

### 139. Interpretation of Part 6

(1) In this Part, unless the context otherwise requires—

“advanced IRB approach” (高級 IRB 計算法) means an approach under which an authorized institution calculates its credit risk for corporate, sovereign or bank exposures by—

- (a) providing its own estimates of the PD, LGD and EAD of those exposures; and
- (b) measuring the M of those exposures, in accordance with Divisions 4, 5, 9, 10 and 11;

“capital floor” (資本下限) means the minimum regulatory capital of an authorized institution calculated in accordance with section 226(2), (3), (4), (5) and (6);

“cash items” (現金項目), in relation to an authorized institution, means all or any of the following—

- (a) legal tender notes or other notes, and coins, representing the lawful currency of a country and held by the institution;
- (b) the institution’s holdings of certificates of indebtedness issued by the Government for the issue of legal tender notes;
- (c) gold bullion held by the institution, or gold bullion held on an allocated basis for the institution by another person, which is backed by gold bullion liabilities;
- (d) gold bullion held by the institution, or gold bullion held for the institution by another person, which is not backed by gold bullion liabilities;
- (e) cheques, drafts and other items drawn on other banks—
  - (i) which are payable to the account of the institution immediately upon presentation; and
  - (ii) which are in the process of collection;
- (f) unsettled clearing items of the institution which are being processed through any interbank clearing system in Hong Kong;
- (g) receivables from transactions in securities (other than repo-style transactions), foreign exchange, and commodities which are not yet due for settlement;
- (h) positive current exposure incurred by the institution under transactions in securities (other than repo-style transactions), foreign exchange, and commodities—
  - (i) which are entered into on a delivery-versus-payment basis; and
  - (ii) which are outstanding after the settlement date for the transaction; or

- (i) the amounts of payment made or the current market value of the thing delivered, and the positive current exposure incurred, by the institution under transactions in securities (other than repo-style transactions), foreign exchange, and commodities—
- (i) which are entered into on a non-delivery-versus-payment basis; and
  - (ii) which are outstanding up to and including the fourth business day after the settlement date for the transaction, where the sum of the amounts of payment made (or the current market value of the thing delivered) and the positive current exposure incurred is less than \$10 million in respect of each such transaction;

“corporate” (法團) means—

- (a) a company; or
- (b) a partnership or any other unincorporated body, which is not a public sector entity, bank or securities firm;

“credit equivalent amount” (信貸等值數額), in relation to an off-balance sheet exposure of an authorized institution, means the value obtained by—

- (a) in the case of an exposure which is not an OTC derivative transaction or credit derivative contract, multiplying the principal amount of the exposure by the applicable CCF;
- (b) in the case of an exposure which is an OTC derivative transaction or credit derivative contract, adding the current exposure of the OTC derivative transaction or credit derivative contract, as the case may be, to the potential exposure of the OTC derivative transaction or credit derivative contract, as the case may be;

“credit risk components” (信用風險組成部分) means the estimates of PD, LGD, EAD, EL and M which constitute inputs into the IRB risk-weight functions to determine the risk-weight to be allocated to—

- (a) corporate, sovereign, bank or retail exposures; or
- (b) if the PD/LGD approach is used, equity exposures;

“dilution risk” (攤薄風險), in relation to a receivable purchased by an authorized institution, means the possibility that the amount of the receivable is reduced through cash or non-cash credits to the obligor in respect of the receivable;

“double default” (雙重違責), in relation to an authorized institution’s exposure to which a recognized guarantee or recognized credit derivative contract relates, means the default of both the obligor and the credit protection provider in respect of the exposure;

“double default framework” (雙重違責框架), in relation to a corporate exposure (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposure (excluding exposure to a sovereign foreign public sector entity) of an authorized institution, means the method set out in section 218 for taking into account the credit risk mitigating effect of a recognized guarantee or recognized credit derivative contract in respect of the exposure;

“EAD” means exposure at default;

“EL” means expected loss;

“EL amount” (EL 額) means expected loss amount;

“eligible provisions” (合資格準備金), in relation to an authorized institution, means the sum of—

(a) the institution’s specific provisions, partial write-offs, regulatory reserve for general banking risks and collective provisions attributed to non-securitization exposures which are subject to the IRB approach; and

(b) any discounts falling within section 163(3) or 164(5) on exposures referred to in paragraph (a) which are in default;

“expected long run loss rate” (預期長期損失率), in relation to a pool of retail exposures of an authorized institution, means a loss rate calculated based on the realized losses over the total outstanding amount of exposures which fall within the pool of retail exposures, measured over a period of time which is not less than the period required under section 178(1)(g);

“expected loss” (預期損失), in relation to an exposure of an authorized institution, means the estimated loss likely to be incurred by the institution on the exposure arising from the potential default of the obligor or dilution risk in respect of the exposure over a one-year period, expressed as a ratio, relative to the EAD of the exposure;

“expected loss amount” (預期損失額), in relation to an exposure of an authorized institution, means the expected loss amount of the exposure calculated by multiplying the EL of the exposure by the EAD of the exposure;

“exposure” (風險承擔), in relation to an authorized institution, means a credit exposure (including an asset) of the institution;

“exposure at default” (違責風險承擔), in relation to an exposure of an authorized institution, means the expected amount (being, in the case of an off-balance sheet exposure, the credit equivalent amount) of the exposure upon the default of the obligor in respect of the exposure, which is measured without deduction of specific provisions and partial write-offs;

“facility grade” (融通等級), in relation to an authorized institution, means a rating of loss severity in the event of default within the facility rating scale of the institution’s rating system, as measured by LGD, to which exposures are assigned on the basis of a specified and distinct set of internal rating criteria;

“facility type” (融通類型), in relation to an authorized institution, means a type of exposures with identical or similar transaction characteristics;

“financial firm” (金融商號), in relation to the recognition of a guarantee or credit derivative contract in respect of an exposure of an authorized institution under the double default framework, means—

- (a) a bank;
- (b) a securities firm;
- (c) an insurance firm; or
- (d) a corporate which has an ECAI issuer rating which, if mapped to the scale of credit quality grades in Table C in Schedule 6, would result in the corporate being assigned a credit quality grade of 1, 2 or 3,

which—

- (e) has provided, in the normal course of business, credit protection for the exposure where the credit protection concerned is not the subject of any counter-guarantee given by a sovereign;
- (f) has had an exposure to it assigned by the institution, at the time the credit protection was first provided or for any period of time thereafter, to an obligor grade with an estimate of PD which, if mapped to the scale of credit quality grades for banks and securities firms in Table B in Schedule 6 or corporates in Table C in Schedule 6, as the case may be, would result in the entity being assigned a credit quality grade of 1 or 2; and
- (g) currently has an exposure to it assigned by the institution to an obligor grade with an estimate of PD which, if mapped to the scale of credit quality grades for banks and securities firms in Table B in Schedule 6 or corporates in Table C in Schedule 6, as the case may be, would result in the entity being assigned a credit quality grade of 1, 2 or 3;

“foundation IRB approach” (基礎 IRB 計算法) means an approach under which an authorized institution calculates its credit risk for corporate, sovereign or bank exposures by—

- (a) providing its own estimates of the PD of those exposures; and
- (b) using supervisory estimates for the other credit risk components of those exposures,

in accordance with Divisions 4, 5, 9, 10 and 11;

- “hedged exposure” (對沖風險承擔) means a corporate exposure (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposure (excluding exposure to a sovereign foreign public sector entity) of an authorized institution which is covered by a recognized guarantee or recognized credit derivative contract under the double default framework;
- “internal models method” (內部模式方法) means a method under which an authorized institution calculates its credit risk for equity exposures as set out in section 186;
- “IRB class” (IRB 類別) means a class of non-securitization exposures specified in Table 16 (including the IRB subclasses which fall within that class);
- “IRB subclass” (IRB 子類別) means a subclass of non-securitization exposures specified in Table 16;
- “LGD” means loss given default;
- “loss given default” (違責損失率), in relation to an exposure of an authorized institution, means the loss likely to be incurred by the institution upon the default of the obligor in respect of the exposure, expressed as a ratio, relative to the EAD of the exposure;
- “M” means maturity;
- “market-based approach” (市場基準計算法) means—
- (a) the internal models method; or
  - (b) the simple risk-weight method;
- “maturity” (到期期限)—
- (a) in relation to a corporate, sovereign or bank exposure of an authorized institution which uses the foundation IRB approach or advanced IRB approach, means the effective maturity of the exposure as determined or calculated in accordance with section 167, 168 or 169, as the case requires;
  - (b) in relation to an equity exposure of an authorized institution which uses the PD/LGD approach, means the effective maturity of the exposure as specified in section 194(1)(d);
- “obligor grade” (承擔義務人等級), in relation to an authorized institution, means a rating within the obligor rating scale of the institution’s rating system representing an assessment of the risk of default to which exposures to obligors are assigned on the basis of a specified and distinct set of internal rating criteria and from which estimates of PD are derived;
- “PD” means probability of default;
- “PD/LGD approach” (PD/LGD 計算法) means an approach under which an authorized institution calculates its credit risk for equity exposures as set out in sections 187, 188, 189, 190, 191, 192, 193 and 194;
- “pool” (組別) means a category of exposures which have—
- (a) similar obligor and transaction characteristics; and
  - (b) identical estimates of PD, LGD and EAD;

“principal amount” (本金額)—

- (a) in relation to an on-balance sheet exposure of an authorized institution, means the book value (including accrued interest) of the exposure;
- (b) in relation to an off-balance sheet exposure of an authorized institution, means—
  - (i) subject to subparagraph (ii), in the case of an exposure listed in Table 11, the notional amount of the exposure;
  - (ii) in the case of an exposure listed in Table 11 where the stated notional amount of the exposure is leveraged or enhanced by the structure of the exposure, the effective notional amount of the exposure taking into account that the stated notional amount is so leveraged or enhanced, as the case may be;
  - (iii) subject to subparagraph (iv), in the case of an exposure listed in Table 20, the contracted amount of the exposure;
  - (iv) in the case of an exposure listed in Table 20 which is an undrawn facility or the undrawn portion of a partially drawn facility, the amount of the undrawn commitment;

“probability of default” (違責或然率), in relation to an exposure of an authorized institution, means the probability of default of the obligor in respect of the exposure over a one-year period;

“rating system” (評級系統) means all the methods, models, processes, controls, and data collection and information technology systems, used by an authorized institution which enable the assessment of credit risk, the assignment of internal credit risk ratings, and the quantification of default and loss estimates, by the institution;

“re-ageing” (重新確定帳齡) means a process by which an exposure of an authorized institution previously classified as a past due exposure, the terms of which have not been changed, is subsequently classified as performing by reason of the subsequent good performance of the obligor in respect of the exposure, notwithstanding that all outstanding arrears in respect of the exposure have not been repaid;

“recognized collateral” (認可抵押品)—

- (a) in relation to an authorized institution which uses the foundation IRB approach to calculate its credit risk for corporate, sovereign or bank exposures, means—
  - (i) recognized financial collateral;
  - (ii) recognized IRB collateral;
- (b) in relation to an authorized institution which uses the advanced IRB approach to calculate its credit risk for corporate, sovereign or bank exposures or the retail IRB approach to calculate its credit risk for retail exposures, means any collateral—

- (i) which is recognized by the institution for credit risk mitigation in accordance with its policies and procedures; and
- (ii) which satisfy the requirements under section 77(a), (b), (c), (d), (e) and (f);

“recognized credit derivative contract” (認可信用衍生工具合約)—

- (a) in relation to an authorized institution which uses the substitution framework to take into account the credit risk mitigating effect of credit derivative contracts for its corporate, sovereign, bank, retail or equity exposures, means a credit derivative contract which falls within section 211 or 212, as the case requires;
- (b) in relation to an authorized institution which uses the double default framework to take into account the credit risk mitigating effect of credit derivative contracts for its corporate exposures (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposures (excluding exposures to sovereign foreign public sector entities), means a credit derivative contract which falls within section 213;

“recognized financial collateral” (認可財務抵押品) means any collateral (except collateral in the form of real property) which falls within the description of section 80(a), (b), (c) or (d);

“recognized guarantee” (認可擔保)—

- (a) in relation to an authorized institution which uses the substitution framework to take into account the credit risk mitigating effect of guarantees for its corporate, sovereign, bank, retail or equity exposures, means a guarantee which falls within section 211 or 212, as the case requires;
- (b) in relation to an authorized institution which uses the double default framework to take into account the credit risk mitigating effect of guarantees for its corporate exposures (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposures (excluding exposures to sovereign foreign public sector entities), means a guarantee which falls within section 213;

“recognized IRB collateral” (認可 IRB 抵押品) means any collateral in the form of—

- (a) financial receivables which fall within section 205;
- (b) commercial real estate or residential real estate which falls within section 206 or 208, as the case requires; or
- (c) physical assets (except commercial real estate or residential real estate) which fall within section 207 or 208, as the case requires;

- “residual value risk” (剩餘價值風險), in relation to a leasing arrangement entered into by an authorized institution, means the institution’s exposure to potential loss due to the fair value of the leased asset declining below the residual value estimated for the leased asset at the time of inception of the lease;
- “retail IRB approach” (零售 IRB 計算法) means an approach under which an authorized institution calculates its credit risk for retail exposures in accordance with Divisions 4, 6, 9, 10 and 11;
- “revolving” (循環), in relation to a retail exposure of an authorized institution, means that the borrower’s outstanding balance is permitted to fluctuate based on the borrower’s decisions to borrow and repay, up to a limit established by the institution;
- “risk-weight function” (風險權重函數) means a formula used by an authorized institution to determine the risk-weight to be allocated to—
- (a) a corporate, sovereign, bank or retail exposure of the institution;
  - or
  - (b) an equity exposure of the institution if the institution uses the PD/LGD approach;
- “seasoning” (季節性因素), in relation to an exposure of an authorized institution, means an expected change of risk parameters over the contractual period of the exposure;
- “simple risk-weight method” (簡單風險權重方法) means a method under which an authorized institution calculates its credit risk for equity exposures as set out in section 185;
- “specialized lending” (專門性借貸) means an exposure of an authorized institution to a corporate owning or operating a specific asset—
- (a) the terms of which give the institution a substantial degree of control over the specific asset and the income which the specific asset generates; and
  - (b) the primary source of repayment of which is the income generated by the specific asset;
- “specific risk-weight approach” (特定風險權重計算法) means an approach under which an authorized institution calculates its credit risk in accordance with Division 8 for non-securitization exposures which do not fall within the IRB class of corporate, sovereign, bank, retail or equity exposures;
- “substitution framework” (替代框架), in relation to an exposure of an authorized institution, means the method set out in sections 215, 216 and 217 for taking into account the credit risk mitigating effect of a recognized guarantee or recognized credit derivative contract;
- “supervisory estimate” (監管性估計), in relation to an exposure of an authorized institution, means—



(a) the risk-weight specified in this Part in respect of the exposure;  
or

(b) the value specified in this Part of a credit risk component to be input into a risk-weight function to calculate the risk-weight to be allocated to the exposure under the use of the IRB approach;

“supervisory slotting criteria approach” (監管分類準則計算法) means an approach under which an authorized institution calculates its credit risk for specialized lending in accordance with section 158(2);

“total EL amount” (EL 總額), in relation to an authorized institution, means the sum of the institution’s EL amounts attributed to corporate, sovereign, bank and retail exposures of the institution which—

(a) are subject to the IRB approach; and

(b) are not treated as hedged exposures under the double default framework;

“total eligible provisions” (合資格準備金總額), in relation to an authorized institution, means the sum of the institution’s eligible provisions attributed to corporate, sovereign, bank and retail exposures of the institution which—

(a) are subject to the IRB approach; and

(b) are not treated as hedged exposures under the double default framework;

“unhedged exposure” (無對沖風險承擔) means a corporate exposure (excluding specialized lending under supervisory slotting criteria approach) or public sector entity exposure (excluding exposure to a sovereign foreign public sector entity) of an authorized institution which is not a hedged exposure under the double default framework.

(2) For the purposes of an authorized institution calculating, in respect of an exposure of the institution, the EL or PD over a one-year period pursuant to these Rules, it shall be sufficient if the institution calculates its credit risk using the latest estimates of the EL or PD, as the case may be, made or generated at any time within the past 12 months if the institution has not received information which causes, or which could reasonably be expected to cause, the institution to consider there may have been a material variation in the EL or PD of the exposure, as the case may be (in which case the institution shall not use those estimates in such calculation).

(3) For the purposes of this Part, a reference to specialized lending under supervisory slotting criteria approach means specialized lending risk-weighted by mapping, pursuant to section 158(2), to the 5 supervisory rating grades set out in Table 18.

**Division 2—Calculation of credit risk under IRB approach,  
exposures to be covered in calculation,  
and classification of exposures**

**140. Calculation of risk-weighted amount of exposures**

(1) Subject to subsection (2) and section 141, an authorized institution shall calculate the risk-weighted amount of the institution's exposure to credit risk by—

- (a) subject to paragraph (b), multiplying the EAD of the exposure by the exposure's relevant risk-weight;
- (b) in the case of an equity exposure in respect of which—
  - (i) the institution uses the internal models method; and
  - (ii) the relevant risk-weight set out in section 186(3)(a)(ii) does not apply,multiplying the potential loss of the equity exposure as calculated using the institution's internal models by 12.5 in accordance with section 186; and
- (c) aggregating the figures derived under paragraphs (a) and (b).

(2) An authorized institution may reduce the risk-weighted amount of an exposure by taking into account the effect of any recognized credit risk mitigation in respect of the exposure in accordance with Division 10.

**141. Exposures to be covered**

Subject to section 12, an authorized institution shall, in accordance with this Part, take into account and risk-weight—

- (a) all of the institution's exposures booked in its banking book except such exposures—
  - (i) which under sections 48 and 49 are required to be deducted from any of the institution's core capital and supplementary capital; or
  - (ii) which are subject to the requirements of Part 7; and
- (b) all of the institution's exposures to counterparties under credit derivative contracts, OTC derivative transactions or repo-style transactions, booked in its trading book.

**142. Classification of exposures**

(1) Subject to subsections (2) and (3), an authorized institution shall, in accordance with sections 143, 144, 145 and 146—

- (a) classify each of its exposures which fall within section 141 into one only of the 6 IRB classes specified in column 2 of Table 16; and
- (b) then, classify the exposures into one only of the 25 IRB subclasses specified in column 3 of Table 16.

TABLE 16

CLASSES AND SUBCLASSES OF EXPOSURES UNDER  
IRB APPROACH

Item	IRB class	IRB subclass
1.	Corporate exposures	<ul style="list-style-type: none"> <li>(a) Specialized lending under supervisory slotting criteria approach (project finance)</li> <li>(b) Specialized lending under supervisory slotting criteria approach (object finance)</li> <li>(c) Specialized lending under supervisory slotting criteria approach (commodities finance)</li> <li>(d) Specialized lending under supervisory slotting criteria approach (income-producing real estate)</li> <li>(e) Small-and-medium sized corporates</li> <li>(f) Other corporates</li> </ul>
2.	Sovereign exposures	<ul style="list-style-type: none"> <li>(a) Sovereigns</li> <li>(b) Sovereign foreign public sector entities</li> <li>(c) Multilateral development banks</li> </ul>
3.	Bank exposures	<ul style="list-style-type: none"> <li>(a) Banks</li> <li>(b) Securities firms</li> <li>(c) Public sector entities (excluding sovereign foreign public sector entities)</li> </ul>
4.	Retail exposures	<ul style="list-style-type: none"> <li>(a) Small business retail exposures</li> <li>(b) Residential mortgages to individuals</li> </ul>

Item	IRB class	IRB subclass
5.	Equity exposures	<ul style="list-style-type: none"> <li data-bbox="733 263 1398 345">(c) Residential mortgages to property-holding shell companies</li> <li data-bbox="733 351 1398 393">(d) Qualifying revolving retail exposures</li> <li data-bbox="733 400 1398 442">(e) Other retail exposures to individuals</li> <li data-bbox="733 466 1398 588">(a) Equity exposures under market-based approach (simple risk-weight method)</li> <li data-bbox="733 595 1398 716">(b) Equity exposures under market-based approach (internal models method)</li> <li data-bbox="733 723 1398 887">(c) Equity exposures under PD/LGD approach (publicly traded equity exposures held for long-term investment)</li> <li data-bbox="733 893 1398 1057">(d) Equity exposures under PD/LGD approach (privately owned equity exposures held for long-term investment)</li> <li data-bbox="733 1063 1398 1185">(e) Equity exposures under PD/LGD approach (other publicly traded equity exposures)</li> <li data-bbox="733 1192 1398 1285">(f) Equity exposures under PD/LGD approach (other equity exposures)</li> </ul>
6.	Other exposures	<ul style="list-style-type: none"> <li data-bbox="733 1307 997 1349">(a) Cash items</li> <li data-bbox="733 1355 997 1391">(b) Other items</li> </ul>

(2) For the purposes of complying with subsection (1), an authorized institution shall demonstrate to the satisfaction of the Monetary Authority that its methodology for classifying, in accordance with that subsection, exposures referred to in that subsection is reliable and consistent over time.

(3) Where an exposure of an authorized institution which has been classified under subsection (1) would, if section 143(3) or 144(2) or (4)(c) were to apply to it at any time subsequently, be reclassified under that subsection, the institution shall so reclassify the exposure unless—

- (a) in the case of an exposure denominated in a currency other than Hong Kong dollars, the exposure's falling within, or failure to remain within, the value threshold or exposure limit specified in that section arises solely as a result of short-term exchange rate fluctuations; or

- (b) the outstanding balance of the exposure falls within the value threshold or exposure limit specified in that section primarily because of—
  - (i) repayments made by the obligor in respect of the exposure; or
  - (ii) write-offs made by the institution in respect of the outstanding balance of the exposure.

### 143. Corporate exposures

- (1) For the purposes of section 142(1) as read with Table 16—
  - (a) an authorized institution's specialized lending shall fall within project finance if the institution looks primarily to the revenue generated by a single project funded by the lending, both as the source of repayment of, and as collateral for, the lending;
  - (b) an authorized institution's specialized lending shall fall within object finance if the lending funds the acquisition of physical assets and the repayment of the lending is dependent on the cash flows generated by the assets which have been financed and pledged or assigned to the institution;
  - (c) an authorized institution's specialized lending shall fall within commodities finance if the lending is structured short-term lending to finance reserves, inventories, or receivables of exchange-traded commodities (including gold), and—
    - (i) the repayment of the lending will be from the proceeds of the sale of the commodities (including gold); and
    - (ii) the obligor in respect of the exposure has no independent capacity to repay the lending;
  - (d) an authorized institution's specialized lending shall fall within income-producing real estate if the lending funds the acquisition of real estate and the prospects for repayment and recovery of the lending depend primarily on the cash flows generated by the real estate acquired.

(2) Where an authorized institution is not able to estimate the credit risk components as required in this Part for corporate exposures in respect of the institution's specialized lending, the institution shall use the supervisory slotting criteria approach to calculate the risk-weighted amount of such specialized lending in accordance with section 158(2).

(3) Subject to subsection (4), for the purposes of section 142(1) as read with Table 16, an authorized institution may only classify an exposure to a corporate as a corporate exposure which falls within the IRB subclass of small-and-medium sized corporates if—

- (a) subject to paragraphs (b) and (c), the corporate concerned has a reported total annual revenue, in its latest annual financial statements, of less than \$500 million;
- (b) subject to paragraph (c), in any case where the corporate concerned is a member of a group of companies, the group of companies has a consolidated reported total annual revenue, in the group's latest consolidated annual financial statements, of less than \$500 million;
- (c) in any case where the corporate concerned is consolidated with other corporates by the institution for risk management purposes, the aggregate of the reported total annual revenue, in the latest annual financial statements of the corporate concerned and the other corporates, is less than \$500 million.

(4) Where an authorized institution demonstrates to the satisfaction of the Monetary Authority, in respect of a corporate to which the institution has an exposure, that the corporate's scale of business is not accurately reflected in the corporate's total annual revenue, the institution may, with the prior consent of the Monetary Authority, substitute the corporate's total assets for total annual revenue in determining whether the exposure falls within subsection (3) in respect of that corporate.

(5) For the purposes of section 142(1) as read with Table 16, an authorized institution shall classify all of its exposures to corporates which do not fall within—

- (a) the IRB subclass of specialized lending under supervisory slotting criteria approach pursuant to subsection (2);
- (b) the IRB subclass of small-and-medium sized corporates pursuant to subsection (3);
- (c) the IRB subclass of small business retail exposures pursuant to section 144(2); or
- (d) the IRB subclass of residential mortgages to property-holding shell companies pursuant to section 144(3)(b),

as exposures which fall within the IRB subclass of other corporates.

#### **144. Retail exposures**

(1) For the purposes of section 142(1) as read with Table 16, an authorized institution may only classify an exposure as a retail exposure which falls within the IRB subclass of small business retail exposures, residential mortgages to individuals, residential mortgages to property-holding shell companies, qualifying revolving retail exposures, or other retail exposures to individuals, as the case may be, if the exposure is included in a pool of exposures managed by the institution on a pooled or portfolio basis.

(2) Subject to subsection (1), for the purposes of section 142(1) as read with Table 16, an authorized institution may only classify an exposure to a corporate as a retail exposure which falls within the IRB subclass of small business retail exposures if the total exposure of the institution or its consolidation group to—

- (a) subject to paragraph (b), the corporate;
- (b) if applicable—
  - (i) a group of companies of which the corporate is a member; or
  - (ii) the corporate and other persons (including individuals) which are consolidated by the institution with the corporate for risk management purposes,

is less than \$10 million.

(3) Subject to subsection (1), for the purposes of section 142(1) as read with Table 16—

- (a) an authorized institution shall classify a residential mortgage loan to one or more than one individual as a retail exposure which falls within the IRB subclass of residential mortgages to individuals where the property securing the residential mortgage loan concerned is used, or intended for use, as the residence of the borrower or as the residence of a tenant, or a licensee, of the borrower;
- (b) an authorized institution shall classify a residential mortgage loan to a property-holding shell company as a retail exposure which falls within the IRB subclass of residential mortgages to property-holding shell companies where—
  - (i) the property securing the residential mortgage loan concerned is used, or intended for use, as the residence of one or more than one director or shareholder of the property-holding shell company or as the residence of a tenant, or a licensee, of the property-holding shell company;
  - (ii) all of the borrowed-monies obligations of the property-holding shell company arising under the residential mortgage loan concerned are the subject of a personal guarantee—
    - (A) which is entered into by one or more than one director or shareholder of the property-holding shell company (referred to in this paragraph as “guarantor”); and
    - (B) which fully and effectively covers those obligations;

- (iii) the institution, having due regard to the guarantor's financial obligations (including, in particular, all the guarantor's borrowed-moneys obligations and obligations of suretyship), is satisfied that the guarantor is able to perform all the guarantor's obligations under the guarantee; and
- (iv) the residential mortgage loan concerned made available to the property-holding shell company has been assessed by reference to substantially similar credit underwriting standards (including loan purpose, and loan-to-value and debt-service ratios) as would normally be applied by the institution to an individual.

(4) Subject to subsection (1), for the purposes of section 142(1) as read with Table 16, an authorized institution shall classify an exposure as a retail exposure which falls within the IRB subclass of qualifying revolving retail exposures if—

- (a) the exposure is revolving, unsecured, and unconditionally cancellable (both contractually and in practice) by the institution;
- (b) the exposure is to one or more than one individual and not explicitly for business purposes;
- (c) the exposure is not more than \$1 million;
- (d) the exposure belongs to a pool of exposures which have exhibited, in comparison with other IRB subclasses of retail exposures, low loss rate volatility, relative to the institution's average level of loss rates for retail exposures, especially within the pools to which low estimates of PD are attributed;
- (e) data on loss rates for qualifying revolving retail exposures are retained by the institution in order to allow analysis of the volatility of loss rates; and
- (f) treatment of the exposure as falling within the IRB subclass of qualifying revolving retail exposures is consistent with the underlying risk characteristics of the exposure.

(5) Subject to subsections (1) and (6), for the purposes of section 142(1) as read with Table 16, an authorized institution shall classify all of its exposures to individuals which do not fall within—

- (a) the IRB subclass of residential mortgages to individuals; or
  - (b) the IRB subclass of qualifying revolving retail exposures,
- as exposures which fall within the IRB subclass of other retail exposures to individuals.

(6) An authorized institution shall treat any of its exposures to individuals which are not managed by the institution on a pooled or portfolio basis in accordance with subsection (1) as corporate exposures.



**145. Equity exposures**

- (1) For the purposes of section 142(1) as read with Table 16—
  - (a) subject to paragraphs (b) and (c) and subsection (2), an authorized institution shall classify under the IRB class of equity exposures all of its direct and indirect equity interests (whether voting or non-voting) in a corporate where those interests are not consolidated or deducted for the purposes of determining the institution's capital base in accordance with Part 3;
  - (b) an authorized institution shall classify under the IRB class of equity exposures—
    - (i) holdings of any share issued by a corporate;
    - (ii) holdings of any equity contract;
    - (iii) holdings in any collective investment scheme which is engaged principally in the business of investing in equity interests;
    - (iv) holdings of any instrument which would satisfy the requirements set out in section 38 for inclusion in the institution's core capital if the instrument were issued by the institution;
    - (v) holdings of any instrument—
      - (A) which is irredeemable;
      - (B) which does not embody an obligation on the part of the issuer except an obligation which falls within subparagraph (vi); and
      - (C) which conveys a residual claim on the assets or income of the issuer;
    - (vi) holdings of any instrument which embodies an obligation on the part of the issuer and in respect of which—
      - (A) the issuer may indefinitely defer the settlement of the obligation;
      - (B) the obligation requires (or permits at the issuer's discretion) settlement by the issuance of a fixed number of the issuer's equity shares;
      - (C) the obligation requires (or permits at the issuer's discretion) settlement by the issuance of a variable number of the issuer's equity shares and, other things being equal, any change in the value of the obligation is attributable to, comparable to, and in the same direction as, the change in the value of a fixed number of the issuer's equity shares; or

- (D) the institution has the option to require that the obligation be settled in equity shares unless the institution demonstrates to the satisfaction of the Monetary Authority that—
- (I) in the case of a traded instrument, the instrument trades more like debt of the issuer than equity; or
  - (II) in the case of a non-traded instrument, the instrument should be treated as a debt holding;
- (vii) holdings of any debt obligation, share, derivative contract, investment scheme or instrument, which is structured with the intent of conveying the economic substance of equity interests; and
- (viii) any of the institution's liabilities on which the return is linked to that of equity interests; and
- (c) an authorized institution shall not classify under the IRB class of equity exposures any equity holding which is structured with the intent of conveying the economic substance of debt holdings or securitization exposures.

(2) The Monetary Authority may, by notice in writing given to an authorized institution, require the institution to treat a debt holding of the institution as an equity exposure for the purposes of calculating the institution's credit risk if the Monetary Authority is satisfied that the nature and economic substance of the debt holding are such that the debt holding should more realistically be characterized as an equity exposure than as a debt holding.

(3) An authorized institution shall comply with the requirements of a notice given to it under subsection (2).

#### **146. Other exposures**

(1) For the purposes of section 142(1) as read with Table 16, an authorized institution shall classify under the IRB class of other exposures any of the institution's exposures which do not fall within the IRB class of corporate, sovereign, bank, retail or equity exposures.

(2) For the purposes of section 142(1) as read with Table 16, an authorized institution shall classify under the IRB subclass of other items any of the institution's other exposures which do not fall within the IRB subclass of cash items.

### Division 3—IRB calculation approaches

#### 147. IRB calculation approaches

(1) Subject to subsections (2) and (3), an authorized institution shall, for the purposes of calculating the risk-weighted amount of its exposures, select IRB calculation approaches from the range of IRB calculation approaches set out in Table 17 available for each of the 6 IRB classes.

TABLE 17

#### IRB CALCULATION APPROACHES

Item	IRB class	IRB calculation approach
1.	Corporate exposures	(a) Foundation IRB approach (b) Advanced IRB approach (c) Supervisory slotting criteria approach
2.	Sovereign exposures	(a) Foundation IRB approach (b) Advanced IRB approach
3.	Bank exposures	(a) Foundation IRB approach (b) Advanced IRB approach
4.	Retail exposures	Retail IRB approach
5.	Equity exposures	(a) Market-based approach: simple risk-weight method (b) Market-based approach: internal models method (c) PD/LGD approach
6.	Other exposures	Specific risk-weight approach

(2) An authorized institution shall not select an IRB calculation approach set out in Table 17 unless the institution satisfies the requirements specified in this Part applicable to or in relation to that IRB calculation approach.

(3) Where, under these Rules, an authorized institution may use more than one IRB calculation approach set out in Table 17 to calculate its credit risk for exposures which fall within an IRB class, the institution shall not, except with the prior consent of the Monetary Authority—

- (a) use more than one such IRB calculation approach to calculate its credit risk for exposures which fall within that IRB class; or
  - (b) discontinue using one such IRB calculation approach, and commence using another such IRB calculation approach, to calculate its credit risk for exposures which fall within that IRB class.
- (4) An authorized institution shall—
- (a) subject to paragraphs (b) and (c), only use more than one rating system for exposures which fall within an IRB class if the institution demonstrates to the satisfaction of the Monetary Authority that the rating systems concerned are necessary having regard to the characteristics and complexity of those exposures;
  - (b) only assign an exposure to a rating system referred to in paragraph (a) if that rating system accurately reflects the level of credit risk of the exposure; and
  - (c) document the reason for assigning an exposure to a particular rating system.

#### **Division 4—Risk-weighting framework under IRB approach**

#### **148. General requirements for estimation of probability of default, loss given default and exposure at default**

An authorized institution shall, for the purposes of making estimates of PD and, where relevant, LGD and EAD (collectively referred to in this Division as “estimates”)—

- (a) conduct periodic assessments of its risk quantification process and update the process as necessary to ensure that new data and analytical techniques and evolving industry practices are incorporated into the process;
- (b) update the institution’s estimates produced by the institution’s risk quantification process not less than once in every 12 months;
- (c) base the institution’s estimates on historical experience and empirical evidence and not only on subjective or judgmental considerations, take into account all relevant data and information available and use appropriate methods;

- (d) demonstrate to the satisfaction of the Monetary Authority that the data the institution uses in its estimates (whether internal data or external data, or both)—
  - (i) are representative of its long run default experience and long run loss experience (covering a period which captures a reasonable mix of high-default and low-default years of at least one economic cycle); and
  - (ii) are based on economic or market conditions which are relevant to current and foreseeable economic or market conditions;
- (e) ensure that adjustments to the estimates, based on data which fall within paragraph (d)—
  - (i) are only made or approved by officers of the institution with the necessary experience and expertise to make or approve such adjustments and who have been authorized by the institution to make or approve such adjustments; and
  - (ii) form part of the institution's risk quantification process and are based on the exercise in good faith of judgment by officers who fall within subparagraph (i) and are not biased towards reducing the institution's regulatory capital for credit risk; and
- (f) demonstrate to the satisfaction of the Monetary Authority that the institution has—
  - (i) a set of procedures to evaluate the appropriateness of the method or data used in making the estimates; and
  - (ii) a mechanism for increasing the estimates when the evaluation referred to in subparagraph (i) indicates that the estimates fail to satisfy the institution's internal standards on the accuracy of estimates used by the institution.

#### **149. Default of obligor**

- (1) For the purposes of this Part, a default of the obligor in respect of an exposure of an authorized institution has occurred if—
- (a) the institution considers that the obligor is unlikely to pay in full the obligor's credit obligations to the institution (or to any member of the consolidation group of the institution) without recourse by the institution to realizing any collateral held by the institution or taking any other action in respect of the exposure; or

(b) subject to subsections (2), (3) and (8), the obligor is past due for more than 90 days in respect of the payment of any material portion of all of the obligor's outstanding credit obligations to the institution (or to any member of the consolidation group of the institution).

(2) Where the obligor in respect of a retail exposure is past due for more than 90 days in respect of any payment owing by the obligor in respect of that exposure—

(a) subject to paragraph (b), an authorized institution shall treat the exposure as being in default and shall not apply subsection (1)(b) to the obligor;

(b) the institution shall disregard paragraph (a) if the obligor is also past due for more than 90 days in respect of any payment owing by the obligor in respect of any other exposure which is not a retail exposure.

(3) For the purposes of subsections (1)(b) and (2), an overdraft provided by an authorized institution to an obligor (being a borrower under the overdraft) is past due if—

(a) the obligor has breached a maximum limit which was set by the institution, and the institution has advised the obligor of the maximum limit;

(b) the institution has advised the obligor of a maximum limit which is less than the current outstanding balance of the overdraft; or

(c) the overdraft is not authorized by the institution.

(4) Subject to subsection (5), where an authorized institution intends to use, for a particular IRB class or IRB subclass of the institution, the default criteria (not being the prescribed default criteria) set by the relevant banking supervisory authority of the institution's parent bank, the institution shall not use those default criteria except with the prior consent of the Monetary Authority.

(5) The Monetary Authority shall not give an authorized institution the consent referred to in subsection (4) to use the default criteria referred to in that subsection in respect of a particular IRB class or IRB subclass of the institution unless the institution demonstrates to the satisfaction of the Monetary Authority that the differences between those default criteria and the prescribed default criteria will not materially affect the accuracy of the estimates generated by the institution's rating system.

(6) Subject to subsection (7), an authorized institution shall—

(a) keep a record of defaults in exposures of the institution using the prescribed default criteria;

(b) use the prescribed default criteria to generate the estimates from the institution's rating system; and

(c) only use internal data or external data which are inconsistent with the prescribed default criteria if the institution demonstrates to the satisfaction of the Monetary Authority that it has made adjustments to the data such that the data are consistent with the prescribed default criteria.

(7) Subsection (6) applies to and in relation to an authorized institution which uses the default criteria referred to in subsection (4) as it applies to and in relation to an authorized institution which uses the prescribed default criteria.

(8) An authorized institution shall not engage in the practice of re-ageing for the purposes of subsection (1).

(9) In this section—

“prescribed default criteria” (訂明違責準則) means the criteria specified in subsection (1).

### **Division 5—Specific requirements for corporate, sovereign and bank exposures**

#### **150. Rating dimensions**

(1) Subject to subsection (4), an authorized institution shall ensure that its rating system for corporate, sovereign and bank exposures has 2 distinct and separate rating scales, comprising—

(a) obligor grades which reflect, exclusively, the risk of default of obligors; and

(b) facility grades which reflect—

(i) transaction-specific factors affecting loss severity in the case of default of obligors; and

(ii) where relevant, the characteristics of obligors to the extent that the characteristics are predictive of LGD.

(2) An authorized institution which uses the foundation IRB approach shall be regarded as complying with subsection (1)(b) if its rating system for corporate, sovereign and bank exposures has a rating scale which reflects the EL of exposures assigned to each grade.

(3) An authorized institution shall, in respect of its corporate, sovereign and bank exposures—

(a) rank and assign each exposure to the obligor grades and facility grades in accordance with its rating criteria and based on all relevant information available regarding the creditworthiness of the obligor or loss severity of the exposure; and

- (b) assign the same obligor grade to separate exposures to the same obligor unless the institution demonstrates to the satisfaction of the Monetary Authority that the risk of default of the obligor in respect of such exposures is different.

(4) An authorized institution may use a rating system for its specialized lending under supervisory slotting criteria approach which reflects EL by incorporating considerations about the creditworthiness of obligors and loss severity in respect of such lending.

### **151. Rating structure**

(1) An authorized institution shall ensure that its process for assigning corporate, sovereign and bank exposures to its obligor grades or facility grades results in a consistent, logical and cogent differentiation of credit risk inherent in those exposures—

- (a) with no excessive concentrations on particular obligor grades or facility grades;
- (b) with the level of perceived and measured credit risk increasing as credit quality declines from one grade to the next; and
- (c) allowing for reasonably accurate, consistent and verifiable estimation of credit risk components for each exposure.

(2) Subject to subsection (3), an authorized institution shall ensure that its rating system for corporate, sovereign and bank exposures has—

- (a) not less than 7 obligor grades for exposures to obligors who are not in default; and
- (b) not less than one obligor grade for exposures to obligors who are in default.

(3) Where an authorized institution uses the supervisory slotting criteria approach for its specialized lending, the institution shall ensure that its rating system has—

- (a) not less than 4 obligor grades for specialized lending to obligors who are not in default; and
- (b) not less than one obligor grade for specialized lending to obligors who are in default.

### **152. Rating criteria**

An authorized institution shall ensure that—

- (a) its rating definitions in respect of obligor grades and facility grades; and
- (b) its rating processes and criteria for assigning exposures to such grades,

are specific, logical, sufficiently detailed and consistently applied and result in a clear differentiation of credit risk inherent in the exposures.



**153. Rating assignment horizon**

An authorized institution shall—

- (a) use a time horizon of more than one year for the purposes of assigning its exposures to obligor grades;
- (b) subject to paragraph (c), ensure that the obligor grade to which an exposure is assigned accurately represents the institution's assessment of the willingness and ability of an obligor in respect of the exposure to perform the obligor's contractual obligations, after taking into account any potentially adverse economic conditions over a business cycle within the industry or geographic region relevant to the obligor; and
- (c) act prudently in assessing information relating to the willingness and ability of an obligor in respect of an exposure to perform the obligor's contractual obligations.

**154. Rating coverage**

An authorized institution shall—

- (a) in the case of each exposure which falls within the IRB classes of corporate, sovereign and bank exposures, assign the exposure to an obligor grade or facility grade as part of the institution's process for giving credit approvals; and
- (b) in the case of each obligor to whom the institution has a corporate, sovereign or bank exposure, assign the exposure to the obligor grade which accurately reflects the level of credit risk of the obligor in respect of the exposure.

**155. Integrity of rating process**

An authorized institution shall ensure that—

- (a) the institution has in place policies and procedures to ensure that the rating process for corporate, sovereign and bank exposures is independent of the institution's staff and management responsible for originating such exposures;
- (b) the assignment of exposures to obligor grades and facility grades is reviewed and updated not less than once in every 12 months and exposures to obligors which are more likely to default are subject to more frequent review and updating;
- (c) whenever the institution becomes aware of any new material information on an exposure (including in relation to the obligor in respect of that exposure), a review is conducted, within a reasonable period after the institution becomes so aware, of whether the exposure should be assigned to a different obligor grade or facility grade, as the case may be;

- (d) the institution has in place an effective process to obtain and update relevant information on the financial conditions and on other credit risk characteristics of the obligors in respect of the institution's exposures which affect assigned estimates of PD, LGD and EAD; and
- (e) the institution has in place an effective process for—
  - (i) identifying and documenting the circumstances in which officers of the institution may override the inputs to, or the outputs of, the institution's rating system; and
  - (ii) monitoring the nature and performance of such overrides which have occurred.

**156. Calculation of risk-weighted amount of corporate, sovereign and bank exposures**

(1) An authorized institution shall, for the purposes of calculating the risk-weighted amount of the institution's corporate, sovereign and bank exposures—

- (a) subject to section 167(c), if the institution uses the foundation IRB approach, provide its own estimate of the PD of each of its obligor grades and use supervisory estimates for the other credit risk components for inclusion into the risk-weight function to be used in that calculation;
- (b) if the institution uses the advanced IRB approach, provide its own estimate of the PD, LGD and EAD of each of its obligor grades and facility grades, as the case may be, and calculate the M of its exposures for inclusion into the risk-weight function to be used in that calculation; and
- (c) if the institution uses the supervisory slotting criteria approach to calculate the risk-weighted amount of its specialized lending, use the relevant supervisory estimate for the risk-weight to be allocated to the specialized lending.

(2) Subject to subsection (5) and section 158(2), an authorized institution shall use Formula 16 to calculate the risk-weighted amount of the institution's corporate, sovereign and bank exposures which are not in default.

## FORMULA 16

RISK-WEIGHT FUNCTION FOR CORPORATE,  
SOVEREIGN AND BANK EXPOSURES

$$\text{Correlation (R)} = \frac{0.12 \times (1 - \text{EXP}(-50 \times \text{PD}))}{(1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-50))]}$$

$$\text{Maturity adjustment (b)} = (0.11852 - 0.05478 \times \ln(\text{PD}))^2$$

$$\text{Capital charge factor (K)} = [\text{LGD} \times \text{N}[(1 - \text{R})^{-0.5} \times \text{G}(\text{PD}) + (\text{R} / (1 - \text{R}))^{0.5} \times \text{G}(0.999)] - \text{PD} \times \text{LGD}] \times (1 - 1.5 \times \text{b})^{-1} \times (1 + (\text{M} - 2.5) \times \text{b})$$

$$\text{Risk-weight (RW)} = \text{K} \times 12.5$$

$$\text{Risk-weighted amount} = \text{RW} \times \text{EAD}$$

where—

- (a) PD and LGD are expressed in decimals, EAD is expressed in Hong Kong dollars and M is expressed in years;
- (b) EXP denotes exponential;
- (c) ln denotes the natural logarithm;
- (d) N(x) denotes the cumulative distribution function for a standard normal random variable; and
- (e) G(z) denotes the inverse cumulative distribution function for a standard normal random variable.

(3) An authorized institution shall apply a zero capital charge factor (K) to a sovereign exposure of the institution if the calculation required under this section in respect of the exposure results in a negative capital charge factor (K) for the exposure.

(4) Subject to section 158(2), an authorized institution shall use the same risk-weight function set out in Formula 16 to calculate the risk-weighted amount of the institution's corporate, sovereign and bank exposures which are in default except that the capital charge factor (K) for a defaulted corporate, sovereign or bank exposure shall be equal to the greater of—

- (a) zero; or
- (b) the figure resulting from the subtraction of the institution's best estimate of the EL of the exposure from the LGD of the exposure.

(5) An authorized institution shall use Formula 17 to calculate the risk-weighted amount of the institution's corporate exposures (excluding specialized lending under supervisory slotting criteria approach) and public sector entity exposures (excluding exposures to sovereign foreign public sector entities)—

- (a) which are not in default; and
- (b) which are treated as hedged exposures under the double default framework pursuant to section 218.

### FORMULA 17

#### RISK-WEIGHT FUNCTION FOR HEDGED EXPOSURES UNDER DOUBLE DEFAULT FRAMEWORK

$$\begin{aligned} \text{Correlation } (\rho_{os}) &= 0.12 \times (1 - \text{EXP}(-50 \times \text{PD}_o)) / \\ &\quad (1 - \text{EXP}(-50)) + 0.24 \times \\ &\quad [1 - (1 - \text{EXP}(-50 \times \text{PD}_o)) / \\ &\quad (1 - \text{EXP}(-50))] \\ \text{Maturity adjustment } (b_{os}) &= (0.11852 - 0.05478 \times \ln(\text{PD}_{os}))^2 \\ \text{Capital charge factor } (K_{DD}) &= \left\{ \text{LGD}_g \times \left[ N \left( \frac{G(\text{PD}_o) + \sqrt{\rho_{os}} \times G(0.999)}{\sqrt{1 - \rho_{os}}} \right) - \text{PD}_o \right] \right. \\ &\quad \left. \times \frac{1 + (M_{os} - 2.5) \times b_{os}}{1 - 1.5 \times b_{os}} \right\} \times (0.15 + 160 \times \text{PD}_g) \\ \text{Risk-weight } (RW_{DD}) &= K_{DD} \times 12.5 \\ \text{Risk-weighted amount} &= RW_{DD} \times \text{EAD}_g \end{aligned}$$

where—

- (a) PD and LGD are expressed in decimals, EAD is expressed in Hong Kong dollars and M is expressed in years;
- (b) EXP denotes exponential;
- (c) ln denotes the natural logarithm;
- (d) N(x) denotes the cumulative distribution function for a standard normal random variable;
- (e) G(z) denotes the inverse cumulative distribution function for a standard normal random variable;
- (f)  $\text{PD}_o$  = PD of the exposure to the underlying obligor without taking into account the effect of credit protection;
- (g)  $\text{PD}_g$  = PD of the exposure to the credit protection provider in respect of the hedged exposure;

- (h)  $PD_{os}$  = the lower of  $PD_o$  and  $PD_g$ ;
- (i)  $M_{os}$  = M as determined in accordance with section 169;
- (j)  $LGD_g$  = LGD as determined in accordance with section 162;  
and
- (k)  $EAD_g$  = EAD of the hedged exposure.

(6) Where the obligor in respect of a hedged exposure of an authorized institution (referred to in this section as “underlying obligor”) defaults, the institution shall—

- (a) treat the exposure as a direct exposure to the credit protection provider concerned; and
- (b) risk-weight the exposure accordingly.

(7) Where the credit protection provider in respect of a hedged exposure of an authorized institution defaults, the institution shall—

- (a) treat the exposure as an exposure to the underlying obligor; and
- (b) risk-weight the exposure as an unhedged exposure to the underlying obligor.

(8) Where—

- (a) the underlying obligor in respect of a hedged exposure of an authorized institution defaults; and
- (b) the credit protection provider in respect of the hedged exposure also defaults,

the institution shall treat the exposure as a defaulted exposure to whichever of the underlying obligor, or the credit protection provider, defaulted last.

**157. Provisions supplementary to section 156(2) and (5)—firm-size adjustments for small-and-medium sized corporates**

(1) Where a corporate exposure of an authorized institution falls within the IRB subclass of small-and-medium sized corporates, the institution shall make an adjustment to take into account the size of the corporate concerned (referred to in this section as “firm-size adjustment”) to the calculation of the correlation ( $R$  or  $\rho_{os}$ ) in the risk-weight function set out in Formula 16 or 17 by substituting the following correlation formula for that in Formula 16 or 17, as the case requires—

- (a) if the exposure is not subject to the double default framework, then in Formula 16—

$$\text{Correlation (R)} = \frac{0.12 \times (1 - \text{EXP}(-50 \times \text{PD}))}{(1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-50))] - 0.04 \times (1 - (S - 50) / 450)};$$

- (b) if the exposure is subject to the double default framework, then in Formula 17—

$$\text{Correlation } (\rho_{os}) = \frac{0.12 \times (1 - \text{EXP}(-50 \times \text{PD}_o))}{(1 - \text{EXP}(-50)) + 0.24 \times [1 - (1 - \text{EXP}(-50 \times \text{PD}_o)) / (1 - \text{EXP}(-50))] - 0.04 \times (1 - (S - 50) / 450)}.$$

(2) In the correlation formula set out in subsection (1)(a) or (b), S is expressed as—

- (a) subject to paragraphs (b) and (c), the total annual revenue of the corporate;
- (b) subject to paragraph (c), in any case where the corporate concerned is a member of a group of companies, the consolidated total annual revenue of the group of companies of which the corporate is a member; or
- (c) in any case where the corporate concerned is consolidated with other corporates by the institution for risk management purposes, the aggregate of the total annual revenue of the corporate and other corporates which are so consolidated,

of not less than \$50 million to not more than \$500 million.

(3) Where any total annual revenue referred to in subsection (2) is less than \$50 million, the authorized institution concerned shall, for the purposes of that subsection, treat the total annual revenue as if it were \$50 million.

(4) Where an authorized institution demonstrates to the satisfaction of the Monetary Authority that the total annual revenue of a corporate does not accurately reflect the corporate's scale of business, then, for the purposes of this section, the institution may, with the prior consent of the Monetary Authority, substitute the corporate's total assets for the total annual revenue in calculating the firm-size adjustment.

## **158. Provisions supplementary to section 156—risk-weights for specialized lending**

- (1) Where an authorized institution is able to comply with—
  - (a) section 159 in relation to the estimation of PD under the foundation IRB approach of any of its specialized lending; or
  - (b) sections 159, 161, 164 and 168 in relation to the estimation of PD, LGD and EAD and the calculation of M under the advanced IRB approach of any of its specialized lending,

the institution shall use the risk-weight function specified in Formula 16 or 17, as the case requires, (if applicable, adjusted in accordance with section 157(1) in respect of exposures to small-and-medium sized corporates) to derive the risk-weighted amount of such specialized lending.

(2) Where an authorized institution does not fall within subsection (1) in respect of any of its specialized lending, the institution shall—

- (a) use the supervisory slotting criteria approach to derive the risk-weighted amount of such specialized lending;
- (b) assign any internal grade to such specialized lending based on the institution's criteria, systems and processes;
- (c) map the internal grades assigned to specialized lending referred to in paragraph (b) to one of the 5 supervisory rating grades of “strong”, “good”, “satisfactory”, “weak” and “default” set out in Table 18 by reference to—
  - (i) the criteria specified in Annex 6 to the document entitled “International Convergence of Capital Measurement and Capital Standards—A Revised Framework (Comprehensive Version)” published by the Basel Committee on Banking Supervision in June 2006; or
  - (ii) the credit quality grades specified in Schedule 8;
- (d) subject to subsection (3), apply the risk-weight specified in Table 18 for the relevant supervisory rating grade in calculating the risk-weighted amount of such specialized lending.

TABLE 18

SUPERVISORY RATING GRADES FOR DETERMINATION OF  
RISK-WEIGHTS FOR SPECIALIZED LENDING

	Strong	Good	Satisfactory	Weak	Default
Credit quality grade	1	2	3	4	Not applicable
Risk-weight	70%	90%	115%	250%	0%

(3) An authorized institution may assign a risk-weight of 50% to its specialized lending which falls into the supervisory rating grade of “strong” in Table 18, and a risk-weight of 70% to its specialized lending which falls into the supervisory rating grade of “good” in Table 18, if—

- (a) the specialized lending has a remaining maturity of less than 2.5 years; or

- (b) the institution demonstrates to the satisfaction of the Monetary Authority that the institution's credit underwriting criteria and the ability of the obligor in respect of the specialized lending to withstand other risk characteristics are substantially stronger than the corresponding criteria for the equivalent supervisory rating grade as referred to in subsection (2)(c)(i).

### 159. Probability of default

(1) An authorized institution which uses the foundation IRB approach or advanced IRB approach shall estimate the PD of each of its obligor grades such that—

- (a) subject to paragraphs (b) and (c), the estimate of the PD is a long run average of one-year default rates for obligors in respect of exposures which fall within the obligor grade to which the estimate relates;
  - (b) in the case of a corporate or bank exposure of the institution which is not in default, the estimate of the PD is the greater of—
    - (i) the estimate of the PD of the obligor grade referred to in paragraph (a) into which the exposure falls; or
    - (ii) 0.03%;
  - (c) in the case of a corporate, sovereign or bank exposure of the institution which is in default, the estimate of the PD is 100%; and
  - (d) the estimate of the PD is based on not less than one source of data—
    - (i) which is relevant to the institution's corporate, sovereign or bank exposures; and
    - (ii) which, subject to section 14, covers a period of not less than 5 years.
- (2) For the purposes of subsection (1)—
- (a) an authorized institution shall use information, sources of data and techniques which take into account the institution's long run default experience and long run loss experience as referred to in section 148(d)(i); and
  - (b) if an authorized institution uses a primary technique for the estimation of PD and other techniques as a point of comparison and potential adjustment, the institution shall act prudently in—
    - (i) comparing the results of the primary technique and other techniques; and
    - (ii) making adjustments for the respective limitations of the primary technique and other techniques.



**160. Loss given default under foundation IRB approach**

(1) An authorized institution which uses the foundation IRB approach shall—

- (a) use a supervisory estimate of 45% for the LGD of its senior exposures which are corporate, sovereign or bank exposures which are—
  - (i) unsecured; or
  - (ii) secured by collateral which is not recognized collateral; and
- (b) use a supervisory estimate of 75% for the LGD of its subordinated exposures which are corporate, sovereign or bank exposures.

(2) Subject to subsections (3) and (4), an authorized institution which uses the foundation IRB approach may, for the purposes of calculating the risk-weighted amount of a senior exposure of the institution which falls within any of its IRB classes of corporate, sovereign and bank exposures, take into account the credit risk mitigating effect of any—

- (a) recognized financial collateral; or
- (b) recognized IRB collateral.

(3) For the purposes of subsection (2)(a), an authorized institution shall—

- (a) use Formula 18 to determine the effective LGD (LGD\*) applicable to an exposure covered by recognized financial collateral for inclusion into the risk-weight function specified in Formula 16 or 17, as the case requires;
- (b) for the purposes of Formula 18, only use the net credit exposure (E\*) to calculate LGD\* and continue to calculate EAD without taking into account the presence of any collateral;
- (c) use Formula 19 to determine the net credit exposure (E\*) in respect of the exposure referred to in paragraph (a);
- (d) for the purposes of Formula 19—
  - (i) use sections 90, 91 and 92 to determine  $H_e$ ,  $H_c$  and  $H_{fx}$ ;
  - (ii) apply a haircut of zero to repo-style transactions which are treated as collateralized loans to the counterparty if the collateral falls within section 82(2); and
  - (iii) where the recognized financial collateral in respect of an exposure of the institution has a residual maturity which is shorter than the residual maturity of the exposure covered by the collateral, the institution shall adjust, with all necessary modifications, the value of the collateral in accordance with section 103.