection should be adjusted based on the following formula:

$$P_a = P \times (t - 0.25) / (T - 0.25)$$

where:

- P_a = Value of credit protection adjusted for maturity mismatch
- P = Value of credit protection adjusted for haircuts for price volatility of collateral and currency mismatch
- t = Min (T, residual maturity of credit protection) expressed in years
- T = Min (5, residual maturity of the exposure) expressed in years

This paragraph does not apply to collateral without a finite maturity (e.g. equities). Maturity of the credit protection should be determined in accordance with sections 103(3) and (4) of the Rules.

Nevertheless, the reporting institution should not take into account the credit protection in its calculation of RWA if the credit protection falls under one of the circumstances set out in section 103(2) of the Rules.

37. **Annex IIIb-H** contains a number of examples to illustrate the capital treatment and reporting arrangement of collateralized exposures based on the simple approach and the comprehensive approach of the credit risk mitigation framework.

Tables for Mapping Notations used by individual ECAs into the Credit Quality Grades

Sovereign Exposures

Credit Quality Grades (Sovereigns)	Risk-weight	Standard & Poor's Ratings Services	Moody's Investors Service	Fitch Ratings	Rating and Investment Information, Inc.
1	0%	AAA	Aaa	AAA	AAA
		AA+	Aa1	AA+	AA+
		AA	Aa2	AA	AA
		AA-	Aa3	AA-	AA-
2	20%	A+	A1	A+	A+
		A	A2	A	A
		A-	A3	A-	A-
3	50%	BBB+	Baa1	BBB+	BBB+
		BBB	Baa2	BBB	BBB
		BBB-	Baa3	BBB-	BBB-
4	100%	BB+	Ba1	BB+	BB+
		BB	Ba2	BB	BB
		BB-	Ba3	BB-	BB-
5	100%	B+	B1	B+	B+
		B	B2	B	B
		B-	B3	B-	B-
6	150%	CCC+	Caa1	CCC+	CCC+
		CCC	Caa2	CCC	CCC
		CCC-	Caa3	CCC-	CCC-
		CC	Ca	CC	CC
		C	C	C	C
		D		D	

Bank and Securities Firm Exposures

Credit Quality Grades (Banks and Securities Firms)	Risk-weight for General Exposures	Risk-weight for 3-months' Exposures⁷ (for Banks only)	Standard & Poor's Ratings Services	Moody's Investors Service	Fitch Ratings	Rating and Investment Information, Inc.
1	20%	20%	AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	AAA AA+ AA AA-	AAA AA+ AA AA-
2	50%	20%	A+ A A-	A1 A2 A3	A+ A A-	A+ A A-
3	50%	20%	BBB+ BBB BBB-	Baa1 Baa2 Baa3	BBB+ BBB BBB-	BBB+ BBB BBB-
4	100%	50%	BB+ BB BB- B+ B B-	Ba1 Ba2 Ba3 B1 B2 B3	BB+ BB BB- B+ B B-	BB+ BB BB- B+ B B-
5	150%	150%	CCC+ CCC CCC- CC C D	Caa1 Caa2 Caa3 Ca C D	CCC+ CCC CCC- CC C D	CCC+ CCC CCC- CC C D

⁷ 3-months' exposures represent exposures with original maturity of three months or less (other than those having a short-term ECAI issue specific rating). Risk-weights for 3-months' exposures are applicable only to exposures to banks and not to exposures to securities firms.

Corporate Exposures

Credit Quality Grades (Corporates)	Risk-weight	Standard & Poor's Ratings Services	Moody's Investors Service	Fitch Ratings	Rating and Investment Information, Inc.
1	20%	AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	AAA AA+ AA AA-	AAA AA+ AA AA-
2	50%	A+ A A-	A1 A2 A3	A+ A A-	A+ A A-
3	100%	BBB+ BBB BBB-	Baa1 Baa2 Baa3	BBB+ BBB BBB-	BBB+ BBB BBB-
4	100%	BB+ BB BB-	Ba1 Ba2 Ba3	BB+ BB BB-	BB+ BB BB-
5	150%	B+ B B- CCC+ CCC CCC- CC C D	B1 B2 B3 Caa1 Caa2 Caa3 Ca C D	B+ B B- CCC+ CCC CCC- CC C D	B+ B B- CCC+ CCC CCC- CC C D

Collective Investment Scheme Exposures

Credit Quality Grades (CIS)	Risk-weight	Standard & Poor's Ratings Services Fund credit quality ratings	Standard & Poor's Ratings Services Principal stability fund ratings	Moody's Investors Service	Fitch Ratings	Rating and Investment Information, Inc.
1	20%	AAAf AA+f AAf AA-f	AAAm AA+m AAm AA-m	Aaa Aa1 Aa2 Aa3	AAA AA+ AA AA-	AAAfc AA+fc AAfc AA-fc
2	50%	A+f Af A-f	A+m Am A-m	A1 A2 A3	A+ A A-	A+fc Afc A-fc
3	100%	BBB+f BBBf BBB-f	BBB+m BBBm BBB-m	Baa1 Baa2 Baa3	BBB+ BBB BBB-	BBB+fc BBBfc BBB-fc
4	100%	BB+f BBf BB-f	BB+m BBm BB-m	Ba1 Ba2 Ba3	BB+ BB BB-	BB+fc BBfc BB-fc
5	150%	B+f Bf B-f CCC+f CCCf CCC-f	Dm	B1 B2 B3 Caa1 Caa2 Caa3 Ca C	B+ B B- CCC+ CCC CCC- CC C D	B+fc Bfc B-fc CCC+fc CCCfc CCC-fc CCfc Cfc

Short-term Exposures (Banks, Securities Firms and Corporates)

Short-term Credit Quality Grade (Banks, Securities Firms and Corporates)	Risk-weight	Standard & Poor's Ratings Services	Moody's Investors Service	Fitch Ratings	Rating and Investment Information, Inc
1	20%	A-1+ A-1	P-1	F1+ F1	a-1+ a-1
2	50%	A-2	P-2	F2	a-2
3	100%	A-3	P-3	F3	a-3
4	150%	B B-1 B-2 B-3 C D	NP	B C D	b c

Application of External Credit Assessments

(A) Nomination of ECAIs

- B1. The reporting institution may nominate, for each of the ECAI ratings based portfolio, one or more ECAI(s) the credit assessment ratings issued by which will be used for the purposes of deriving risk-weights for the exposures in the ECAI ratings based portfolios.
- B2. The ECAI(s) nominated for an ECAI ratings based portfolio should (taken collectively if more than one ECAI is nominated) issue a range of credit assessment ratings which provides a reasonable coverage to the counterparties and the geographical regions in relation to the exposures falling within that portfolio.
- B3. The reporting institution should use the ratings of the nominated ECAI(s) within each of the portfolio consistently.

(B) Use of External Credit Assessments

I. Exposures or issuers regarded as not having an ECAI rating

- B4. The reporting institution should regard any issuer or any exposure as not having a rating if it does not have an ECAI rating assigned to it by any of the institution's nominated ECAI(s) for the relevant ECAI ratings based portfolio.

II. Multiple assessments

Exposure with ECAI issue specific rating(s)

- B5. If an exposure has only one ECAI issue specific rating, that rating should be used to determine the risk-weight of that exposure.
- B6. In cases where there are two or more issue specific ratings assigned by different ECAIs for an exposure and these ratings map to different risk-weights, any one of those ratings should be used except the one or more of those ratings corresponding to the lowest of those different risk-weights.

Exposure without ECAI issue specific rating(s) (“concerned exposure”)

B7. The reporting institution may determine the risk-weight of the concerned exposure based on either the ECAI issuer rating(s) of the obligor of the exposure or the ECAI issue specific rating(s) of another debt obligation (“reference exposure”) undertaken by the same obligor. The reference exposure need not be one held by the institution.

Based on ECAI issuer rating:

- If the obligor of the concerned exposure has only one ECAI issuer rating, the institution should use that rating to determine the risk-weight to be applied to the exposure;
- The institution should follow the principle set out in paragraph B6 to determine the appropriate risk-weight to be applied to the exposure if there are two or more ECAI issuer ratings assigned by different ECAIs to the obligor which map to two or more different risk-weights.

Based on ECAI issue specific rating:

- If the reference exposure has only one ECAI issue specific rating, the institution should use that rating to determine the risk-weight to be applied to the concerned exposure;
- The institution should follow the principles set out in paragraph B6 to determine the appropriate risk-weight to be applied to the concerned exposure if there are two or more ECAI issue specific ratings assigned by different ECAIs to the reference exposure which map to two or more different risk-weights.

III. Local currency and foreign currency assessments

B8. In circumstances where exposures without ECAI issue specific ratings are risk-weighted based on the rating of an equivalent exposure to that borrower, the general rule is that foreign currency ratings would be used for exposures in foreign currency. Local currency ratings, if separate, would only be used to risk-weight exposures denominated in the local currency.

B9. However, when an exposure arises through a reporting institution’s participation in a loan that has been extended, or has been guaranteed against convertibility and transfer risk, by MDBs, its convertibility and transfer risk is considered to be effectively mitigated. In such cases, the borrower’s local currency rating may be used for capital adequacy purposes instead of its foreign currency rating. The portion of the loan not benefiting from such a guarantee will however be risk-weighted based on the foreign currency rating.

IV. Others

- B10. In order to avoid any double counting of credit enhancement factors, no CRM should be recognized if the *credit enhancement* is already reflected in the issue specific rating.

Exceptions to the Risk-weight Floor of 20% under the Simple Approach for Collateral

C1. In general, a reporting institution should not allocate a risk-weight of less than 20% to recognized collateral under the simple approach except those set out in paragraphs C2 to C7 below.

Repo-style Transactions

C2. A risk-weight of 0% can be allocated to recognized collateral in repo-style transactions which are treated as collateralized lending and satisfy all the requirements set out in paragraphs D2 to D10 of Annex IIIb-D.

C3. A risk-weight of 10% can be allocated to recognized collateral in repo-style transactions which are treated as collateralized lending and satisfy all the requirements set out in paragraphs D3 to D10.

OTC Derivative Transactions and Credit Derivative Contracts

C4. A risk-weight of 0% can be allocated to recognized collateral in an OTC derivative transaction or a credit derivative contract provided that:

- the transaction or contract is collateralized by cash (as defined in section 82(5) of the Rules) provided to the reporting institution;
- the transaction or contract is marked-to-market daily; and
- there is no currency mismatch between the settlement currency of the transaction or contract and the collateral.

C5. A risk-weight of 10% can be allocated to recognized collateral in an OTC derivative transaction or a credit derivative contract which fulfils the 2nd and 3rd bullet points of paragraph C4 and the collateral provided is debt securities which would be allocated a risk-weight of 0% under the STC approach issued by a sovereign or a *sovereign foreign public sector entity*.

Other Transactions

C6. A 0% risk-weight can be allocated to recognized collateral in a transaction if there is no currency mismatch between the transaction and the collateral, and either:

- the collateral is cash (as defined in section 82(5) of the Rules); or
- the collateral is in the form of debt securities which would be allocated a risk-weight of 0% under the STC approach issued by a sovereign or a

sovereign foreign public sector entity, and the current market value of which has been discounted by 20%.

C7. A 0% risk-weight can be allocated to recognized collateral in the form of gold bullion

- held by the reporting institution; or
- held for the institution, on an allocated basis, by another person,

to the extent that the gold bullion is backed by gold bullion liabilities.

Criteria for Preferential Treatment of Repo-style Transactions

- D1. The HKMA will allow a preferential risk-weighting treatment for repo-style transactions which satisfy all the requirements in paragraphs D2 to D10 below. Under the comprehensive approach for collateral, these qualified transactions are not required to be subject to any haircuts. This however is not applicable to institutions using VaR models to reflect the price volatility of both exposures and collateral (see Annex IIIb-F).
- D2. The counterparty should be one of the following entities:
- Sovereigns;
 - PSEs;
 - MDBs;
 - Banks or securities firms;
 - Other financial institutions (including *insurance firms*) which has an *attributed risk-weight* of not more than 20%; and
 - Clearing organizations as defined in section 82(2)(a)(vi) of the Rules.
- D3. Both the exposure and the collateral are cash (as defined in section 82(5) of the Rules) or securities which would be allocated a risk-weight of 0% under the STC approach issued by sovereigns or sovereign foreign PSEs.
- D4. There is no currency mismatch between the exposure and the collateral.
- D5. Either the transaction is an overnight transaction or both the exposure and the collateral are subject to daily mark-to-market and daily remargining.
- D6. The reporting institution reasonably expects that if the counterparty fails to remargin, the time between the failure to remargin and the realization of the collateral is not more than four business days.
- D7. The transaction is settled across a settlement system proven for that type of transaction.
- D8. Standard market documentation for repo-style transactions in the securities concerned is used for the agreement.
- D9. The documentation of the transaction should specify that the transaction is immediately terminable if the counterparty fails to satisfy an obligation to deliver cash or securities or to deliver margin or otherwise defaults.
- D10. Upon any event of default, regardless of whether the counterparty is insolvent or bankrupt, the reporting institution should have an unfettered and legally enforceable right to immediately seize and realize the collateral for its benefit.

Standard Supervisory Haircuts for the Comprehensive Approach for Collateral

E1. Reporting institutions using the comprehensive approach for collateralized transactions should use standard supervisory haircuts provided in the table below to take account of the price volatility of both exposures and collateral. These haircuts assume daily mark-to-market, daily remargining and a 10-business-day holding period.

Part 1 – Standard Supervisory Haircuts for Debt Securities				
Types of exposure or recognized collateral	Credit Quality Grade / Short-term Credit Quality Grade	Residual Maturity	Standard Supervisory Haircuts	
			Sovereign issuers ⁸	Other issuers ⁹
Debt securities with ECAI issue specific ratings (In the case of collateral, means those falling within any of s.79(e) to (l) of the Rules)	Grade 1	≤ 1 year	0.5%	1%
		> 1 year but ≤ 5 years	2%	4%
		> 5 years	4%	8%
	Grades 2 and 3	≤ 1 year	1%	2%
		> 1 year but ≤ 5 years	3%	6%
		> 5 years	6%	12%
Debt securities with long term ECAI issue specific ratings (In the case of collateral, means those falling within s.79(e), (f) or (h) of the Rules)	Grade 4	All	15%	Not applicable
Debt securities without ECAI issue specific ratings issued by banks or securities firms, which satisfy the criteria set out in s 79(m) of the Rules. (In the case of collateral, means those falling within s 79(m) of the Rules)	Not applicable	≤ 1 year	Not applicable	2%
		> 1 year but ≤ 5 years	Not applicable	6%
		> 5 years	Not applicable	12%

⁸ Sovereign issuers include multilateral development banks and sovereign foreign public sector entities. The haircuts for debt securities with credit quality grade 1 issued by sovereigns also apply to all debt securities issued by multilateral development banks.

⁹ Other issuers include public sector entities which are not sovereign foreign public sector entities.

Part 2 – Standard Supervisory Haircuts for Assets other than Debt Securities	
Types of exposure or recognized collateral	Standard Supervisory Haircuts
Cash where both the exposure and collateral are in the same currency (In the case of collateral, means those falling within s.79(a), (b) or (c) of the Rules where the exposure is in the same currency as that of the collateral)	0%
Equities in the <i>main index</i> (including convertible bonds) and gold (In the case of collateral, means those falling within s 79(d) or (n) of the Rules)	15%
Other equities (including convertible bonds) listed on a <i>recognized exchange</i> (In the case of collateral, means those falling within s 80(b) of the Rules)	25%
Collective investment schemes (In the case of collateral, means those falling within s 79(o) or s 80(c) of the Rules)	Highest haircut applicable to any <i>financial instruments</i> in which the scheme can invest

Part 3 – Standard Supervisory Haircuts for Exposures and Collateral not falling within Parts 1 and 2 of this Table	
Types of exposure or recognized collateral	Standard Supervisory Haircuts
Exposures and collateral of repo-style transactions which satisfy the criteria set out in <u>Annex IIIb-D</u>	0%
Exposures arising from currency mismatch	8%
Exposures of transactions under which the financial instruments lent by an authorized institution do not fall within Parts 1 and 2 of this Table	25%
Collateral which does not fall within s 80(a), (b) and (c) of the Rules received by an authorized institution under repo-style transactions booked in the trading book.	25%
Exposures not specified in this Table	25%

E2. Reporting institutions should distinguish transactions amongst three types, viz., repo-style transactions, other capital market transactions (i.e. OTC derivative transactions and margin lending) and secured lending. Providing

the transactions are subject to daily revaluation or remargining, the assumed *minimum holding period* of these three types of transactions are as follows:

Type of Transactions	Minimum Holding Period	Condition
Repo-style transactions	5 business days	Daily remargining
Other capital market transactions	10 business days	Daily remargining
Secured lending	20 business days	Daily revaluation

- E3. Where a transaction has a minimum holding period different from 10 business days or is not remargined or revalued daily as assumed in the standard supervisory haircuts, reporting institutions should scale up or down the standard supervisory haircuts (H_e , H_c and H_{fx}) by the following formula when applying them to the calculation of RWA of the transaction:

$$H = H_{10} \times \sqrt{\frac{N_R + (T_M - 1)}{10}}$$

where:

H = Haircut after adjustment for differences in holding period and revaluation frequency

H_{10} = Standard supervisory haircut based on a minimum holding period of 10 business days

T_M = Minimum holding period for a particular type of transaction as set out in paragraph E2.

N_R = Actual number of days between remargining or revaluation of collateral

- E4. For repo-style transactions booked in the trading book which are treated as collateralized loans, recognized collateral is expanded to include all assets received by the institution.

Use of Value-at-risk Models for Repo-style Transactions Covered by a Valid Bilateral Netting Agreement

- F1. Reporting institutions which have obtained approval from the MA for using internal models to measure exposure to market risk, subject to the approval of the MA, may use a VaR model, as an alternative to the use of standard supervisory haircuts, to reflect the price volatility of the exposure and the collateral for repo-style transactions covered by a valid bilateral netting agreement on a counterparty-by-counterparty basis. Correlation effects between security positions should be taken into account.
- F2. The quantitative and qualitative criteria for recognition of a VaR model for repo-style transactions are substantially similar to those for recognition of an internal model for market risk, except the requirement of minimum holding period. For repo-style transactions, the minimum holding period is five business days. The minimum holding period should be adjusted upward where the liquidity of the instruments concerned does not justify a 5-day holding period. The criteria for recognition of internal models are set out in Schedule 3 of the Banking (Capital) Rules.
- F3. As one of the initial and on-going recognition criteria, institutions intending to use or using VaR models should prove the quality of the models to the MA through *back-testing* the models' output using a sample of 20 counterparties with data covering a one-year period. These counterparties should include the 10 largest as determined by the institution according to its own exposure measurement approach and another 10 selected at random. For each day and for the sample of 20 counterparties (collectively referred to in this Annex as counterparty portfolio), the institution should compare the previous day's VaR estimate for the previous day's exposure to the counterparty portfolio to the actual change in the value of the previous day's exposure. This change is the difference between the net value of the previous day's exposure using today's market prices and the net value of that exposure using the previous day's market prices. Where this difference exceeds the previous day's VaR estimate, an *exception* occurs. Depending on the number of exceptions in the observations for the 20 counterparties over the most recent 250 *trading days* (i.e. a total of 5,000 observations), the output of the VaR model should be scaled up by using a multiplier as provided in the following table:

Number of Exceptions	Multiplier
0 – 19	None (= 1)
20 – 39	None (= 1)
40 – 59	None (= 1)
60 – 79	None (= 1)
80 – 99	None (= 1)
100 – 119	1.13
120 – 139	1.17
140 – 159	1.22
160 – 179	1.25
180 – 199	1.28
200 or more	1.33

- F4. Institutions adopting VaR models may calculate the credit equivalent amount of their exposure to a counterparty arising from repo-style transactions subject to bilateral netting by the use of the following formula:

$$E^* = \max \{0, [(\sum (E) - \sum (C)) + (\text{VaR output} \times \text{multiplier})]\}$$

where:

- E*** = Counterparty exposure after netting
E = Current market value of money and securities sold, transferred, loaned or paid by the institution
C = Current market value of money and securities received by the institution

VaR output = The VaR number of previous business day generated by the VaR model
Multiplier = The multiplier derived according to the number of exceptions identified in back-testing

Example of calculating the Net to Gross Ratio (NGR)

G1. The following table summarises the calculation of the NGR under the per counterparty and the aggregate basis:

Transaction	Counterparty A		Counterparty B		Counterparty C	
	Notional amount	Mark to market value	Notional amount	Mark to market value	Notional amount	Mark to market value
Outstanding contract 1	100	10	50	8	30	-3
Outstanding contract 2	100	-5	50	2	30	1
Gross replacement cost (GR)		10		10		1
Net replacement cost (NR)		5		10		0
NGR (per counterparty)	0.5		1		0	
NGR (aggregate)	$\sum NR / \sum GR = 15 / 21 = 0.71$					

G2. The gross replacement costs (GR) include only the sums of positive market values, they are therefore, 10, 10 and 1 respectively for counterparties A, B and C. The corresponding net replacement costs (NR) are the non-negative sums of both positive and negative market values, i.e. 5, 10 and 0 for A, B and C respectively. Accordingly, the NGR calculated in the per counterparty basis should be $5/10 = 0.5$, $10/10 = 1$ and $0/1 = 0$ for A, B and C respectively. Based on the per counterparty NGR, the net add-on can be calculated by the given formula in the per counterparty basis. The aggregate net add-on would be the sum of per counterparty net add-ons.

G3. If the NGR is calculated on an aggregate basis, it will be the ratio of total net replacement costs to total gross replacement costs, i.e. $15/21 = 0.71$. The aggregate net add-on is then calculated by applying this ratio to the given formula for the individual counterparty subject to a valid bilateral netting agreement, i.e. A, B and C.

Illustrations on Reporting of Credit Risk Mitigation Techniques

1. Collateralized loan

The reporting institution provides a 5-year term loan of HK\$1,000 M to an unrated corporate. The loan is secured by debt securities issued by a bank and denominated in EURO. The debt securities are rated AA by the Standard & Poor's and have a remaining maturity of 7 years. They are subject to daily revaluation and presently have a market value in HKD equivalent amount of HK\$1,050 M.

Simple Approach

Working:

- A loan to an unrated corporate is subject to a risk-weight of 100%.
- An external credit assessment of “AA” by the Standard & Poor's is equivalent to a credit quality grade “1” in the supervisory risk-weighting scale for banks, which is mapped to a risk-weight of 20%.
- As the market value of the collateral debt securities is HK\$1,050 M, the loan is fully secured.
- RWA of the loan: HK\$1,000 M x 20% = HK\$200 M.

Reporting illustration:

Division A: Risk-weighted Amount (On-balance Sheet)

Item	Nature of item	Principal Amount HK\$'000	Principal Amount After CRM HK\$'000	x Risk Weight %	= Risk-weighted Amount HK\$'000
Class IV	Bank Exposures				
7a.	Exposures with original maturity of more than three months:				
7a(i)	Risk-weight 20%		1,000,000	20	200,000
7a(ii)	Risk-weight 50%			50	
7a(iii)	Risk-weight 100%			100	
7a(iv)	Risk-weight 150%			150	
	SUBTOTAL		1,000,000		200,000
Class VI	Corporate Exposures				
9a.	Risk-weight 20%			20	
9b.	Risk-weight 50%			50	
9c.	Risk-weight 100%	1,000,000	0	100	0
9d.	Risk-weight 150%			150	
	SUBTOTAL	1,000,000	0		0

Comprehensive Approach

Working:

- The standard supervisory haircut for debt securities with a credit quality grade “1” issued by banks is 8%.
- The standard supervisory haircut for currency mismatch between the underlying exposure and collateral is also 8%.
- As the standard supervisory haircuts only assume a 10-day holding period, the 8% haircuts for both the collateral as well as the currency mismatch have to be scaled up to haircuts for 20-day holding period (which is the minimum holding period assumed for secured lending transactions) using the following formula:

$$H = H_{10} \times \sqrt{\frac{N_R + (T_M - 1)}{10}}$$

where:

H = Haircut after adjustment for differences in holding period and revaluation frequency

H₁₀ = Standard supervisory haircut which assumes a minimum 10-day holding period

T_M = Minimum holding period for the type of transaction (which is different from a holding period of 10 days)

N_R = Actual number of days between revaluation

- The adjusted haircuts for the collateral and the currency mismatch in this example are therefore:

$$\begin{aligned} H &= 8\% \times \sqrt{\frac{1 + (20 - 1)}{10}} \\ &= 11\% \text{ (rounded up to a percentage)} \end{aligned}$$

- The value of exposure after CRM is calculated as:

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

where:

E* = Principal Amount after CRM

E = Principal Amount of the exposure

H_e = Haircut appropriate to the exposure

C = Value of the collateral

H_c = Haircut appropriate to the collateral

H_{fx} = Haircut appropriate to currency mismatch between the exposure and the collateral

- As the lending involves only cash, no haircut is required for the loan exposure (i.e. H_e = 0).

- $E^* = \max \{ \text{HK\$0}, [\text{HK\$1,000 M} \times (1 + 0\%) - \text{HK\$1,050 M} \times (1 - 11\% - 11\%)] \}$
 $= \max (\text{HK\$0}, \text{HK\$181 M})$
 $= \text{HK\$181 M}$
- The RWA of the transaction is calculated by multiplying the value of exposure after CRM (HK\$181 M) with the risk-weight of the unrated corporate (100%), which equals HK\$181 M.

Reporting illustration:

Division A: Risk-weighted Amount (On-balance Sheet)

Item	Nature of item	Principal Amount HK\$'000	Principal Amount After CRM HK\$'000	x Risk Weight %	= Risk-weighted Amount HK\$'000
Class IV Bank Exposures					
7a.	Exposures with original maturity of more than three months:				
7a(i)	Risk-weight 20%			20	
7a(ii)	Risk-weight 50%			50	
7a(iii)	Risk-weight 100%			100	
7a(iv)	Risk-weight 150%			150	
SUBTOTAL					
Class VI Corporate Exposures					
9a.	Risk-weight 20%			20	
9b.	Risk-weight 50%			50	
9c.	Risk-weight 100%	1,000,000	181,000	100	181,000
9d.	Risk-weight 150%			150	
SUBTOTAL		1,000,000	181,000		181,000

2. Collateralized loan commitment

Now presuming the corporate borrower in the above example has not yet drawn down the loan facility, the transaction will be recorded as commitment in the book of the reporting institution. Assuming that the commitment cannot be cancelled unconditionally, capital requirement of the transaction under the two approaches will be calculated as follows:

Simple Approach

Working:

- As the amount of commitment of a 5-year term loan is HK\$1,000 M and the market value of the collateral debt securities is HK\$1,050 M, the commitment is considered fully secured.
- The commitment for a 5-year term loan attracts a CCF of 50% as it cannot be cancelled unconditionally. Its credit equivalent amount is therefore calculated at: HK\$1,000 M x 50% = HK\$500 M.
- A 20% risk-weight for the debt securities is applied to calculate the RWA of this secured transaction: HK\$500 M x 20% = HK\$100 M.

Reporting illustration:

Division B: Risk-weighted Amount (Off-balance Sheet)

Item	Nature of item	Principal Amount HK\$'000	Credit Conversion Factor %	Credit Equivalent Amount HK\$'000	Risk-weighted Amount HK\$'000
1.	Direct credit substitutes		100		
2.	Transaction-related contingencies		50		
3.	Trade-related contingencies		20		
4.	Asset sales with recourse		100		
5.	Forward asset purchases		100		
6.	Partly paid shares and securities		100		
7.	Forward forward deposits placed		100		
8.	Note issuance and revolving underwriting facilities		50		
9a.	Commitments that are unconditionally cancellable without prior notice		0		0
9b.	Other commitments (CCF at 20%)		20		
9c.	Other commitments (CCF at 50%)	1,000,000	50	500,000	100,000
SUBTOTAL		1,000,000		500,000	100,000

Comprehensive Approach

Working:

- The standard supervisory haircuts for both the collateral debt securities and the currency mismatch between the underlying exposure and the collateral are scaled up from 8% to 11% (as shown in Example 1 above).
- The credit equivalent amount after CRM is calculated by the following formula (which mirrors the formula for on-balance sheet exposures provided in Example 1):

$$\begin{aligned}
 E^* &= \text{Max} \{0, [E \times (1 + H_e) - C \times (1 - H_c - H_{fx})]\} \times \text{CCF} \\
 &= \text{Max} \{ \text{HK\$}0, [\text{HK\$}1,000 \text{ M} \times (1 + 0\%) - \text{HK\$}1,050 \text{ M} \times (1 - 11\% - 11\%)] \} \times 50\% \\
 &= \text{HK\$}90.5 \text{ M}
 \end{aligned}$$

- As the credit equivalent amount after CRM is HK\$90.5 M and the risk-weight for an unrated corporate is 100%, the RWA of this secured commitment is: HK\$90.5 M x 100% = HK\$90.5 M.

Reporting illustration:

Division B: Risk-weighted Amount (Off-balance Sheet)

Item	Nature of item	Principal Amount HK\$'000	Credit Conversion Factor %	Credit Equivalent Amount HK\$'000	Risk-weighted Amount HK\$'000
1.	Direct credit substitutes		100		
2.	Transaction-related contingencies		50		
3.	Trade-related contingencies		20		
4.	Asset sales with recourse		100		
5.	Forward asset purchases		100		
6.	Partly paid shares and securities		100		
7.	Forward forward deposits placed		100		
8.	Note issuance and revolving underwriting facilities		50		
9a.	Commitments that are unconditionally cancellable without prior notice		0		0
9b.	Other commitments (CCF at 20%)		20		
9c.	Other commitments (CCF at 50%)	1,000,000	50	90,500	90,500
SUBTOTAL		1,000,000		90,500	90,500

3. Collateralized OTC Derivative Transactions

The reporting institution has a HK\$1,000 M interest rate contract with a four-year residual maturity. The counterparty to the contract is an unrated corporate. Pledged as collateral for the contract is a HK\$8 M corporate bond with an “A1” Moody’s rating. This is also a capital market transaction subject to daily remargining and there is neither maturity nor currency mismatch between the interest rate contract and the collateral. The current exposure and potential exposure of the contract are HK\$10 M and HK\$5 M respectively.

Simple Approach

Working:

- Credit equivalent amount of the interest rate contract is the sum of current exposure and potential exposure (i.e. HK\$10 M + HK\$5 M = HK\$15 M)
- The HK\$8 M corporate bond attracts a 50% risk-weight
- RWA of secured portion: HK\$8 M x 50% = HK\$ 4 M
- RWA of unsecured portion: HK\$7 M x 100% = HK\$ 7 M
- Total RWA (secured + unsecured): HK\$4 M + HK\$ 7 M = HK\$ 11 M

Reporting illustration:

Division B: Risk-weighted Amount (Off-balance Sheet)

11. Interest rate contracts

Residual Maturity	Principal Amount HK\$'000	Current Exposure HK\$'000	Potential Exposure HK\$'000	Credit Equivalent Amount HK\$'000	Risk-weighted Amount HK\$'000
11 a. 1 year or less					
11 b. Over 1 year to 5 years	1,000,000	10,000	5,000	15,000	11,000
11 c. Over 5 years					
SUBTOTAL	1,000,000	10,000	5,000	15,000	11,000

Comprehensive Approach

Working:

- As this is a capital market transaction, there is no need to scale up the 6% haircut applicable to the corporate bond as collateral.
- The adjusted exposure of the transaction is calculated by the following formula (which mirrors the formula for on-balance sheet exposures provided in Example 1):

$$\begin{aligned}
 E^* &= \text{Max} \{0, [(\text{current exposure} + \text{potential exposure}) - C \times (1 - H_c - H_{fx})]\} \\
 &= \text{Max} \{ \text{HK\$}0, [\text{HK\$}15 \text{ M} - \text{HK\$}8 \text{ M} \times (1 - 6\% - 0\%)] \} \\
 &= \text{Max} (\text{HK\$}0, \text{HK\$}7.48 \text{ M}) \\
 &= \text{HK\$}7.48 \text{ M}
 \end{aligned}$$

- RWA is calculated at: $\text{HK\$}7.48 \text{ M} \times 100\% = \text{HK\$}7.48 \text{ M}$

Reporting illustration:

Division B: Risk-weighted Amount (Off-balance Sheet)

11. Interest rate contracts

Residual Maturity	Principal Amount HK\$'000	Current Exposure HK\$'000	Potential Exposure HK\$'000	Credit Equivalent Amount HK\$'000	Risk-weighted Amount HK\$'000
11 a. 1 year or less					
11 b. Over 1 year to 5 years	1,000,000	10,000	5,000	15,000	7,480
11 c. Over 5 years					
SUBTOTAL	1,000,000	10,000	5,000	15,000	7,480