

## Completion Instructions

### **Return of Capital Adequacy Ratio Part IIIc – Risk-weighted Amount for Credit Risk Internal Ratings-based Approach Form MA(BS)3(IIIc)**

#### **Introduction**

1. Form MA(BS)3(IIIc) of Part III (**Part IIIc**) should be completed by each authorized institution (AI) incorporated in Hong Kong using the ***internal ratings-based approach (IRB approach)*** to calculate ***credit risk*** under Part 6 of the Banking (Capital) Rules (BCR).
2. Part IIIc covers exposures that are subject to the IRB approach under section 141 of the BCR. A reporting AI should provide the requested information in the relevant reporting forms (Forms) in Part IIIc for its ***non-securitization exposures*** that the MA has granted approval under section 8 of the BCR for using the IRB approach to calculate credit risk. To avoid doubt, if a reporting AI uses a combination of the ***standardized (credit risk) approach (STC approach)*** and the IRB approach, it should report those exposures under the STC approach in Form MA(BS)3(IIIb).<sup>1</sup>
3. Part IIIc comprises 6 divisions (Divisions A through F), designed for a reporting AI to report ***risk-weighted amounts (RWA)*** and related information concerning its relevant exposures under the IRB approach. Each division contains one or more Forms<sup>2</sup> tailored for this purpose. The following sections of these completion instructions provide general reporting instructions applicable across all Divisions and Forms, as well as specific reporting arrangements for each individual Division.
4. **Part IIIc and its completion instructions should be read in conjunction with the BCR and the relevant supervisory policy/guidance related to the capital adequacy framework.**

#### **Section A: General Instructions**

##### **A.1 Definition and Clarification**

5. Figures of percentage or year should be rounded up to two decimal points.
6. A reporting AI should report in the columns of “Exposures before recognized guarantees/credit derivative contracts” the ***EAD*** of its on-balance sheet exposures and off-balance sheet exposures before adjusting for the credit risk mitigating effects (CRM effects) of any ***recognized guarantee*** and ***recognized credit derivative contract***. For instance—
  - (a) in respect of on-balance sheet exposures, the institution should report the EAD of

<sup>1</sup> Please refer to paragraph 3 of the completion instructions for Form MA(BS)3(IIIb) for the reporting arrangements which outline a list of exposures that are not covered by the STC approach. These exposures are similarly not covered by the IRB approach.

<sup>2</sup> Please refer to sections B and C of these completion instructions for more information.

such exposures both before and after adjusting for the CRM effects of any *recognized netting*;

- (b) in respect of off-balance sheet exposures other than *default risk exposures*, the institution should report the *credit equivalent amount* of such exposures; and
- (c) in respect of off-balance sheet exposures which are default risk exposures, the institution should report the default risk exposures of such transactions after adjusting for the CRM effects of any recognized netting.

7. A reporting AI should report in the columns of “Exposures after recognized guarantees/credit derivative contracts” the EAD of its on-balance sheet exposures and off-balance sheet exposures after adjusting for the CRM effects of any recognized netting, recognized guarantee and recognized credit derivative contract.

8. **Principal amount**, in respect of an off-balance sheet exposure, should be reported without deduction of specific provisions and partial write-offs.

9. 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 while the actual amount drawn should be reported as an on-balance sheet exposure. **Trade-related contingencies**, such as trust receipts and shipping guarantees, which have already been reported as letters of credit issued or loans against import bills etc. should not be counted again as off-balance sheet exposures.

10. In certain cases, the reporting AI’s exposures to counterparties arising from derivative contracts may already be reflected, in part, on the reporting AI’s balance sheet. For example, a reporting AI may have recorded the *fair value* of a derivative contract on its balance sheet. To avoid double counting, such amount should be excluded from on-balance sheet exposures and treated as off-balance sheet exposures for the purposes of Part IIIc.

11. The accrued interest of a credit exposure should form part of the EAD of the credit exposure. A reporting AI should therefore classify and risk-weight the accrued interest receivables in the same way as the principal amount of the respective credit exposures.

12. An *originating institution* of a *non-eligible securitization transaction* should report the RWA of the underlying exposures of the transaction subject to the IRB approach in Part IIIc as if the exposures were not securitized. If the credit risk mitigation (CRM) afforded to the underlying exposures of an *eligible synthetic securitization transaction* is not in the form of *tranched credit protection*, the underlying exposures subject to the IRB approach should be reported in Part IIIc in the same manner as a non-eligible securitization transaction, except that the CRM for transferring the credit risk of the underlying exposures to the other parties to the transaction can be taken into account in the RWA calculation and therefore should also be included in the reporting. However, if the CRM is in the form of tranched credit protection, both the underlying exposures and the CRM effect should be reported in Form MA(BS)3(IIIc) (please see paragraph 15(b) of the completion instructions for Form MA(BS)3(IIIc)). For cases which are not specified in these instructions or in any other supervisory guidance relevant to *securitization transactions*, reporting AIs should consult the HKMA on the reporting arrangements.

13. There are items where the column “Nature of item” is blank and requires input by reporting AIs if the AIs have reported exposures in those items. Reporting AIs are required to provide a descriptive entry regarding the nature of the exposures reported

and should not enter unnecessary or placeholder text, such as a full stop, solely to satisfy the relevant validation rules.

## A.2 Exposure Classification

14. Part IIIc is designated for reporting the RWA for credit risk under the IRB approach, along with related information, including a breakdown of the amount by the 6 **IRB classes** and the 26 **IRB subclasses**, as outlined in the table below (see sections 142 to 146 of the BCR).<sup>3</sup> Purchased receivables must be classified as either corporate exposures or retail exposures based on their nature (see section 197 of the BCR).

IRB class	IRB subclass
Corporate exposures	(a) Specialized lending (project finance) (b) Specialized lending (object finance) (c) Specialized lending (commodities finance) (d) Specialized lending (income-producing real estate) (e) Specialized lending (high-volatility commercial real estate) (f) Small-and-medium sized corporates (g) Large corporates (h) Financial institutions treated as corporates (i) Other corporates
Sovereign exposures	(a) Sovereigns (b) Sovereign foreign public sector entities (c) Multilateral development banks
Bank exposures	(a) Banks (excluding covered bonds) (b) Qualifying non-bank financial institutions (c) Public sector entities (excluding sovereign foreign public sector entities) (d) Unspecified multilateral bodies (e) Covered bonds
Retail exposures	(a) Small business retail exposures (b) Residential mortgages to individuals (c) Residential mortgages to property-holding shell companies (d) Qualifying revolving retail exposures (transactor)

<sup>3</sup> The guidance in paragraph 18 of the completion instructions for Form MA(BS)3(IIIb), which outlines how to classify off-balance sheet exposures into exposure classes under the STC Approach, is analogically applicable to classifying off-balance sheet exposures into IRB classes and IRB subclasses under the IRB Approach.

IRB class	IRB subclass
	(e) Qualifying revolving retail exposures (revolver) (f) Other retail exposures to individuals
CIS exposures	CIS exposures
Other exposures	(a) Cash items (b) Other items

**A.3 Reporting arrangements for different IRB calculation approaches, distinct portfolios, etc.**

15. Among the six Divisions of Part IIIc, Divisions A, D and F each contain a single Form, while Divisions B, C and E each include multiple Forms for reporting exposures by IRB classes/subclasses and ***IRB calculation approach***, among others. The range of IRB calculation approaches applicable to each of the 6 IRB classes is listed in the table below (see section 147 of the BCR).

IRB class	IRB calculation approach
Corporate exposures <sup>4</sup>	(a) Foundation IRB approach (b) Advanced IRB approach (c) Supervisory slotting criteria approach
Sovereign exposures	(a) Foundation IRB approach (b) Advanced IRB approach
Bank exposures	Foundation IRB approach
Retail exposures	Retail IRB approach
CIS exposures	CIS calculation approach
Other exposures	Specific risk-weight approach

16. For Divisions B and C, the reporting AI should report exposures within each IRB subclass by portfolios that are distinct for internal management purposes. Besides, if multiple ***rating systems*** are used for a single IRB subclass, exposures rated under each system should generally be reported in separate Forms as distinct portfolios. The reporting AI should clearly communicate the reporting of exposures by portfolio to the HKMA.

17. Certain exposures subject to specific requirements for credit risk calculation should also be reported as distinct “portfolios” using separate Forms—

(a) ***IPO Financing***. A reporting AI may opt to apply section 64A of the BCR to its

<sup>4</sup> The supervisory slotting criteria approach is only available for specialized lending, and the advanced IRB approach is not available for exposures under the IRB subclass of large corporate exposures.

relevant corporate, bank and retail exposures arising from **IPO** financing (pursuant to section 202B of the BCR). Under this option, exposures from IPO financing that are eligible for a 0% risk-weight should be reported in a separate Form under the respective IRB subclass within Divisions B and C. The reporting AI should distinguish these exposures clearly by specifying “IPO financing under BCR202B” as the “portfolio type”. To attain the 0% risk-weight, the reporting AI should input a LGD of 0% and provide either its own estimates or **supervisory estimates** for other credit risk components, as appropriate. This treatment does not apply to any outstanding loan amounts remaining after payments for allotted securities are made to the relevant receiving bank.

(b) *Holdings of non-capital LAC Liabilities to which section 48(4) of the BCR applies.* A reporting AI should report, in the Forms corresponding to the relevant IRB subclasses under Divisions B and C, its holdings that—

- (i) fall within section 48(4) of the BCR, and
- (ii) would be risk-weighted under the IRB approach (see section 202C of the BCR), had such holdings not been exempted under that provision.

The holdings should be reported as a separate portfolio, with the “portfolio type” designated as “Holdings falling within BCR48(4)”.

In Form IRB\_CSB under Division B, the actual figures for these exposures should be reported in columns 6(i), 6(ii), 7, 8 and 19. As these exposures are not subject to risk-weighting, columns 15 to 17 should be reported as zero. For columns 3 to 5, 9 to 14, and 18, either the actual value or “0” should be entered, as applicable. For column 2, the reporting AI should use “D” to indicate defaulted exposures, and “N” for non-defaulted exposures.

#### **A.4 Treatments of RWA calculation related to certain portfolios of exposures**

18. Part 6 of the BCR sets out the requirements for RWA calculation under the IRB approach. The risk-weight of a relevant corporate, sovereign, bank or retail exposure under the **foundation IRB approach**, **advanced IRB approach** or the **retail IRB approach** is determined by inputting estimates of **credit risk components** into the appropriate **risk-weight function** specific to each IRB subclass. Annex IIIc-A and Annex IIIc-B provide illustrative examples of these calculations. The treatments of RWA calculations related to certain portfolios of exposures and the corresponding reporting requirements are discussed below.

##### Purchased receivables

19. Unless the reporting AI demonstrates to the satisfaction of the MA that the **dilution risk** it faces in respect of its purchased receivables is immaterial, it must calculate the RWA for both default risk and dilution risk in respect of its purchased receivables in accordance with sections 197 to 200 of the BCR. The RWA for dilution risk is required to be separately reported in Division B of Part IIIc.

20. For purchased receivables unambiguously belonging to one IRB subclass, the RWA for default risk is calculated by using the risk-weight function applicable to that IRB subclass. However, for example, if an institution is unable to ascertain whether a portfolio of purchased receivables of retail exposures to individuals fully meets the criteria for classifying as residential mortgages to individuals, the risk-weight function

for other retail exposures to individuals should instead be used.

#### Leasing arrangements

21. A reporting AI should calculate the RWA of an exposure arising from a leasing arrangement which exposes the institution to **residual value risk** in accordance with section 201 of the BCR. Among others, if an exposure arising from a leasing arrangement which exposes the institution to residual value risk, the institution must calculate the RWA for both default risk and residual value risk. **The RWA for residual value risk is required to be separately reported in Division B of Part IIIc.**

#### Securities Financing Transactions (SFTs)

22. Where an authorized institution does not have an IMM(CCR) approval for **securities financing transactions** (SFTs), the institution must calculate the RWA of its default risk exposures in respect of SFTs (whether booked in its **banking book** or **trading book**) in accordance with section 202(6) and Division 2B of Part 6A, and calculate the RWA of its exposures to the assets underlying the SFTs in accordance with section 68C and related sections of the BCR.

23. For **specified SFTs** booked in the reporting AI's banking book—

- (a) if the assets underlying the SFTs are non-securitization exposures, the AI's credit exposures to such assets should be reported in the relevant Forms in **Division B** of Part IIIc;
- (b) if the assets underlying the SFTs are **securitization exposures**, the AI's credit exposures to such assets should be risk-weighted in accordance with Part 7 of the BCR and reported in Form MA(BS)3(IIIid).

24. For specified SFTs booked in the reporting AI's trading book, the AI only needs to calculate the RWAs of its exposures to the assets in accordance with Part 8 (or Part 12 if **cryptoassets** are involved) of the BCR (see section 68C(4) of the BCR) and report the exposures as follows—

- (a) for assets other than cryptoassets, the AI's market risk exposures to the assets should be reported in Form MA(BS)3A;
- (b) for assets that are **group 1 cryptoassets** or **group 2a cryptoassets**, the AI's market risk exposures to the cryptoassets should be reported in Form MA(BS)3A. If there is any RWA for the risk of default of the redeemer or the risk arising when intermediaries perform the redemption function, the RWA should be reported in Division A.2 or B.1, as the case requires, of Form MA(BS)3(IIIif); and
- (c) for assets that are **group 2b cryptoassets**, the AI's exposures to the cryptoassets should be reported in Division B.2 of Form MA(BS)3(IIIif).

The AI is not required to calculate any RWA for the credit risk of the assets (except the risk of default of redeemer/intermediaries performing redemption function mentioned in paragraph (b) above and the conservative treatment mentioned in paragraph (c) above).

#### Credit-linked note (CLN)

25. A credit-linked note (CLN) held by the reporting AI should be allocated a risk-weight, as determined by the applicable risk-weight function, which is the higher of the risk-weight attributable to the reference **obligation or basket of reference obligation** of the

note as if the institution had a direct exposure to the reference obligation or the basket of reference obligation, or the risk-weight attributable to the note. However, a reporting AI is not required to provide regulatory capital for its exposure to a CLN held by it in excess of the institution's maximum liability under the note. See section 202A of the BCR.

26. Where a reporting AI issues a CLN to cover the credit risk of an underlying exposure (i.e. the AI buys credit protection), the maximum amount of protection should be the amount of the funds received from issuing that note. The protected amount should be treated as an exposure collateralized by cash deposits while the remaining unprotected amount, if any, should be treated as an exposure to the issuer of the underlying asset.

### **Section B: Reporting arrangements for Division A on total risk-weighted amount for credit risk under IRB approach**

27. Division A of Part IIIc contains a single form, **IRB\_TOTCRWA**, for the reporting of the total RWA for credit risk under the IRB approach along with its breakdown.

<u>Item no.</u>	<u>Nature of item</u>
1. to 6.	These items capture the breakdown of the RWA for credit risk under the IRB approach, categorised by IRB class and IRB subclass.
1.	Corporate exposures
2.	Sovereign exposures
3.	Bank exposures
4.	<u>Retail exposures</u> For clarity, item 4(a)(i) and (ii) refers to the IRB subclasses of residential mortgages to individual and residential mortgages to property-holding shell companies respectively.
5.	CIS exposures
6.	Other exposures
7.	<u>Total risk-weighted amount for credit risk (IRB Approach)</u> This item captures the RWA of the reporting AI's exposure to credit risk referred to in section 140(1) of the BCR. The reported figure should equal to item 2.3 of Division A of Form MA(BS)3(I).

28. For items 1 to 6, the reporting AI should indicate in column 1 the number of Forms in Division B from which the amounts for an IRB subclass are reported in column 2 or 3. For example, if the institution submits two Forms for the IRB subclass of other retail exposures for two distinct portfolios, “(2) Form IRB\_RETAIL” should be reported in column 1 under item 4(e).

### **Section C: Reporting Arrangements for Division B on RWA for IRB Class/Subclass**

29. Division B of Part IIIc contains Forms **IRB\_CSB**, **IRB\_SLSLOT**, **IRB\_RETAIL**, **IRB\_CIS** and **IRB\_OTHER**, which are used to report RWA and related information,

categorised by IRB class and IRB subclass. In addition, reporting AIs should report the breakdown of their *cryptoasset exposures* captured in the aforementioned Forms, in Form **IRB\_CRYPTO**, as memorandum items.

30. Further to the general instructions outlined in paragraphs 15 to 17, reporting AIs are required to specify the exposures reported in each Form by completing the relevant fields at the top of the respective Form—

Field	Form applicable	Issues to be specified
IRB Class	IRB_CSB	The IRB class to which the reported exposures belong.
IRB Approach	IRB_CSB IRB_CIS	<ul style="list-style-type: none"> <li>For Form IRB_CSB, specify whether the foundation IRB approach or the advanced IRB approach is used for credit risk calculation.</li> <li>For Form IRB_CIS, specify the <i>CIS calculation approach</i>, including the combination of approaches, used to calculate the credit risk of the reported CIS exposures.</li> </ul>
IRB Subclass	IRB_CSB IRB_SLSTOT IRB_RETAIL	The IRB subclass to which the relevant exposures belong.
Portfolio Type	IRB_CSB IRB_RETAIL	The portfolio to which the reported exposures belong includes the cases for multiple rating systems and the specific cases set out in paragraph 17. The principles for specifying “Nature of item” in paragraph 13 apply to this field.

### **C.1 Form IRB CSB**

31. This Form is used for reporting the RWA and credit risk components of corporate, bank and sovereign exposures under either the foundation IRB approach or the advanced IRB approach. The reporting AI should report exposures under each *obligor grade* of its internal rating system in the corresponding row of the Form. The obligor grades should be presented in ascending order of their associated PD estimates for RWA calculation. For consistency purposes, every obligor grade within its rating systems should be reported in each completed Form, even if no exposure falls within a particular obligor grade.

Column no.	Nature of column
1. and 2.	<u>Obligor grade</u>

Regardless of how obligor grades are referred to internally, a reporting AI should report non-defaulted exposures within the obligor grade with the highest perceived creditworthiness of obligors (i.e., the lowest “average PD” before the application of the PD floor) in the first row and denote it as a “1” obligor grade in column 1. Similarly, non-defaulted exposures within the obligor grade with the second-highest

<u>Column no.</u>	<u>Nature of column</u>
	perceived creditworthiness should be reported in the second row and denoted as the “2” obligor grade. The same applies to the subsequent obligor grades.
	Obligor grades for defaulted exposures should be placed at the end. For defaulted exposures with more than one obligor grade, the obligor grade representing the highest perceived creditworthiness in terms of EL should be ranked first. Given a rating system under the IRB approach contains at least 7 grades for non-defaulted obligors and 1 grade for defaulted obligors, the grades “1” to “8” are displayed in the template Form. The reporting AI can add rows for additional obligor grades if the rating system concerned has more than 8 obligor grades.
	In <u>column 2</u> , the reporting AI should denote “N” for a non-defaulted obligor grade and “D” for a defaulted obligor grade.
<u>3. to 5.</u>	<u>PD range</u>
	This refers to, if any, the PD range (i.e. from the lower bound to the upper bound of PD estimates) for each obligor grade used by the reporting AI for internal purposes. If such a PD range is not internally used, the institution should enter the average PD before the application of PD floor as both the lower bound and the upper bound of the obligor grade, where applicable.
<u>3.</u>	<u>Lower bound</u>
<u>4.</u>	<u>Upper bound</u>
<u>5.</u>	<u>Average PD</u>
	This column captures the PD estimate for each obligor grade (in percentage) assigned to the exposures for the calculation of RWA, after the application of PD floor of <u>0.05%</u> for corporate and bank exposures, where applicable. For obligor grades for defaulted exposures, the PD estimate should be 100%.
<u>6. to 11.</u>	<u>EAD calculation</u>
	These columns capture the EAD <sup>5</sup> for exposures for each obligor grade, with breakdowns—
	(a) <u>columns 6(i) to 8</u> capture the exposures before the CRM effect of recognized guarantees or credit derivative contracts respectively is taken into account; and
	(b) <u>columns 9 to 11</u> capture the exposures after the CRM effect of recognized guarantees or credit derivative contracts respectively is taken into account.
	Please also refer to the clarifications in paragraphs 6 and 7 above.
<u>6(i).</u>	<u>On-balance sheet exposures - before netting</u>

<sup>5</sup> To avoid doubt, EAD is measured without deduction of specific provisions and partial write-offs (see the definition of exposure at default under section 139(1) of the BCR).

<u>Column no.</u>	<u>Nature of column</u>
	This column captures the EAD for exposures before adjusting for the CRM effect of a valid bilateral netting agreement or valid cross-product netting agreement, if any.
6(ii).	On-balance sheet exposures – after netting
7.	Off-balance sheet exposures - Other than derivative contracts and SFTs
8.	Off-balance sheet exposures - Derivative contracts and SFTs
9.	On-balance sheet exposures after netting
10.	Off-balance sheet exposures - Other than derivative contracts and SFTs
11.	Off-balance sheet exposures - Derivative contracts and SFTs
12.	<u>EAD</u>
13.	The aggregated EAD of exposures falling within an obligor grade, which should be equal to the sum of <u>columns 9 to 11</u> .
	<u>Exposure weighted average LGD</u>
	$= \sum_i \text{LGD}_i \times \text{EAD}_i / \sum_i \text{EAD}_i \text{ (reported in percentage)}$
	where:
	$\text{LGD}_i$ = the LGD associated with the $i^{\text{th}}$ exposure in a grade.
	$\text{EAD}_i$ = the EAD associated with the $i^{\text{th}}$ exposure allocated to a grade.
14.	<u>Exposure weighted average maturity value</u>
	$= \sum_i \text{M}_i \times \text{EAD}_i / \sum_i \text{EAD}_i \text{ (reported in years6)}$
	where:
	$\text{M}_i$ = the M associated with the $i^{\text{th}}$ exposure in a grade.
	$\text{EAD}_i$ = the EAD associated with the $i^{\text{th}}$ exposure allocated to a grade.
15. to 17.	<u>Columns 15 to 17</u> capture the aggregated RWA of exposures for each obligor grade and, if any, of which comes from the dilution risk of purchased receivables and residual value risk of leasing arrangements (see paragraphs 19 to 21 above).
15.	Risk-weighted amount
16.	Of which: For dilution risk
17.	Of which: For residual value risk

<sup>6</sup> Subject to the fulfilment of the notification requirement under section 167(2) of the BCR, a reporting AI using the foundation IRB approach may calculate the M of all its corporate, sovereign and bank exposures in accordance with section 168 of the BCR.

<u>Column no.</u>	<u>Nature of column</u>
18.	<u>Expected loss amount</u> The calculated <b><i>expected loss (EL) amount</i></b> referred to in section 220(2) of the BCR for exposures reported in an obligor grade.
19.	<u>Number of obligors</u> This item captures the number of obligors associated with the reported exposures after the CRM effect is taken into account, including obligors in respect of credit facilities, counterparties in respect of transactions, credit protection providers, redeemers in respect of the cryptoasset, etc.

32. At the bottom of the Form, a separate item titled “Of which: Exposures subject to asset value correlation multiplier of 1.25” is provided for reporting AIs to report exposures to obligors that are either ***large regulated financial institutions*** or financial institutions not supervised by a ***financial regulator*** (see section 157A(1) of the BCR). To avoid doubt, these exposures should be reported in the main table of the Form.

*Exposures after recognized guarantees/credit derivative contracts*

33. The general steps to report exposures covered by recognized guarantees/credit derivative contracts are outlined below. The reporting AI should refer to sections 210 to 217 and 219 of the BCR for specific scenarios such as trashed credit protection, counter-guarantee, the credit protection subject to a ***materiality threshold***, etc.

(a) For an ***underlying exposure*** under the foundation IRB approach—

- (i) Divide the EAD of the exposures into two portions: (a) the portion covered by the credit protection (***covered portion***), and (b) the portion not covered by the credit protection (***uncovered portion***);<sup>7</sup>
- (ii) Allocate a risk-weight to the uncovered portion calculated in the same manner as for any other direct exposure to the obligor and report the uncovered portions under columns 9 to 11 in the Form according to the applicable obligor grade of the obligor; and
- (iii) Allocate a risk-weight to the covered portion calculated in the manner as if it were a direct exposure to the credit protection provider. For example, if an exposure to the credit protection provider is also subject to the IRB approach, report the covered portion as the “exposures after recognized guarantees/credit derivative contracts” under columns 9 to 11 of the Form for the IRB subclass to which an exposure to the credit protection provider belongs, taking into account the applicable obligor grade of the credit protection provider.

(b) For an underlying exposure under the advanced IRB approach—

- (i) If the PD estimate of the underlying exposure is adjusted in accordance with section 216 of the BCR, the general steps in (a) above are applicable; or

<sup>7</sup> A reporting AI must adjust the amount of the credit protection in accordance with section 216(5) and (6) of the BCR if there is a currency mismatch or maturity mismatch between an underlying exposure of the institution and a recognized guarantee or recognized credit derivative contract covering the underlying exposure.

(ii) If the LGD estimate of the underlying exposure is adjusted, the reporting AI should report the same exposure amount under any of the columns 9 to 11 of the same Form and in the grade applicable to the PD estimate of the underlying exposure, and reflect the credit risk mitigating effects in the LGD estimate in column 13.

On-balance sheet netting in relation to market making of Exchange Fund Bills/Notes

34. In respect of on-balance sheet netting for sovereign exposures, the market makers who have short positions in Exchange Fund Bills/Notes may report their net holdings of such instruments provided that 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—

- the long and short positions of instruments with a residual maturity of less than one year may be offset with each other;
- the long and short positions of instruments with a residual maturity of not less than one year may be offset with each other;
- if the net positions of both items (a) and (b) above are long, the positions should be reported; and
- if the net position in item (a) is long and the net position in item (b) is short, or the other way round, the two positions can be netted with each other on a dollar for dollar basis. The resultant net long position, if any, should be reported.

**C.2 Form IRB SLSLOT**

35. This Form is used to report specialized lending under the supervisory slotting criteria approach. In each reporting Form, a reporting AI should specify the IRB subclass of the relevant exposures of specialized lending.

Column no.   Nature of column

1. Supervisory rating grades

These refer to the 5 supervisory rating grades of “strong”, “good”, “satisfactory”, “weak” and “default” referred to in section 158(2) of the BCR.

2. SRW

This refers to the supervisory estimate for the risk-weight to be allocated to the specialized lending as referred to in section 156(1)(c) of the BCR. The supervisory estimate for the risk-weight applicable for an exposure is set out in section 158(2) to (6) of the BCR.

3(i). to 8. EAD calculation

These columns capture the EAD of exposures for each supervisory rating grade, with breakdowns—

- columns 3(i) to 5 capture the exposures before the CRM effect of recognized guarantees or credit derivative contracts respectively is taken into account; and

<u>Column no.</u>	<u>Nature of column</u>
	(b) columns 6 to 8 capture the exposures after the CRM effect of recognized guarantees or credit derivative contracts respectively is taken into account. Subject to the fulfilment of the relevant conditions, the general steps outlined in paragraphs 33(a) apply to specialized lending exposures covered by recognized guarantees/credit derivative contracts.
3(i).	<u>On-balance sheet exposures - before netting</u>
	This column captures the EAD for exposures before adjusting for the CRM effect of a valid bilateral netting agreement or valid cross-product netting agreement, if any.
3(ii)	<u>On-balance sheet exposures - after netting</u>
4.	<u>Off-balance sheet exposures - Other than derivative contracts and SFTs</u>
5.	<u>Off-balance sheet exposures - Derivative contracts and SFTs</u>
6.	<u>On-balance sheet exposures after netting</u>
7.	<u>Off-balance sheet exposures - Other than derivative contracts and SFTs</u>
8.	<u>Off-balance sheet exposures - Derivative contracts and SFTs</u>
9.	<u>EAD</u>
	This refers to the aggregated EAD of exposures falling within a supervisory rating grade.
11.	<u>Risk-weighted amount</u>
	This column captures the RWA of the exposures falling within a supervisory rating grade.
12.	<u>Expected loss amount</u>
	This item captures the EL amount of specialized lending, which should be determined in accordance with section 220(3) to (5) of the BCR.
13.	<u>Number of obligors</u>
	The instruction for <u>column 19</u> of Form IRB_CSB applies with references to an obligor grade being construed as references to a supervisory rating grade.

### C.3 Form IRB RETAIL

36. This Form is used for reporting the different IRB subclasses of retail exposures. In each reporting Form, a reporting AI should state the retail IRB subclass for which the Form is completed, and the portfolio type when more than one Form is reported for an IRB subclass.

<u>Column no.</u>	<u>Nature of column</u>
1. and 2.	<u>Pool</u>

<u>Column no.</u>	<u>Nature of column</u>
	Regardless of how the pools of retail exposures are referred to internally, a reporting AI should report non-defaulted exposures within the pool with the lowest “average PD” before the application of the PD floor in the first row and denote it as a “1” pool in <u>column 1</u> . Similarly, the reporting AI should report non-defaulted exposures within the pool with the second lowest “average PD” in the second row, denoting as the “2” pool. The same applies to the subsequent pools. If two or more pools share the same “average PD”, the pool with highest perceived creditworthiness of exposures in terms of EL should be ranked first.
	Pools for defaulted exposures should be placed at the end. For cases with more than one pools for defaulted exposures, the pool with the highest perceived creditworthiness in terms of EL should be ranked first.
	In <u>column 2</u> , the reporting AI should use “N” to denote a non-defaulted pool and “D” a defaulted pool. For consistency, a reporting AI should report every pool of retail exposures within its internal rating systems in each Form even though there is no exposure falling within a particular pool.
3. to 5.	<p><u>PD range</u></p> <p>The instructions for <u>columns 3 to 5</u> of Form IRB_CSB apply with references to an obligor grade being construed as references to a pool of retail exposures.</p> <ol style="list-style-type: none"> <li>3. <u>Lower bound</u></li> <li>4. <u>Upper bound</u></li> <li>5. <u>Average PD</u></li> </ol> <p>This column captures the PD estimate for each pool (in percentage) assigned to the exposures for the calculation of the RWA, after the application of PD floors, where applicable. For obligor grades of defaulted exposures, the PD estimate should be 100%.</p>
6. to 11.	<p><u>EAD calculation</u></p> <p>These columns capture the EAD for exposures before and after the effect of CRM is taken into account by pools of retail exposures. Please also refer to—</p> <ol style="list-style-type: none"> <li>(a) the clarifications provided in paragraphs 6 and 7 above;</li> <li>(b) the instructions for <u>columns 6 to 11</u> of Form IRB_CSB apply with references to an obligor grade being construed as references to a pool of retail exposures; and</li> <li>(c) paragraph 33(b) applies with the necessary modifications (see section 217 of the BCR).</li> </ol>
12.	<u>EAD</u>
	This refers to the aggregated EAD of exposures falling within a pool

<u>Column no.</u>	<u>Nature of column</u>
	of retail exposures, which should be equal to the sum of <u>columns 9 to 11.</u>
13.	<u>LGD</u>
	This column captures the LGD estimate (in percentage) used for RWA calculation of exposures within a pool.
14.	Risk-weighted amount
15. and 16.	<u>Columns 15 and 16</u> capture the aggregated RWA of exposures for each pool of retail exposures and those, if any, within which that come from the dilution risk of purchased receivables and residual value risk of leasing arrangements (see paragraphs 19 to 21).
15.	Of which: For dilution risk
16.	Of which: For residual value risk
17. and 18.	The instructions for <u>columns 18 and 19</u> of Form IRB_CSB apply with references to obligor grade being construed as references to pool of retail exposures.
17.	Expected loss amount
18.	Number of obligors

#### **C.4 Form IRB CIS**

37. Form **IRB\_CIS** is used to report CIS exposures not constituting deductible holdings<sup>8</sup>. A reporting AI should report a CIS exposure to a collective investment scheme (CIS) in the Form specific to the CIS calculation approach used for risk-weighting that CIS exposure, i.e. **look-through approach** (LTA), **third-party approach** (TPA), **mandate-based approach** (MBA), **fall-back approach**, or a combination of approaches.<sup>9</sup>

38. “Effective risk-weight” referred to in column 1 means—

- if a single approach is used for calculating the RWA of a CIS exposure, the effective risk-weight applicable to the CIS exposure determined under Division 2 of Part 6B of the BCR; and
- if a combination of approaches is used for calculating the RWA of a CIS exposure, the effective risk-weight (RW) of the CIS exposure calculated as follows:

<sup>8</sup> In case of a CIS exposure constituting deductible holdings—

- the deductible holding which is an equity exposure should be risk-weighted in accordance with Part 4 of the BCR and should be reported in Form MA(BS)3(IIIb); or
- in any other case, the deductible holding should be risk-weighted under Part 6 of the BCR and should be reported the holdings in Form IRB\_CIS as if they were calculated under the LTA. The reporting AI should also separately notify the HKMA of such a reporting.

<sup>9</sup> See Part IIIa and IIIb – Annex B for numerical examples that have reference value despite the risk-weights under the STC approach are used for illustration.

$$RW = \frac{\sum_a RWA_a}{TA} \cdot L$$

where—

- (i)  $RWA_a$  is the RWA of that portion of the underlying exposures of a CIS which is determined by using approach  $a$ ;
- (ii)  $TA$  is the total assets of the CIS; and
- (iii)  $L$  is the leverage of the CIS calculated in accordance with section 226ZJ(2)(b) of the BCR.

39. Concerning the treatments under LTA and MBA of CISs where some or all the underlying exposures are **group 1b cryptoasset exposures** or **group 2 cryptoasset exposures**—

- (a) If an underlying exposure of a CIS is a group 1b cryptoasset exposure, the RWA of the underlying exposure will be the total RWA of the cryptoasset calculated in accordance with sections 367, 368, 369 and 375 of the BCR, as applicable, depending on whether the CIS is a **member holder** or not, as if the cryptoasset were held directly by the reporting AI.
- (b) If any one or more of the underlying exposures of a CIS are group 2 cryptoasset exposures, portion B of the reporting AI's CIS exposure to that CIS as determined in accordance with section 226ZI(3A)(a) of the BCR should be reported as if portion B were a standalone CIS exposure.

For the avoidance of doubt, AIs' exposures to collective investment schemes set out below should be reported in MA(BS)3A and/or MA(BS)3(III) instead of this Form:

- (a) an exposure falling within paragraph (c) of the definition of "CIS exposure" in section 2(1) of the BCR; and
- (b) portion A of a CIS exposure referred to in section 226ZI(3A)(a) of the BCR.

## **C.5 Form IRB OTHER**

40. This Form is used for reporting the RWA of exposures that fall within the IRB class of other exposures. The Form consists of two panels, covering (i) cash items and (ii) other items.

### Panel (i) – Cash items

Item no.      Nature of item

1.      Notes and coins

This item captures the exposures referred to in paragraph (a) of the definition of **cash items** under section 139 of the BCR (referred to as "the definition" for the items below).

2.      Government certificates of indebtedness

This item captures the exposures referred to in paragraph (b) of the

<u>Item no.</u>	<u>Nature of item</u>
3.	<u>Gold bullion held in own vault or on an allocated basis, to the extent backed by gold liabilities</u> <p>This item captures the exposures referred to in paragraph (c) of the definition.</p> <p>Gold bullion held by another person for the reporting AI on an <u>unallocated</u> basis, although backed by the reporting AI's gold bullion liabilities, should be treated as a credit exposure to that person and risk-weight accordingly.</p>
4.	<u>Gold bullion held not backed by gold liabilities</u> <p>This item captures the exposures referred to in paragraph (d) of the definition.</p>
5.	<u>Cash items in the course of collection</u> <p>This item captures the exposures referred to in paragraph (e) of the definition, including, among others, cheques and drafts against which the reporting AI has purchased or discounted the cheques presented by its customer and in respect of which the reporting AI is now seeking payment from the drawee bank.</p> <p>Import and export trade bills held by the reporting AI that are in the process of collection should not be included in cash items but should be risk-weighted and reported as exposures to the counterparties concerned.</p>
6. to 10.	<p>These items exclude exposures arising from repo-style transactions unless specified in Part 6A of the BCR.</p>
6.	<u>Unsettled clearing item of the institution being processed through any interbank clearing system in Hong Kong</u> <p>This item captures the exposures referred to in paragraph (f) of the definition.</p>
7.	<u>Receivables from transactions in securities, foreign exchange, and commodities which are not yet due for settlement</u> <p>This item captures the exposures referred to in paragraph (g) of the definition.</p>
8.	<u>Positive current exposures from delivery-versus-payment transactions which remain unsettled after the settlement date</u> <p>This item captures the exposures referred to in paragraph (h) of the definition.</p>

<u>Item no.</u>	<u>Nature of item</u>
9.	<u>Amount due from transactions entered into on a basis other than a delivery-versus-payment basis and remain unsettled for up to 4 business days after the settlement date (for non-significant amount only)</u>

This item captures the exposures referred to in paragraph (i) of the definition.

The reporting AI may opt for disregarding the threshold, and report such transactions<sup>10</sup> as if a loan was provided by the reporting AI to the counterparty, and risk-weight the exposures according to the IRB subclass of an exposure to that counterparty.

10.	<u>Amount due from transactions entered into on a basis other than a delivery-versus-payment basis and remain unsettled for 5 or more business days after the settlement date</u>
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This item captures the exposures referred to in paragraph (j) of the definition. The EAD of such transactions should be the amounts of payment made or the current market value of the thing delivered by the reporting AI, plus any positive current exposure associated with the transactions.

#### Panel (ii) – Other items

<u>Item no.</u>	<u>Nature of item</u>
1.	<u>Premises, plant and equipment, other fixed assets for own use, and other interest in land and buildings</u>
	Included are—
	<ul style="list-style-type: none"> <li>(a) investments in premises, plant and equipment and all other fixed assets of the reporting AI which are held for own use;</li> <li>(b) a right-of-use asset recognized by the reporting AI as a lessee in accordance with the prevailing accounting standards issued by Hong Kong Institute of Certified Public Accountants where the asset leased is a tangible asset; and</li> <li>(c) other interests in land which are neither occupied by the reporting AI nor used in the operation of the AI's business.</li> </ul>
2.	<u>Exposures subject to the IRB approach which are not elsewhere specified</u>

This item is for exposures that are not classified under the IRB class of corporate, sovereign, bank, retail or CIS exposures or the IRB subclass of cash items.

2a. to 2e.	The reporting AI should enter a description of the reported item in <u>column 1</u> , and the relevant risk-weight in <u>column 2</u> in accordance with section 196(1) or (2) of the BCR.
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<sup>10</sup> Therefore, all transactions of the same nature as specified in paragraph (i) of the definition but regardless of whether the sum of the amounts of payment made (or the current market value of thing delivered) and the positive current exposure incurred is less than \$10 million in respect of each of such transactions.

41. A reporting AI is required to report the exposure amount both before and after recognized netting in columns 3 and 4 respectively. Where an item is not covered by a valid bilateral netting agreement or valid cross-product netting agreement, the same exposure amount should be entered in both columns.

## **C.6 Form IRB CRYPTO**

42. Form **IRB\_CRYPTO** captures **group 1 cryptoasset exposures** that are assigned to the banking book and are subject to the IRB approach, covering both on-balance sheet and off-balance sheet exposures. The reporting AI is required to report these exposures in the Form by selecting the appropriate IRB subclass or, where applicable, “pool of reference assets”, from the pull-down menu under items *1a, 2a, 2b, 2c, 2d* and *2e*. The Form displays five rows for each of these items, and the reporting AI should add additional rows where necessary.

Item no.    Nature of item

**1.**    Group 1a cryptoasset exposures

Items *1a(i)* to *(v)* capture **group 1a cryptoasset exposures** based on the type of **traditional asset** being tokenised.

Out of all the exposures reported under item 1a, the reporting AI should report those in default and those to financial institutions that are subject to the asset value correlation multiplier of 1.25 in the RWA calculation under items *1b(i)* and *1b(ii)* respectively.

**2.**    Group 1b cryptoasset exposures

If the reporting AI has a group 1b cryptoasset exposure assigned to its banking book, the risks arising from such an exposure should be reported under item 2 in the manner as set out below.

**2a.**    RWA for exposure to reference assets

(a) Items *2a(i)* to *(v)* capture the credit risk of the **reference asset(s)** of the **group 1b cryptoasset** to which the reporting AI's group 1b cryptoasset exposure relates. For example, if the reference asset of the group 1b cryptoasset is a bond issued by a large corporate, the AI's exposure to the reference asset should be reported under item *2a*, selecting the IRB subclass “Large corporate” as the “Nature of item” from the pull-down menu.

(b) If the group 1b cryptoasset references a pool of reference assets that fall within the same IRB subclass, the reporting AI's exposure to the pool should be reported in accordance with paragraph (a). If the reference assets in the pool fall within different IRB subclasses, such as sovereign exposures and cash, the reporting AI's exposure to the pool should be reported under item *2a* in “Pool of reference assets” selected as the “Nature of item” from the pull-down menu.

**2b.**    RWA for exposure to redeemer

Items *2b(i)* to *(v)* capture the credit risk of the redeemer in respect of the group 1b cryptoasset to which a group 1b cryptoasset exposure relates, which are applicable to the reporting AI if it is required to calculate a

<u>Item no.</u>	<u>Nature of item</u>
	RWA for such a credit risk under section 367(2)(a)(ii) or (6), 368(2)(a)(ii) or (4), or 369(3)(a)(iii) or (5) and section 375(3) of the BCR. The reporting AI should select from the pull-down menu the IRB subclass to which an exposure to the redeemer belongs would fall in the column “Nature of item”.
2c. and 2d.	Item 2c or 2d will be relevant to the reporting AI’s group 1b cryptoasset exposure only if the group 1b cryptoasset to which the exposure relates is structured in such a way that only member holders of the cryptoasset are allowed to transact directly with the redeemer to redeem the cryptoasset.
2c.	<p><u>Reporting AI as member holder - RWA for obligation to purchase cryptoassets from non-member holders</u></p> <p>(a) This item will be applicable to the reporting AI if it is required to calculate a RWA under section 368(2)(b) or (4)(a)(ii) and section 375(3) of the BCR. The reporting AI should report its exposure to the units of the group 1b cryptoasset that it could be obliged to purchase from <b>non-member holders</b> in items 2c(i) to (v), categorised by the IRB subclass of the type of reference asset of the group 1b cryptoasset.</p> <p>(b) If the group 1b cryptoasset references a pool of reference assets, the exposure to the units of the group 1b cryptoasset that the reporting AI could be obliged to purchase should be reported under item 2c in a similar manner as set out in paragraph (b) of the instructions for item 2a.</p>
2d.	<p><u>Reporting AI as non-member holder - RWA for exposures to member holders</u></p> <p>This item will be applicable to the reporting AI if it is required to calculate a RWA under section 369(2)(a)(ii), (3)(a)(ii) or (5) and section 375(3) of the BCR. The reporting AI should report its exposure(s) to the member holders in any one or more of items 2d(i) to (v) based on the IRB subclass to which the member holder concerned belongs.</p>
2e.	<p><u>Other risk identified that does not fall within item 2a, 2b, 2c or 2d</u></p> <p>If under section 375(1) of the BCR the reporting AI has identified risk arising from its group 1b cryptoasset exposure that does not fall within items 2a to 2d, the exposure to such risk should be reported in this item. The reporting AI should also indicate the nature of risk in the column “Nature of item”.</p>
3	<p><u>Top 5 Group 1 cryptoassets by RWA</u></p> <p>The RWAs of all the AI’s group 1 cryptoasset exposures that relate to the same group 1 cryptoasset should be aggregated. The top 5 group 1 cryptoassets in terms of RWA should be reported under item 3, with the largest one reported in item 3a, the second largest one in item 3b and so on. The reporting AI should provide a description of each of the group 1 cryptoassets reported under item 3 in the column “Nature of item”.</p>
4	<p><u>Total recognized collateral that is group 1a cryptoasset</u></p>

<u>Item no.</u>	<u>Nature of item</u>
	If there is any exposure (whether it is a cryptoasset exposure or not) secured by recognized collateral that is a <i>group 1a cryptoasset</i> , the reporting AI should report in <u>column A11</u> of this item the total current market value of the relevant recognized collateral and in <u>column A12</u> of this item the EAD covered by it.

#### **Section D: Reporting arrangements for Division C – LGD for Corporate, Sovereign, Bank and Retail Exposures**

43. Division C of Part IIIc contains Forms **IRB\_FIRBLGD**, **IRB\_AIRBLGD** and **IRB\_RETAILIRBLGD** for reporting the LGD information for corporate, sovereign, bank and retail exposures by IRB classes and IRB subclasses.

##### **D.1 Form IRB FIRBLGD – LGD under the Foundation IRB Approach**

44. This Form is used for reporting the LGD information for corporate, sovereign and bank exposures under the foundation IRB approach. For each Form IRB\_CSB reported under Division B for exposures under the foundation IRB approach, a reporting AI should file a corresponding Form **IRB\_FIRBLGD**.

45. In each Form of IRB\_FIRBLGD, a reporting AI should indicate the IRB class and subclass for which the Form is completed, as well as the portfolio type where more than one Form is reported for a given IRB subclass.

<u>Column no.</u>	<u>Nature of column</u>
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**1. and 2. Obligor grade - Average PD**

The same set of obligor grades and the values of average PD reported in columns 1 and 5 of the Form **IRB\_CSB** for a specific IRB subclass/portfolio should be reported.

**3. EAD**

The same value of EAD for an obligor grade reported in column 12 of Form **IRB\_CSB** for the relevant IRB subclass/portfolio type should be reported.

**4. to 12. LGD**

This item captures the EAD of exposures subject to a particular supervisory estimate of LGD. For an exposure covered by one or more recognized collateral, the reporting AI should apportion the EAD of the exposure to the covered portion and the uncovered portion to the respective columns in respect of the supervisory estimate of LGD (see section 160 of the BCR).

**4. Exposures with *specific wrong-way risk* (LGD: 100%)**

This column captures the exposure using the supervisory estimate of 100% for the LGD referred to in section 160(1)(c) and (d).

<u>Column no.</u>	<u>Nature of column</u>
5.	<u>Subordinated exposures (LGD: 75%)</u> See section 160(1)(b) and (ba).
6.	<u>Unsecured senior exposures (LGD: 45%)</u> See section 160(1)(a) and (ba).
7.	<u>Unsecured senior exposures (LGD: 40%)</u> See section 160(1)(ab) and (ba).
8.	Other recognized IRB collateral (LGD: 25%)
9.	Recognized commercial real estate (LGD: 20%)
10.	Recognized residential real estate (LGD: 20%)
11.	Recognized financial receivables (LGD: 20%)
12.	Recognized financial collateral (LGD: 0%)
13.	<u>Exposure weighted average LGD</u> This refers to the exposure weighted average LGD for exposures within an obligor grade. The reported values should be the same as those reported in <u>column 13</u> of Form IRB_CSB for that particular IRB subclass/portfolio type.

## **D.2 Form IRB AIRBLGD – LGD under the advanced IRB Approach**

46. This Form is used for reporting the LGD information for corporate and sovereign exposures under the advanced IRB approach. For each Form IRB\_CSB reported under Division B for exposures under the advanced IRB approach, a reporting AI should file a corresponding Form **IRB\_AIRBLGD**.

47. In each reporting Form of IRB\_AIRBLGD, a reporting AI should indicate the IRB class and subclass for which the Form is completed, as well as the portfolio type where more than one Form is reported for an IRB subclass.

<u>Column no.</u>	<u>Nature of column</u>
1. and 2.	<u>Obligor grade - Average PD</u> The same set of obligor grades and the values of average PD reported in <u>columns 1 and 5</u> of the Form IRB_CSB for a specific IRB subclass/portfolio should be reported.
3.	<u>EAD</u> The same value of EAD for an obligor grade reported in <u>column 12</u> of Form IRB_CSB for the relevant IRB subclass/portfolio type should be reported.
4. to 18. (or more).	<u>LGD</u>

Column no. Nature of column

These columns capture the EAD of exposures falling within a *facility grade* of the relevant internal rating system of the reporting AI. While 15 columns are displayed in the template, additional columns can be added for a rating system having more than 15 facility grades. The reporting AI should specify the LGD estimate of facility grades in columns 4 to 17 (or the second last column if additional columns are inserted), and a brief description. The value of LGD estimate for the facility grade in either column 18 or the last column if additional columns are inserted should be set at 100%.

**19. (or the last column)** Exposure weighted average LGD

This refers to the exposure weighted average LGD for exposures within an obligor grade. The reported values should be the same as those reported in column 13 of Form IRB\_CSB for that particular IRB subclass/portfolio type.

48. A separate table in this Form is provided for reporting selected breakdowns of corporate exposures to capture the EAD of exposures if the estimated LGD of a corporate exposure is lower than the respective LGD floor determined under section 161 of the BCR. The institution should report these breakdowns by the coverage of an exposure (viz. unsecured exposures, *partially secured exposures* and *fully secured exposures*) and the extent to which the LGD estimate falls below the respective floor (viz. less than 5%, 5-10% or more than 10%).

### **D.3 Form IRB RETAILIRBLGD – LGD under the retail IRB Approach**

49. This Form is used for reporting the LGD information for retail exposures under the retail IRB approach. For each Form IRB\_RETAIL reported under Division B for retail exposures, a reporting AI should file a corresponding Form **IRB\_RETAILIRBLGD**.

50. In each of the Form, a reporting AI should state the IRB subclass for which the Form is completed, as well as the portfolio type where more than one Form are reported for an IRB subclass.

Column no. Nature of column

**1. and 2.** Pool – Average PD

The same set of *pools* of retail exposures and the values of average PD reported in columns 1 and 5 of the Form IRB\_RETAIL for a specific IRB subclass/portfolio should be reported.

**3.** EAD

The same value of EAD for a pool of retail exposures reported in column 12 of Form IRB\_RETAIL for that particular IRB subclass/portfolio type should be reported.

**4.** LGD

The same value of LGD for a pool of retail exposures in column 13 of Form IRB\_RETAIL for that particular IRB subclass/portfolio type should be

<u>Column no.</u>	<u>Nature of column</u>
	reported.

51. A separate table in this Form is provided for reporting selected breakdowns of retail exposures to capture the EAD of exposures if the estimated LGD of a retail exposure is lower than the respective LGD floor determined under section 178(c) to (d) of the BCR. The institution should report these breakdowns by the coverage of an exposure (viz. unsecured exposures, partially secured exposures and fully secured exposures) and the extent to which the LGD estimate falls below the respective floor (viz. less than 5%, 5-10% or more than 10%).

#### **Section E: Reporting arrangements for Division D on off-balance sheet exposures other than default risk exposures**

52. Division D of Part IIIc contains a single Form **IRB\_OBSND** for reporting amounts of off-balance sheet exposures other than default risk exposures. The reporting AI should report the relevant exposures under the foundation IRB approach in panel A1, the advanced IRB approach in panel A2 and the retail IRB approach in panel B of the Form. Further breakdown by IRB class is required for panels A1 and A2. Memorandum item in panel C captures the exposures, out of those reported in panels A1, A2 and B, relates to group 1a cryptoassets and 1b cryptoassets.

53. Items *1* to *15* capture different types of exposures, which are presented horizontally in the Form. Under each item, there are 4 columns (i.e. a, b, c and d). A reporting AI should provide the principal amount, **credit conversion factor** (CCF) and credit equivalent amount of the exposures before and after adjusting the CRM effects of recognized guarantees/credit derivative contracts in these columns respectively. The requirements to determine these values of exposures subject to the foundation IRB approach, the advanced IRB approach or the retail IRB approach are set out in sections 163, 164 and 180 of the BCR respectively.

<u>Item no.</u>	<u>Nature of item</u>
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1. to 14. These items capture the types of exposures specified in Table 20 to section 163(2) of the BCR.<sup>11</sup>

1. Direct credit substitutes
2. Transaction-related contingencies
3. Trade-related contingencies
4. Asset sales with recourse
5. Forward asset purchases
6. Partly paid-up securities
7. Forward forward deposits placed
8. Note issuance and revolving underwriting facilities

<sup>11</sup> A reporting AI may refer to paragraph 71 of the completion instructions for Form MA(BS)3(IIIb), which clarifies certain exposures listed in Schedule 6 of the BCR. Items bearing the same name in Schedule 6 and Table 20 of the BCR correspond to the same type of exposure.

<u>Item no.</u>	<u>Nature of item</u>
9.	Commitments eligible for a CCF of 0%
10.	Revolving commitments that are unconditionally cancellable without prior notice
11.	Non-revolving commitments that are unconditionally cancellable without prior notice
12.	Revolving commitments that are not unconditionally cancellable without prior notice
13.	Non-revolving commitments that are not unconditionally cancellable without prior notice
14.	Sale and repurchase agreements (excluding those that are repo-style transactions)
15.	<u>Others</u>
	This item captures the off-balance sheet exposures, other than default risk exposures, which do not fall within items 1 to 14. Item 15 may include the credit exposures to persons holding collateral posted by the reporting AI (other than collateral posted for centrally cleared trades and held by CCPs) in a manner that is not bankruptcy remote from the persons.

#### **Section F: Reporting arrangements for Division E related to reporting of default risk exposures**

54. Division E contains the following Forms for reporting default risk exposures by the approaches to calculate such exposures to a counterparty—

- (a) Form **IRB\_OBSD\_SACCR**: in respect of derivatives contracts calculated under the SA-CCR approach;
- (b) Form **IRB\_OBSD\_N\_IMM**: in respect of SFTs calculated under Division 2B of Part 6A of the BCR; and
- (c) Form **IRB\_OBSD\_IMM**: in respect of derivatives contracts and/or SFTs calculated under the IMM(CCR) approach.

55. It should be noted that under the SA-CCR approach and the IMM(CCR) approach, the default risk exposures can be regarded as zero for recognized credit derivative contracts held by the reporting AI as protection buyer in respect of which the CRM effects have already been taken into account in accordance with Division 10 of Part 6 of the BCR for the purposes of RWA calculation.

56. For **long settlement transactions** (LSTs) arising from derivative contracts or SFTs, a reporting AI may determine the relevant risk-weight using the STC approach on a permanent basis (see section 140(1D) of the BCR).

#### **F.1 Form IRB\_OBSD\_SACCR – Default Risk Exposures in respect of Derivative Contracts (SA-CCR)**

57. If the reporting AI uses the SA-CCR approach to calculate default risk exposures, it

should report the exposures so calculated in the appropriate items in Form **IRB\_OBSD\_SACCR**.

Item no.    Nature of item

**A1.**    Unmargined contracts not subject to recognized netting

Items *A1(i), (ii), (iii) and (iv)* capture derivative contracts—

- (a) that fall within the definition of **unmargined contract** in section 226BA of the BCR; and
- (b) that are not covered by recognized netting.

These items also capture contracts—

- (a) that fall within section 226BH(2) or (4) of the BCR; and
- (b) that have been removed from the netting sets concerned under section 226BH(3)(b) or (5) of the BCR.

**A2.**    Margined contracts not subject to recognized netting

Items *A2(i), (ii), (iii) and (iv)* capture derivative contracts—

- (a) that fall within the definition of **margined contract** in section 226BA of the BCR; and
- (b) that are not covered by recognized netting.

**A3.**    Contracts (margined or unmargined) subject to recognized netting

Items *A3(i), (ii), (iii) and (iv)* capture derivative contracts (whether they are margined contracts or not) covered by recognized netting.

**B1.**    CCP-related transactions (including offsetting transactions) not associated with group 2b cryptoasset derivative contracts

This item is for reporting the amounts captured under columns 1 to 8 that are related to **offsetting transactions** or **CCP-related transactions** entered into by the reporting AI with **clearing members** or **clearing clients** (see Part IIIe – Annex A and paragraph 5 of the completion instructions for Form MA(BS)3(IIIe) for more information on exposures related to centrally cleared transactions that should be reported in this Form).

**B2.**    CCP-related transactions (including offsetting transactions) associated with group 2b cryptoasset derivative contracts

Similar to item *B1*, this item is for reporting the amounts captured under column 9 (i.e. *9a to 9d(ii)*) that are related to offsetting transactions or CCP-related transactions entered into by the reporting AI with clearing members or clearing clients.

58. For all items in Form IRB\_OBSD\_SACCR except default risk exposures in respect of group 2b cryptoasset derivative contracts—

- (a) if a netting set contains a credit derivative contract that falls within section 226BI of the BCR and the reporting AI has—

- (i) treated the default risk exposure of such credit derivative contract as zero; and
- (ii) removed such credit derivative contract from the netting set (i.e. the default risk exposure of the netting set is calculated as if the credit derivative contract did not exist),  
the reporting AI is not required to report such credit derivative contracts under columns 1 to 8 in Form IRB\_OBSD\_SACCR<sup>12</sup>;

(b) the total notional amount of derivative contract reported in columns a (i.e. 1a to 8a) is the gross sum of the stated notional amounts<sup>13</sup> of the relevant derivative contracts.

59. For item *A1*—

- (a) report in column b (i.e. 1b to 8b) the replacement cost of a derivative contract calculated in accordance with Division 1A of Part 6A of the BCR by using the formula applicable to the contract. In the case of a sold option whose default risk exposure is set to zero under 226BH(2) or (3) of the BCR, the replacement cost of the option may be reported as zero;
- (b) report in column c (i.e. 1c to 8c) the potential future exposure of the derivative contract calculated in accordance with Division 1A of Part 6A of the BCR by using the formulas applicable to the asset class into which the contract falls. In the case of a sold option whose default risk exposure is set to zero under section 226BH(2) or (3) of the BCR, the potential future exposure of the option may be reported as zero;
- (c) report in columns d(i) and d(ii) (i.e. 1d(i) to 8d(i) and 1d(ii) to 8d(ii)) the default risk exposure of the derivative contract before and after taking into account the CRM effect of recognized guarantees and credit derivative contracts; and
- (d) report the default risk exposure of the derivative contract in one of rows (i) to (iv) by IRB class.

60. The reporting arrangements mentioned in paragraph 59 also apply to item *A2*. Also—

- (a) if the default risk exposure calculated for a margined contract on an unmargined basis is regarded as the default risk exposure of the contract, the default risk exposure calculated on an unmargined basis should be reported in columns d(i) and d(ii) (see section 226BH(1) of the BCR); and
- (b) if more than one derivative contract is covered by a single ***variation margin agreement***—
  - (i) the stated notional amount of each of the derivative contracts should be reported in one of columns a (i.e. 1a to 8a) under item *A2*, as the case requires; and
  - (ii) there is no need to report the replacement cost, potential future exposure and default risk exposure calculated for these contracts by type of contract. The

<sup>12</sup> This is to avoid double counting as the notional amount of the credit derivative contracts is already reflected in the amount reported in Division B (e.g. credit protection covered portion) or Division D (e.g. direct credit substitute).

<sup>13</sup> See paragraph 7(a) of the completion instructions for Form MA(BS)3(IIIb).

amounts calculated under sections 226BE(3), 226BS and 226BE(2) of the BCR should be reported in columns A(i) and A(ii) of item A2 respectively.

61. For item A3, the default risk exposure before and after taking into account the CRM effect of recognized guarantees or credit derivative contracts of a netting set or a group of netting sets, as the case may be, should be reported in columns A(i) and A(ii) respectively. The reporting arrangements mentioned in paragraphs 59(c) and 59(d) and paragraph 60(a) apply to the netting set or the group of netting sets as they apply to a single derivative contract.

62. In relation to group 2b cryptoasset derivative contracts—

- (a) A netting set (or a sub-netting set as referred to in section 377(5) of the BCR) that contains only group 2b cryptoasset derivative contracts should be reported in column 9 as follows—
  - (i) report in column 9a the gross sum of the stated notional amounts of the group 2b cryptoasset derivative contracts;
  - (ii) report in column 9b the replacement cost of the netting set (or sub-netting set) calculated in accordance with section 377(1) and (2) of the BCR;
  - (iii) report in column 9c the potential future exposure of the netting set (or sub-netting set) calculated in accordance with section 377(3) or (4) of the BCR;
  - (iv) report in columns 9d(i) and d(ii) the default risk exposure of the netting set (or sub-netting set) before and after taking into account the CRM effects of guarantees and credit derivative contracts; and
  - (v) report the default risk exposure of the netting set (or sub-netting set) in one of rows (i) to (iv) in the same manner as mentioned in paragraph 59(d).
- (b) To avoid doubt, the default risk exposure in respect of any sub-netting set that contains derivative contracts other than group 2b cryptoasset derivative contracts (see section 377(5) of the BCR) should be reported under columns 1 to 8 of items A1, A2 and A3 in this Form, as applicable.

## **F.2 Form IRB\_OBSD\_SFT\_N\_IMM – Default Risk Exposures in respect of SFTs (Non-IMM(CCR) Approach)**

63. If the reporting AI calculates default risk exposures in respect of SFTs under Division 2B of Part 6A (and, if applicable, Division 3 of Part 12) of the BCR, it should report the exposures so calculated in the appropriate items in Form **IRB\_OBSD\_SFT\_N\_IMM** as follows:

- (a) The principal amount of the assets sold or lent, or the money paid or lent, or the assets or money provided as collateral, by the reporting AI under an SFT, should be reported in column 1a or 2a, as the case requires.
- (b) Under columns 1a, 1b(i) and 1b(ii), if any one of section 226MJ(1)(a), (b)(i) or (b)(ii) is applicable to the reporting AI or its SFT, the AI's SFT should be reported as follows—
  - (i) report in columns 1b(i) and 1b(ii) the default risk exposure of the SFT calculated under section 226MJ of the BCR before and after the CRM effect

of guarantees or credit derivative contracts is taken into account respectively; and

(ii) report the default risk exposure in one of the rows (i) to (iv) by the IRB class for an exposure to the counterparty to the SFT.

(c) Under columns 2a, 2b(i) and 2b(ii), **nettable** SFTs with a counterparty should be reported as follows—

(i) report in columns 2b(i) and 2b(ii) the default risk exposure of the nettable SFTs calculated under section 226MK of the BCR before and after the CRM effect of guarantees or credit derivative contracts is taken into account respectively; and

(ii) report the default risk exposure in one of the rows (i) to (iv) by the IRB class for an exposure to the counterparty to the SFT.

(d) Columns 3a, 3b(i) and 3b(ii) are for reporting the amounts captured under items 1 and 2 that are related to offsetting transactions or CCP-related transactions entered into by the reporting AI with clearing members or clearing clients (see Part IIIe – Annex A and paragraph 5 of the completion instructions for Form MA(BS)3(IIIe) for more information on exposures related to centrally cleared transactions that should be reported in this Form).

(e) If the amounts reported in columns 1a and 2a consist of group 1a, group 1b or **group 2 cryptoassets** delivered by the reporting AI under SFTs to counterparties, the amounts of those cryptoassets should be reported in columns 4a to 4c respectively.

(f) If the amounts of the outward legs of the SFTs reported in columns 1a and 2a consist of SFTs under which group 1a cryptoassets are received by the AI from counterparties, the amounts of the outward legs of those SFTs should be reported in column 5. There is no need to report in column 5 SFTs under which cryptoassets other than group 1a cryptoassets are received.

### **F.3 Form IRB OBSD IMM – Default Risk Exposures (IMM(CCR) Approach)**

64. If the reporting AI uses the IMM(CCR) approach to calculate default risk exposures, it should report the exposures so calculated in the appropriate items in Form **IRB\_OBSD\_IMM**. A reporting AI should compare the portfolio-level RWAs calculated under—

(a) section 226D(1)(a) and (2)(a) of the BCR based on current market data; and

(b) section 226D(1)(b) and (2)(b) of the BCR based on stress calibration.

Only the higher of these amounts will be used in the calculation of the total RWA for credit risk under the IRB approach.

Item no. Nature of item

1. to 7. Items 1 to 7 capture the breakdown of the default risk exposures included in the portfolio-level RWA that will be used in the capital adequacy ratio calculation.

1. to 3. Items 1 to 3 capture transactions—

Item no. Nature of item

- (a) that are not subject to recognized netting; or
- (b) that are required to be treated as a separate netting set under section 226J(1) of the BCR.

If the reporting AI's **IMM(CCR) approval** covers one or more than one of the following categories of transactions:

- (a) derivative contracts (excluding long settlement transactions (LSTs));
- (b) SFTs (excluding LSTs); and
- (c) LSTs,

the AI should report each of its transactions in item 1, 2 or 3 based on the category within which the transaction falls.

1. Derivative contracts (other than LSTs) not subject to recognized netting

2. SFTs (other than LSTs) not subject to recognized netting

3. LSTs not subject to recognized netting

4. to 6. Items 4 to 6 captures transactions—

- (a) that are subject to **valid bilateral netting agreements**; and

- (b) that are not required to be treated as a separate netting set under section 226J(1) of the BCR.

Derivative contracts and SFTs covered by the reporting AI's IMM(CCR) approval should be reported in items 4 and 5 respectively. The amounts reported in these two items will include derivative contracts and SFTs that are LSTs unless these LSTs are not covered by the IMM(CCR) approval.

If the reporting AI's IMM(CCR) approval only covers LSTs, the AI should report the LSTs in item 6.

4. Derivative contracts subject to valid bilateral netting agreement

5. SFTs subject to valid bilateral netting agreement

6. LSTs subject to valid bilateral netting agreement not reported in item 4 or 5

7. Derivative contracts and SFTs subject to valid cross-product netting agreement

This item captures transactions of derivative contracts and SFTs—

- (a) that are subject to **valid cross-product netting agreements**; and
- (b) that are not required to be treated as a separate netting set under section 226J(1) of the BCR.

LSTs are included unless the IMM(CCR) approval of the reporting AI does not cover LSTs.

Item no. Nature of item

1c, 4c and 7c Items 1c, 4c and 7c capture the notional amounts and default risk exposures associated with **group 1a cryptoasset derivative contracts** or **group 1b cryptoasset derivative contracts** out of those reported in items 1, 4 and 7 respectively.

8. CCP-related transactions (including offsetting transactions)

This item is for reporting the amounts captured under items 1 to 7 that are related to offsetting transactions or CCP-related transactions entered into by the reporting AI with clearing members or clearing clients (see Part IIIe – Annex A and paragraph 5 of the completion instructions for Form MA(BS)3(IIIe) for more information on exposures related to centrally cleared transactions that should be reported in Part IIIc).

65. The reporting AI should report the default risk exposures calculated under the IMM(CCR) approach in this Form as follows:

(a) report in each of the column b(i) of items 1 to 7, as the case requires—

- (i) the gross sum of the stated notional amounts of the derivative contracts and LSTs concerned; and
- (ii) the principal amounts of the assets sold, lent or delivered, or the money paid, by the AI to the counterparties under the SFTs and LSTs concerned; and

(b) report in each of column b(ii) and b(iii) of items 1 to 7 the default risk exposures of the netting sets concerned calculated under section 226E of the BCR, including the cases where the netting set only contains one transaction; and

(c) report the breakdown of the amounts by IRB class in rows (i) to (iv).

66. If the amounts reported in columns 1b(i), (ii) and (iii), 4b(i), (ii) and (iii) as well as 7(b)(i), (ii) and (iii) under panel A include amounts associated with group 1a cryptoasset derivative contracts or group 1b cryptoasset derivative contracts, these amounts should be reported in items 1c, 4c and 7c within panel A1 or A2, as applicable.

67. If a netting set contains a credit derivative contract that falls within section 226I of the BCR and the reporting AI has—

- (a) treated the default risk exposure of such credit derivative contract as zero; and
- (b) removed such credit derivative contract from the netting set (i.e. the default risk exposure of the netting set is calculated as if the credit derivative contract did not exist),

the reporting AI is not required to report such credit derivative contract in Form IRB\_OBSD\_IMM.

**Section G: Reporting arrangements for Division F on calculation of expected losses and eligible provisions**

68. Division F contains a single form, Form **IRB\_ELEP**, for reporting information related to the comparison of a reporting AI's **total EL amount** and **total eligible provisions** (EP)

in accordance with sections 220 and 221 of the BCR,<sup>14</sup> including their breakdown by IRB class and IRB subclass and an indication of whether exposures are in default or not.

Item no.      Nature of item

**1.**      **Corporate exposures**

Items 1(a) to (e) capture the EL amount and EP attributable to specialized lending. To determine these amounts, a reporting AI should follow the requirements set out in—

(a) section 220(2) of the BCR for specialized lending that are not under supervisory slotting criteria approach, and

(b) section 220(3) to (5) of the BCR for specialized lending that are under the supervisory slotting criteria approach.

**2.**      **Sovereign exposures**

**3.**      **Bank exposures**

**4.**      **Retail exposures**

**5.**      **Total**

This item captures the reporting AI's total EL amount and total EP referred to in section 220(1)(a) of the BCR.

**6.**      **Deduction from CET1 capital**

This item captures the amount to be deducted from the institution's CET1 capital in accordance with section 43(1)(i) of the BCR where the total EL amount exceeds the total EP.

**7. to 9.**      Items 7 to 9 capture the amount that may be included in the reporting AI's Tier 2 capital when the total EL amount is less than the total EP. Under such a circumstance, the reporting AI may, in accordance with section 42(3)(c) of the BCR, include the difference in its Tier 2 capital subject to a cap of 0.6% of the institution's RWA for credit risk calculated by using the IRB approach.

**7.**      **Surplus provisions**

**8.**      **0.6% of total risk-weighted amount for credit risk (IRB approach)**

This item should be 0.6% x item 7 of Form IRB\_TOTCRWA.

**9.**      **Surplus provisions added to Tier 2 capital**

This item is the lower of the values reported in items 7 and 8.

Hong Kong Monetary Authority  
March 2026

<sup>14</sup> Under section 222(2) of the BCR, a reporting AI must take the EL amount of its CIS exposures to be zero, regardless of the approach used in calculating the RWA of the CIS exposures.

**Annex IIIc-A: Illustrations**

- Below are illustrative examples for the calculation of the RWA under the foundation IRB approach. These examples are reported in the attached returns for the hypothetical Bank XYZ.

**(A) Corporate, Sovereign and Bank Exposures**

- For simplicity, Bank XYZ is assumed to have one internal rating system for all of its corporate, sovereign and bank exposures, comprising 8 obligor grades, each associated with a PD estimate. Tables A and B present the risk-weights for: (a) exposures to corporates with annual sales of HK\$50 Mn that fall within the IRB subclass of small-and-medium sized (SME) corporates, and (b) exposures to corporates classified under the IRB subclass of other corporates, for selected combinations of PD and LGD estimates.

**Table A: Bank XYZ's Internal Rating System for Corporate, Sovereign and Bank Exposures – SME Corporates**  
(M = 2.5 years ; obligor's reported annual sales = HK\$50 Mn)

Grade	Non-defaulted (P) / Defaulted (D)	PD	IRB Risk-Weight (RW)			
			LGD: 75%	LGD:45%	LGD:40%	LGD:35%
1	P	0.05%	25.66%	15.40%	13.69%	11.97%
2	P	0.25%	65.01%	39.01%	34.67%	30.34%
3	P	0.75%	108.57%	65.14%	57.90%	50.67%
4	P	1.50%	136.85%	82.11%	72.99%	63.87%
5	P	3.00%	162.63%	97.58%	86.74%	75.90%
6	P	6.00%	199.14%	119.48%	106.21%	92.93%
7	P	20.00%	314.03%	188.42%	167.48%	146.55%
8	D	100.00%	-	-	-	-

**Table B: Bank XYZ's Internal Rating System for Corporate, Sovereign and Bank Exposures – Other Corporates**  
(M = 2.5 years)

Grade	Non-defaulted (P) / Defaulted (D)	PD	IRB Risk-Weight (RW)			
			LGD: 75%	LGD:45%	LGD:40%	LGD:35%
1	P	0.05%	32.75%	19.65%	17.47%	15.28%
2	P	0.25%	82.45%	49.47%	43.97%	38.48%
3	P	0.75%	137.96%	82.78%	73.58%	64.38%
4	P	1.50%	175.99%	105.59%	93.86%	82.13%
5	P	3.00%	214.07%	128.44%	114.17%	99.90%
6	P	6.00%	266.02%	159.61%	141.88%	124.14%
7	P	20.00%	397.05%	238.23%	211.76%	185.29%
8	D	100.00%	-	-	-	-

**(i) Example 1 (Corporate exposure with on-balance sheet netting)**

Corporate A, classified as grade 5 under the Bank XYZ's internal rating system, borrowed a senior (i.e. not subordinated) loan of HK\$100 Mn from Bank XYZ. Corporate A has also placed a pledged deposit of HK\$10 Mn with Bank XYZ. Both the loan and the pledged deposit are subject to a valid bilateral netting agreement.

Given:

- Corporate A's group total annual sales = HK\$500 Mn
- No currency and maturity mismatch between the loan and the pledged deposit

Workings:

- Estimated PD (grade 5) for Corporate A = 3%
- LGD = 40%
- RW = 114.17%
- M = 2.5 years

(a) Exposures *before* recognized guarantees/credit derivative contracts:

- (1) On-balance sheet exposures before netting = HK\$100 Mn
- (2) On-balance sheet exposures after netting  
= max [0, exposures - liabilities x (1 - H<sub>fx</sub>)]  
= HK\$100 Mn - HK\$10 Mn  
= HK\$90 Mn

(b) Exposures *after* recognized guarantees/credit derivative contracts (on-balance sheet exposures after netting) = HK\$90 Mn (i.e. EAD)

(c) Risk-weighted amount of the exposure to Corporate A  
= EAD x RW  
= HK\$90 Mn x 1.1417  
= HK\$102.753 Mn

(d) EL amount  
= EAD x PD x LGD  
= HK\$90 Mn x 0.03 x 0.40  
= HK\$1.08 Mn

**(ii) Example 2 (SME corporate exposure partially guaranteed by a bank)**

Corporate B, classified as grade 5 under the Bank XYZ's internal rating system, borrowed a subordinated loan of HK\$100 Mn from Bank XYZ. HK\$40 Mn of this exposure is guaranteed by Bank C, classified as grade 2 under the Bank XYZ's internal rating system. The guarantee is regarded as a senior claim on Bank C.

Given:

- Corporate B's group total annual revenue = HK\$50 Mn or below
- No currency and maturity mismatch between the transaction and the guarantee
- The guarantee is a recognized guarantee under the substitution framework

**Workings:**

***Corporate B:***

- Estimated PD (grade 5) for Corporate B = 3%
- LGD of the uncovered portion = 75%
- RW = 162.63%
- M = 2.5 years

- (a) Exposures *before* recognized guarantees/credit derivative contracts (on-balance sheet exposures before/after netting) = HK\$100 Mn
- (b) Exposures *after* recognized guarantees/credit derivative contracts (on-balance sheet exposures after netting)  
= HK\$100 - HK\$40 Mn  
= HK\$60 Mn (i.e. EAD)
- (c) Risk-weighted amount for the uncovered portion of the exposure to Corporate B (i.e. portion not covered by the guarantee issued by Bank C)  
= EAD x RW  
= HK\$60 Mn x 1.6263  
= HK\$97.578 Mn
- (d) EL amount  
= EAD x PD x LGD  
= HK\$60 Mn x 0.03 x 0.75  
= HK\$1.35 Mn

***Bank C:***

- Estimated PD (grade 2) for Bank C = 0.25%
- LGD of the guaranteed portion = 45%
- RW = 49.47%
- M = 2.5 years

- (e) Exposures *after* recognized guarantees/credit derivative contracts (on-balance sheet exposures after netting) = HK\$40 Mn (i.e. EAD)
- (f) Risk-weighted amount of the exposure to Bank C (i.e. the guaranteed portion)  
= EAD x RW  
= HK\$40 Mn x 0.4947  
= HK\$19.788 Mn
- (g) **EL amount**  
= EAD x PD x LGD

$$= \text{HK\$40 Mn} \times 0.0025 \times 0.45$$

$$= \underline{\text{HK\$0.045 Mn}}$$

**(iii) Example 3 (Secured corporate exposure fully guaranteed by a sovereign)**

Corporate D, classified as grade 5 under the Bank XYZ's internal rating system, borrowed a senior loan of HK\$100 Mn from Bank XYZ. The transaction is secured by a BBB rated six-year corporate bond of HK\$40 Mn and another recognized IRB collateral of HK50 Mn. Also, the exposure is fully guaranteed by Central Bank E which is classified as grade 4 under the Bank XYZ's internal rating system.

Given:

- Corporate D's group total annual revenue = HK\$500 Mn
- Haircut for the BBB rated six-year corporate bond (i.e. credit quality grade 3 of residual maturity >5 years) = 12%
- Haircut for recognized IRB collateral = 40%
- No currency and maturity mismatch between the transaction and the collateral/guarantee

Workings:

**Corporate D:**

- Estimated PD (grade 5) for Corporate D = 3%
- $M = 2.5$  years

(a) Exposures before recognized guarantees/credit derivative contracts (on-balance sheet exposures before/after netting) = HK\$100 Mn

(b) Exposures after recognized guarantees/credit derivatives (on-balance sheet exposures after netting)  
= HK\$100 Mn - HK\$100 Mn  
= HK\\$0 Mn

**Central Bank E:**

- Estimated PD (grade 4) for Central Bank E = 1.5%
- $M = 2.5$  years

(c) Exposures after recognized guarantees/credit derivative contracts (on-balance sheet exposures after netting) = HK\$100 Mn (i.e. EAD)

(d) Determination of effective LGD (LGD\*):  
(1) Portion fully secured by recognized financial collateral (E<sub>s,1</sub>):  
=  $C \times (1 - H_c - H_{fx})$   
= HK\$40 Mn  $\times (1 - 0.12 - 0)$

$$= \underline{\text{HK\$35.2 Mn}} \text{ (LGD}_{S,1} = 0\%)$$

(2) Portion fully secured by other recognized IRB collateral (E<sub>S,2</sub>):

$$= C \times (1 - H_c - H_{fx})$$

$$= \text{HK\$50 Mn} \times (1 - 0.4 - 0)$$

$$= \text{HK\$30 Mn} \text{ (LGD}_{S,2} = 25\%)$$

(3) Unsecured portion (E<sub>U</sub>):

$$= \text{HK\$100 Mn} - \text{HK\$35.2 Mn} - \text{HK\$30 Mn}$$

$$= \underline{\text{HK\$34.8 Mn}} \text{ (LGD}_{U} = 45\%)$$

(4) Effective LGD:

$$LGD^* = 45\% \times \frac{34.8}{100} + 0\% \times \frac{35.2}{100} + 25\% \times \frac{30}{100} = 23.16\%$$

(The corresponding RW is 54.35% with PD = 1.5% and LGD = 23.16%)

(e) Risk-weighted amount of the exposure to Central Bank E

$$= EAD \times RW$$

$$= \text{HK\$100 Mn} \times 0.5435$$

$$= \underline{\text{HK\$54.35 Mn}}$$

(f) EL amount

$$= EAD \times PD \times LGD$$

$$= \text{HK\$100 Mn} \times 0.015 \times 0.2316$$

$$= \underline{\text{HK\$0.347 Mn}}$$

**(iv) Example 4 (Clean Corporate exposure in defaulted grade)**

Corporate F, classified as grade 8 (i.e. default) under the Bank XYZ's internal rating system, borrowed a senior unsecured loan of HK\\$100 Mn from Bank XYZ.

Given:

- Specific provisions = HK\\$40 Mn
- Best estimate of EL = 35%

Workings:

- Estimated PD (grade 8) for Corporate F = 100%
- LGD = 40%

(a) Exposures *before/after recognized* guarantees/credit derivative contracts (on-balance sheet exposures before/after netting) = HK\\$100 Mn (i.e. EAD)

(b) Risk-weighted amount of the exposure to Corporate F

$$= \max [0, LGD - EL] \times 12.5 \times EAD$$

$$= (40\% - 35\%) \times 12.5 \times \text{HK\$100 Mn}$$

$$= \underline{\text{HK\$62.5 Mn}}$$

(c) **EL amount**

$$\begin{aligned}
 &= \text{EL} \times \text{EAD} \\
 &= 0.35 \times \text{HK\$100 Mn} \\
 &= \underline{\text{HK\$35 Mn}}
 \end{aligned}$$

**(B) Retail Exposures**

(v) **Example 5 (Qualifying Revolving Retail Exposures (Revolver))**

Bank XYZ is using a separate internal rating system for revolving personal loans, falling within the captioned IRB subclass. The PD and LGD estimates of selected pools of the system are given below.

**Table C: Bank XYZ's Internal Rating System for Revolving Personal Loans**

Pool	Non-defaulted (P) / Defaulted (D)	PD	IRB Risk Weight (RW)		
			LGD: 85%	LGD: 60%	LGD: 50%
1	P	0.10%	5.12%	3.61%	3.01%
2	P	0.25%	10.88%	7.68%	6.40%
3	P	0.75%	26.06%	18.40%	15.33%
4	P	3.00%	73.03%	51.55%	42.96%
5	P	6.00%	116.37%	82.14%	68.45%
6	P	15.00%	196.23%	138.51%	115.43%
7	D	100.00%	-	-	-

Bank XYZ has granted an unsecured revolving loan facility of HK\\$1 Mn to Mr. G, of which HK\\$0.8 Mn has been drawn down and is outstanding. The exposure to Mr. G is classified in the retail pool with a PD estimate of 0.75% (i.e. pool 3) and LGD estimate of 60%.

Given:

- The undrawn portion is unconditionally cancellable with a CCF of 10%
- Estimated PD (grade 3) for Mr. G = 0.75%
- LGD = 60%
- RW = 18.40%

Workings:

(a) Exposures *before/after* recognized guarantees/credit derivative contracts:

- (1) On-balance sheet exposures before/after netting = HK\\$0.8 Mn
- (2) Off-balance sheet exposures (Other than derivative contracts and SFTs)  
= Principal amount x CCF  
= (HK\\$1 Mn - HK\\$0.8 Mn) x 10%  
= HK\\$0.02 Mn

(b) Risk-weighted amount of the exposure to Mr. G:

$$\begin{aligned}
 &= (\text{EAD} \times \text{RW})_{\text{on-balance}} + (\text{EAD} \times \text{RW})_{\text{off-balance}} \\
 &= \text{HK\$}0.8 \text{ Mn} \times 0.184 + \text{HK\$}0.02 \text{ Mn} \times 0.184 \\
 &= \underline{\text{HK\$}0.151 \text{ Mn}}
 \end{aligned}$$

(c) **EL amount**

$$\begin{aligned}
 &= (\text{EAD} \times \text{PD} \times \text{LGD})_{\text{on-balance}} + (\text{EAD} \times \text{PD} \times \text{LGD})_{\text{off-balance}} \\
 &= \text{HK\$}0.8 \text{ Mn} \times 0.0075 \times 0.6 + \text{HK\$}0.02 \text{ Mn} \times 0.0075 \times 0.6 \\
 &= \underline{\text{HK\$}0.004 \text{ Mn}}
 \end{aligned}$$

## (C) Treatment of Expected Losses and Eligible Provisions

### (vi) Example 6

For the calculation of EL and eligible provisions for Bank XYZ's corporate, sovereign, bank and retail exposures, the EL and RWA amounts, as calculated in the examples above, along with the eligible provisions attributed to non-securitization exposures under various IRB subclasses are given below.

Given:

(HK\$ 'mn)

IRB subclasses	EL amount	Eligible provisions	RWA	Related examples
SME corporates	1.35	1.2	97.578	2
Other corporates	1.08 + 0 + 35	40 + 0 + 1	102.753 + 0 + 62.5	1, 3, 4
Sovereigns	0.347	0.35	54.35	3
Banks	0.045	0.05	19.788	2
QRRE (revolver)	0.004	0.005	0.151	5
<b>TOTAL</b>	<b>37.826</b>	<b>42.605</b>	<b>337.12</b>	

Workings:

(a) Total EL amount

$$\begin{aligned}
 &= \sum \text{EL amount attributable to IRB subclass } i \\
 &= \text{HK\$}1.35 \text{ Mn} + (\text{HK\$}1.08 \text{ Mn} + \text{HK\$}35 \text{ Mn}) + \text{HK\$}0.347 \text{ Mn} + \text{HK\$}0.045 \text{ Mn} \\
 &\quad + \text{HK\$}0.004 \text{ Mn} \\
 &= \underline{\text{HK\$}37.826 \text{ Mn}}
 \end{aligned}$$

(b) Total eligible provisions

$$\begin{aligned}
 &= \sum \text{eligible provisions attributable to IRB subclass } i \\
 &= \text{HK\$}1.2 \text{ Mn} + (\text{HK\$}40 \text{ Mn} + \text{HK\$}1 \text{ Mn}) + \text{HK\$}0.35 \text{ Mn} + \text{HK\$}0.05 \text{ Mn} \\
 &\quad + \text{HK\$}0.005 \text{ Mn} \\
 &= \underline{\text{HK\$}42.605 \text{ Mn}}
 \end{aligned}$$

(c) Surplus provisions (the total EL amount is less than the total eligible provisions)<sup>15</sup>  
= HK\$42.605 Mn - HK\$37.826 Mn  
= HK\$4.824 Mn

(d) Surplus provisions to be included in Tier 2 capital  
= Min (surplus provisions, 0.6% x total RWA for credit risk under the IRB Approach)  
= Min (HK\$4.824 Mn, HK\$2.023 Mn)  
= HK\$2.023 Mn

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<sup>15</sup> If the total EL amount exceeds the total eligible provisions, a reporting institution must deduct the difference from the institution's CET1 capital.

**Annex IIIc-B: Illustrative Risk-weights under IRB Approach**

IRB Class / Subclass	Corporate Exposures		Residential Mortgages to individuals		Small Business Retail Exposures and Other Retail Exposures to Individuals		Qualifying Revolving Retail Exposures (Transactor or Revolver)	
<b>LGD:</b>	40%	40%	45%	25%	45%	85%	50%	85%
<b>Maturity 2.5 years</b>								
<b>Annual revenue (HK\$ Mn)</b>	500	50						
<b>PD: 0.05%</b>	17.47%	13.69%	6.23%	3.46%	6.63%	12.52%	1.68%	2.86%
<b>0.10%</b>	26.36%	20.71%	10.69%	5.94%	11.16%	21.08%	3.01%	5.12%
<b>0.25%</b>	43.97%	34.68%	21.30%	11.83%	21.15%	39.96%	6.40%	10.88%
<b>0.40%</b>	55.75%	43.99%	29.94%	16.64%	28.42%	53.69%	9.34%	15.88%
<b>0.50%</b>	61.88%	48.81%	35.08%	19.49%	32.36%	61.13%	11.16%	18.97%
<b>0.75%</b>	73.58%	57.91%	46.46%	25.81%	40.10%	75.74%	15.33%	26.06%
<b>1.00%</b>	82.06%	64.35%	56.40%	31.33%	45.77%	86.46%	19.14%	32.53%
<b>1.30%</b>	89.73%	70.02%	67.00%	37.22%	50.80%	95.95%	23.35%	39.70%
<b>1.50%</b>	93.86%	72.99%	73.45%	40.80%	53.37%	100.81%	25.99%	44.19%
<b>2.00%</b>	102.09%	78.71%	87.94%	48.85%	57.99%	109.53%	32.14%	54.63%
<b>2.50%</b>	108.58%	83.05%	100.64%	55.91%	60.90%	115.03%	37.75%	64.18%
<b>3.00%</b>	114.17%	86.74%	111.99%	62.22%	62.79%	118.61%	42.96%	73.03%
<b>4.00%</b>	124.07%	93.37%	131.63%	73.13%	65.01%	122.80%	52.4%	89.08%
<b>5.00%</b>	133.20%	99.79%	148.22%	82.35%	66.42%	125.45%	60.83%	103.41%
<b>6.00%</b>	141.88%	106.21%	162.52%	90.29%	67.73%	127.94%	68.45%	116.37%
<b>10.00%</b>	171.63%	130.23%	204.41%	113.56%	75.54%	142.69%	93.21%	158.47%
<b>15.00%</b>	196.92%	152.81%	235.72%	130.96%	88.60%	167.36%	115.43%	196.23%
<b>20.00%</b>	211.76%	167.48%	253.12%	140.62%	100.28%	189.41%	131.09%	222.86%

**Note:**

1. The above table provides illustrative risk-weights for exposures within several IRB subclasses of corporate exposures and retail exposures. Each set of risk-weights is produced using the corresponding risk-weight functions set out in Division 5 of Part 6 of the BCR. The inputs used to calculate the illustrative risk weights include measures of PD and LGD and an assumed M of 2.5 years.
2. A firm-size adjustment applies to exposures falling within the IRB subclass of small-and-medium sized corporates in accordance with section 157 of the BCR. For illustration, in determining the risk-weights provided in the second column of corporate exposures, the annual sales of the corporate receiving the exposure is assumed to be HK\$50 million.