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For information

Note for Legislative Council Panel on Financial Affairs

Progress of preparation of Basel II Capital and Disclosure Rules

Purpose

This paper reports the progress of the preparation of the Capital Rules (CRs) and Disclosure Rules (DRs) for implementation of Basel II in Hong Kong in January 2007, including the outcome of the preliminary consultation of the banking industry.

Progress

2. The Legislative Council Panel on Financial Affairs was briefed on 4 May 2006 on the progress of preparations for the implementation of Basel II in Hong Kong. Since then, the HKMA has released all relevant parts of the CRs (including the last batch of draft rules on the "Application of Rules" and "Internal ratings-based approach to calculation of credit risk", which is attached at Annex for members' reference) and the preliminary consultation has been completed. The consultation raised no major issues except for a few requests for technical clarification. Documents detailing the comments received in the consultation process and the HKMA's responses to them have been posted on the HKMA's website. Comments received, where appropriate, are also being incorporated into the consolidated draft of the CRs, which is currently being developed. The drafting of the DRs is also in progress, but they have not yet been issued for consultation.

3. The HKMA intends to issue the CRs for statutory consultation in July/August 2006, followed shortly by the DRs. Assuming no unanticipated problems arise from the consultation, the CRs will be published in the Gazette in late

September and tabled in the Legislative Council for negative vetting in October. The DRs will probably follow a month or so later.

Rules consultation plan

4. The HKMA will draw up a detailed plan for the public consultation on the Rules. To ensure broad support and identify issues of relevance to industry players, other professionals and the general public so that they can be properly considered before the Rules are gazetted, we plan to consult a broad spectrum of society. This will include the Legislative Council Members, the banking and deposit-taking industry associations, the Law Society, the Consumer Council, academics, the accounting profession, financial regulatory bodies, trade associations and Chambers of Commerce, and international financial organisations. In addition to making available copies of the draft Rules and an explanatory paper, we will also schedule briefings for anyone interested in the subject. We will continue to provide on our website details of the comments received and our responses to these comments. A version of the Rules reflecting the comments received from the consultation will then be finalised for gazetting.

Hong Kong Monetary Authority
June 2006

2. Interpretation

In these Rules, unless the context otherwise requires -

"basic approach" ( ), in relation to the calculation of an authorized institution's credit risk for non-securitization exposures, means the method of calculating that risk set out in *Part 6*;

"BSA" ( ) means the basic approach;

"connected company" ( ), in relation to an authorized institution, means -

(a) a subsidiary, or the holding company, of the institution; or

(b) a company which falls within section 64(1)(b), (c), (d) or (e) of the Ordinance in respect of the institution;

"consolidated basis" ( ), in relation to the calculation of an authorized institution's capital adequacy ratio, means the institution calculates that ratio on the basis set out in *section 13*;

"consolidation group" ( ), in relation to an authorized institution, means -

(a) the institution; and

(b) such subsidiaries of the institution as are specified in a section 98(2) requirement given to the institution;

"consolidation requirement" ( ), in relation to a subsidiary of an authorized institution, means -

(a) a section 79A(1) requirement whereby a provision of Part XV of the Ordinance is to apply to the institution on a consolidated basis in respect of that subsidiary; or

(b) a section 98(2) requirement whereby the capital adequacy ratio of the institution is to be calculated on a consolidated basis in respect of that subsidiary;

"EAD" ( ) means exposure at default;

"eligible subsidiary" ( ), in relation to the calculation of an authorized institution's capital adequacy ratio, means a subsidiary which falls within *section 10(2)*;

"exposure at default" ( ), in relation to an exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the expected amount of the exposure -

(a) upon the default of the obligor in respect of the exposure (being, in the case of an off-balance sheet exposure, the credit equivalent amount); and

(b) measured without deduction of specific provisions and partial write-offs;

"incorporated" ( ) includes established;

"guarantee" ( ) includes an indemnity;

"insurance firm" ( ) -

(a) means an entity -

(i) authorized and supervised by a relevant insurance regulator pursuant to the law of a country other than Hong Kong; and

(ii) which is subject to supervisory arrangements regarding the maintenance of adequate capital to support its

business activities comparable to those prescribed for authorized institutions under the Ordinance and these Rules; and

(b) includes an authorized insurer within the meaning of the Insurance Companies Ordinance (Cap. 41);

"insurance regulator" ( ) does not include a restricted insurance regulator;

"IRB class" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a class of non-securitization exposures specified in *Table [.]* (including the IRB subclasses falling within that class);

"IRB subclass" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a subclass of non-securitization exposures specified in *Table [.]*;

"non-securitization exposure" ( ), in relation to an authorized institution, means an exposure of the institution which is not a securitization exposure;

"PD/LGD approach" ( ), in relation to an equity exposure of an authorized institution, means the use of the IRB to calculate the institution's credit risk in respect of equity exposures as specified in *section [..]*;

"restricted insurance regulator" ( ) means an insurance regulator specified in *Part [..]* of *Schedule [..]*;

"section 79A(1) requirement" ( ), in relation to an authorized institution, means a requirement in a notice under section 79A(1) of the Ordinance whereby a provision of Part XV of the Ordinance is to apply to the institution on -

(a) a consolidated basis in respect of all the subsidiaries of the institution;

(b) a consolidated basis in respect of such subsidiaries of the institution as are specified in the notice;

(c) the consolidated basis referred to in *paragraph (a)* and an unconsolidated basis; or

(d) the consolidated basis referred to in *paragraph (b)* and an unconsolidated basis unless otherwise specified in the notice;

"section 98(2) requirement" ( ), in relation to an authorized institution, means a requirement in a notice under section 98(2) of the Ordinance whereby the capital adequacy ratio of the institution is to be calculated on -

(a) a consolidated basis in respect of all the subsidiaries of the institution;

(b) a consolidated basis in respect of such subsidiaries of the institution as are specified in the notice;

(c) the consolidated basis referred to in *paragraph (a)* and an unconsolidated basis; or

(d) the consolidated basis referred to in *paragraph (b)* and an unconsolidated basis unless otherwise specified in the notice;

"securitization exposure" ( ), in relation to an authorized institution, means the institution's exposure to a securitization transaction in its banking book, and includes such an exposure arising from -

(a) the purchase or acquisition of securitization issues for investment purposes;

(b) the provision of credit protection or credit enhancement to any of the parties to the securitization transaction;

(c) the retention of one or more than one securitization position;

(d) the provision of a liquidity facility or similar facility for the securitization transaction;

(e) the repurchase of securitization issues; and

(f) the obligation to acquire any investors' interest in the securitization transaction with an early amortization provision;

"solo basis" ( ), in relation to the calculation of an authorized institution's capital adequacy ratio, means the institution calculates that ratio on the basis set out in *section 11*;

"solo-consolidated basis" ( ), in relation to the calculation of an authorized institution's capital adequacy ratio, means the institution calculates that ratio on the basis set out in *section 12*;

"solo-consolidated subsidiary" ( ), in relation to an authorized institution, means a subsidiary of the institution specified in an approval under *section 12(2)(a)* granted to the institution;

"subsidiary undertaking" ( ) has the meaning assigned to it by the Twenty-third Schedule to the Companies Ordinance (Cap.32);

“transitional period” ( ) means the period commencing on and including 1 January 2007 and ending on and including 31 December 2009.

Second Draft - Part 2

CAPITAL RULES

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PART 2

APPLICATION OF THESE RULES

Division 1 - Approaches that may be used by authorized institutions to calculate credit risk for non-securitization exposures

3. Calculation of credit risk for non-securitization exposures

(1) An authorized institution shall -

(a) subject to *paragraphs (b)* and *(c)*, only use the STC to calculate its credit risk for non-securitization exposures;

(b) subject to *paragraph (c)*, only use the BSA to calculate its credit risk for non-securitization exposures if it has the approval to do so under *section 4(2)(a)*;

(c) only use the IRB to calculate its credit risk for non-securitization exposures if it has the approval to do so under *section 4(2)(a)*.

(2) For the avoidance of doubt, it is hereby declared that *subsection (1)* shall not operate to prevent an authorized institution from using any combination of the STC, BSA and IRB to calculate its credit risk for non-securitization exposures where that combination is expressly permitted by, and in accordance with, another section of these Rules.

4. Application by authorized institution for approval to use BSA or IRB to calculate its credit risk

(1) An authorized institution may make an application to the Monetary Authority for approval to calculate its credit risk for non-securitization exposures by using the BSA or IRB.

(2) Subject to *subsection (3)* and *section 4A*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to calculate its credit risk for non-securitization exposures by using the BSA or IRB; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to use the BSA or IRB to calculate its credit risk for non-securitization exposures if -

(a) in the case of the BSA, any one or more of the criteria specified in *section 5* applicable to or in relation to the institution are not fulfilled with respect to the institution;

(b) in the case of the IRB, any one or more of the criteria specified in *Schedule 1* applicable to or in relation to the institution are not fulfilled with respect to the institution.

4A. Circumstances in which Monetary Authority shall take into account assessment outside Hong Kong of authorized institution's rating system

(1) Where an authorized institution uses a rating system which has been adopted by the parent bank of the institution to calculate the institution's credit risk for non-securitization exposures, then the Monetary Authority shall, for the purposes of *Schedule 1*, take into account, in so far as is practicable and reasonable in all the circumstances of the case -

(a) the assessment of the home supervisor of the parent bank as to the accuracy, verifiability, internal consistency and integrity of the rating system if, and only if, the Monetary Authority is satisfied that the capital adequacy standards adopted by the home supervisor for assessing credit risk under the IRB are not materially different from those set out in *Part 5* and *Schedule 1*; and

(b) the appropriateness of the rating system for the purposes of assessing the credit risk characteristics of the institution's credit exposures.

5. Minimum criteria for approval under *section 4(2)(a)* to use BSA to calculate credit risk of authorized institution

An authorized institution making an application under *section 4(1)* to use the BSA to calculate its credit risk for non-securitization exposures must satisfy the Monetary Authority -

(a) that -

(i) the institution and its consolidation group, if any, each had, at the end of the financial year immediately preceding the date of the application, total assets, before deducting any specific and collective provisions, of not more than $10 billion; and

(ii) there is no cause to believe that the use by the institution of the BSA to calculate its credit risk for non-securitization exposures would not adequately identify, measure and assess the credit risk of the institution's exposures taking into account the nature of the institution's business; or

(b) that -

(i) the institution has an implementation plan for the use of the IRB to calculate its credit risk for non-securitization exposures which, in form and substance, will satisfy the criteria specified in *Schedule 1* applicable to and in relation to an authorized institution seeking to use the IRB to

calculate its credit risk for non-securitization exposures; and

(ii) the institution is reasonably likely to fulfil, not later than the end of the transitional period, the criteria specified in *Schedule 1* applicable to and in relation to an institution seeking to use the IRB to calculate its credit risk for non-securitization exposures.

[6. Provision not used.]

7. Authorized institution using IRB shall not use approach other than IRB to calculate its credit risk for non-securitization exposures after expiration of transitional period except with exemption under *section 9B(1)(a)*

(1) Subject to *section 9*, where approval under *section 4(2)(a)* has been granted to an authorized institution to use the BSA to calculate its credit risk for non-securitization exposures on the ground specified in *section 5(b)*, then -

(a) provided the institution has obtained the prior consent of the Monetary Authority, the institution may, before its implementation of the IRB for non-securitization exposures ("relevant exposures") of the institution, during the transitional period use a combination of the BSA and STC to calculate its credit risk for the relevant exposures; and

(b) the institution shall, not later than the expiration of the transitional period -

(i) use the STC to calculate its credit risk for non-securitization exposures the subject of an exemption under *section 9B(1)(a)*;

(ii) use the IRB to calculate its credit risk for all other non-securitization exposures.

(2) Where an authorized institution has used the IRB to calculate its credit risk in respect of a non-securitization exposure during the transitional period, the institution shall not use any other approach other than the IRB to calculate its credit risk in respect of that exposure.

8. Provisions applicable where authorized institution may use more than one approach to calculate credit risk for non-securitization exposures

(1) Where under these Rules an authorized institution may use more than one relevant approach to calculate its credit risk for non-securitization exposures of the institution falling within an IRB class of exposures of the institution, then the institution shall not -

(a) use more than one such approach to calculate its credit risk for all of its non-securitization exposures falling within that class; or

(b) discontinue using one such approach, and commence using another such approach, to calculate its credit risk for all of its non-securitization exposures falling within that class,

except with the prior consent of the Monetary Authority.

(2) Where under these Rules an authorized institution which uses the IRB to calculate its credit risk may use more than one IRB calculation approach to calculate its credit risk for non-securitization exposures of the institution falling within an IRB class of exposures of the institution, then the institution shall not -

(a) use more than one such IRB calculation approach to calculate its credit risk for all of its non-securitization exposures falling within that class; or

(b) discontinue using one such IRB calculation approach, and commence using another such IRB calculation approach, to calculate its credit risk for all of its non-securitization exposures falling within that class,

except with the prior consent of the Monetary Authority.

(3) In this section -

"relevant approach" ( ), in relation to the calculation of an authorized institution's credit risk, means the STC, BSA or IRB;

"IRB calculation approach" ( ) means -

(a) in respect of corporate exposures, the FIRB, the AIRB or the supervisory slotting criteria approach;

(b) in respect of sovereign exposures, the FIRB or the AIRB;

(c) in respect of bank exposures, the FIRB or the AIRB;

(d) in respect of retail exposures, the IRB;

(e) in respect of equity exposures, the simple risk-weight method or the internal models method under the market-based approach or the PD/LGD approach; and

(f) in respect of other exposures, the specific risk-weight method.

9. Action that may be taken by Monetary Authority if authorized institution using BSA or IRB to calculate its credit risk no longer meets specified criteria

(1) Where -

(a) an authorized institution uses the BSA or IRB to calculate its credit risk for non-securitization exposures; and

(b) the Monetary Authority is satisfied that, if the institution were to make a fresh application under *section 4(1)* for approval to use the BSA or the IRB, as the case may be, to calculate its credit risk for non-securitization exposures, such approval would be refused by virtue of *section 4(3)* (but, in so far as *Schedule 1* is concerned, only *section 1* of that *Schedule*),

then the Monetary Authority may, by notice in writing given to the institution -

(c) in the case of an institution using the BSA to calculate its credit risk for non-securitization exposures, require the institution to use the STC to calculate its credit risk for non-securitization exposures instead of the BSA -

(i) in respect of all of its business, or parts of its business, as specified in the notice; and

(ii) beginning on such date, or the occurrence of such event, as is specified in the notice;

(d) in the case of an institution using the IRB to calculate its credit risk for non-securitization exposures -

(i) request the institution to -

(A) submit to the Monetary Authority a plan which satisfies the Monetary Authority that, if it were implemented by the institution, would mean that the institution would cease to fall within *paragraph (b)* within a period that is reasonable in all the circumstances of the case; and

(B) implement such plan;

(ii) require the institution, if it fails or refuses to comply with the request referred to in *subparagraph (i)*, to use the STC to calculate its credit risk for non-securitization exposures instead of the IRB -

(A) in respect of all of its business; and

(B) beginning on such date, or the occurrence of such event, as is specified in the notice;

(iii) if it complies with the request referred to in *subparagraph (i)*, take one or more than one of the following measures until the institution ceases to fall within *paragraph (b)* -

(A) require the institution to calculate its credit risk for non-securitization exposures by using the STC instead of the IRB -

(I) in respect of such parts of its business as are specified in the notice; and

(II) beginning on such date, or the occurrence of such event, as is specified in the notice;

(B) advise the institution that the Monetary Authority is considering exercising the Monetary Authority's power under *section 101* of the Ordinance to vary the capital adequacy ratio of the institution by increasing it;

(C) require the institution to be subject to a capital floor in accordance with *section [..]*; or

(D) require the institution to reduce its credit exposures in such manner as is, or to adopt such measures as are, specified in the notice which, in the opinion of the Monetary Authority, will cause the institution to cease to fall within *paragraph (b)* or will otherwise mitigate the effect of the institution falling within that paragraph.

(2) An authorized institution shall comply with a requirement referred to in *subsection (1)(c)* or *(d)(ii)* or *(iii)(A)*, *(C)* or *(D)* of a notice given to it under *subsection (1)*.

Division 2 - Specific requirements for IRB

9A. Minimum IRB coverage ratio

(1) Subject to *section 9B*, an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures shall have -

(a) subject to *paragraph (b)*, an IRB coverage ratio of -

(i) subject to *subparagraph (ii)*, not less than 85%;

(ii) not less than such other percentage agreed in writing between the institution and the Monetary Authority,

on a solo, solo-consolidated or consolidated basis as required pursuant to *Division 4*;

(b) subject to *subsection (2)*, if *section 9E(4)* is applicable to the institution, an IRB coverage ratio of -

(i) subject to *subparagraph (ii)*, not less than 75%;

(ii) not less than such other percentage agreed in writing between the institution and the Monetary Authority,

on a solo, solo-consolidated or consolidated basis as required pursuant to *Division 4*;

(2) Where section *9E(4)* ceases to apply to an authorized institution, then *subsection (1)(a)* shall apply to the institution.

[(3) Provision not used.]

(4) Subject to *section 9B*, where an authorized institution uses the IRB to calculate its credit risk for -

(a) an IRB class of non-securitization exposures falling within a particular business unit; or

(b) an IRB subclass of retail exposures falling within a particular business unit,

then the institution shall apply the IRB to all exposures falling within that class or subclass, as the case may be, falling within that business unit.

[(5) Provision not used.]

(6) An authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures shall give notice in writing to the Monetary Authority -

(a) of the occurrence of any event ("relevant event") which could reasonably be construed as causing, or potentially causing, whether by itself or in conjunction with any other event, a failure by it to comply with *subsection (1)*; and

(b) as soon as is practicable after the occurrence of the relevant event.

9B. Exemption for immaterial exposures

(1A) An authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures may make an application to the Monetary Authority to have such of its non-securitization exposures as are specified in the application exempted from inclusion in such calculation ("relevant calculation") of that risk.

(1) Subject to *subsections (4)* and *(6)*, the Monetary Authority shall determine an application under *subsection (1A)* by -

(a) exempting from the relevant calculation -

(i) such exposures in an IRB class of exposures (or, in the case of retail exposures, an IRB subclass of exposures); or

(ii) such exposures falling within a business unit,

to which the application relates in respect of which the Monetary Authority is satisfied that such exemption will not materially prejudice the calculation of the institution's regulatory capital for credit risk; or

(b) refusing such exemption.

(2) Subject to *section 7(a)*, an authorized institution to which an exemption under *subsection (1)* relates shall use the STC to calculate its credit risk for non-securitization exposures the subject of the exemption.

[(3) Provision not used.]

(4) The Monetary Authority shall not grant an exemption under *subsection (1)* in respect of an authorized institution unless the institution satisfies the Monetary Authority that if the exemption were granted -

(a) the aggregate credit risk-weighted amount of -

(i) the non-securitization exposures that would be the subject of the exemption; and

(ii) the securitization exposures that would be subject to the STS in consequence of the exemption,

would not exceed 15% of the institution's total credit risk-weighted amount;

(b) if *subparagraph (i)* of *subsection (1)(a)* is applicable -

(i) in the case of non-securitization exposures which are not equity exposures, the aggregate credit risk-weighted amount of the institution's exposures exempted in an IRB class of exposures (or, in the case of retail exposures, an IRB subclass of exposures) would not exceed 5% of the institution's total credit risk-weighted amount;

(ii) in the case of non-securitization exposures which are equity exposures -

(A) subject to *sub-subparagraph (B)*, the average aggregate EAD of the institution's equity exposures exempted over the past 12 months would not exceed 10% of the aggregate of the institution's capital base;

(B) if the institution's equity exposures consist of less than 10 individual holdings, the average aggregate EAD of the institution's equity exposures exempted over the past 12 months would not exceed 5% of the aggregate of the institution's capital base.

(5) For the avoidance of doubt, it is hereby declared that the Monetary Authority may refuse to grant an exemption under *subsection (1)* in respect of an authorized institution notwithstanding that the Monetary Authority is satisfied as referred to in *subsection (4)* in respect of the institution.

(6) The Monetary Authority shall not grant an exemption under *subsection (1)* in respect of an IRB class of exposures (or, in the case of retail exposures, an IRB subclass of exposures), or exposures falling within a business unit, of an authorized institution if the Monetary Authority is satisfied that the institution can use the IRB to calculate its credit risk for those exposures without incurring significant cost or expending significant resources.

(7) An authorized institution to which an exemption ("existing exemption") under *subsection (1)* relates shall give notice in writing to the Monetary Authority -

(a) of any case where, if the institution were to make a fresh application under *section 9B(1A)* for an exemption ("new exemption") in respect of the exposures to which the existing exemption relates, the institution is satisfied that the new exemption would be, or may be, refused by virtue of *subsection (4)* or *(6)*; and

(b) as soon as is practicable after the institution is so satisfied.

(8) In this section -

"credit risk-weighted amount" ( ) -

(a) in relation to a non-securitization exposure of an authorized institution, means the credit risk-weighted amount of the exposure under the use by the institution of the STC, IRB or BSA, as the case requires, to calculate its credit risk for non-securitization exposures;

(b) in relation to a securitization exposure of an authorized institution, means the credit risk-weighted amount of the exposure under the use by the institution of the STS or IRBS, as the case requires, to calculate its credit risk for securitization exposures;

"past 12 months" ( ), in relation to an authorized institution seeking an exemption under *subsection (1)*, means the 12 months immediately preceding the

date on which it makes an application to the Monetary Authority for the exemption.

9C. Revocation of exemption under *section 9B(1)*

(1) Where -

(a) an authorized institution uses the STC or BSA to calculate its credit risk for non-securitization exposures the subject of an exemption under *section 9B(1)*; and

(b) the Monetary Authority is satisfied that, if the institution were to make a fresh application under *section 9B(1A)* for an exemption in respect of those exposures, the exemption would be refused by virtue of *section 9B(1)*, *(4)* or *(6)*,

then the Monetary Authority may, by notice in writing given to the institution -

(c) require the institution to submit to the Monetary Authority a plan, within such period (being a period reasonable in all the circumstances of the case) as is specified in the notice, as to how and within what period the institution proposes to use the IRB to calculate its credit risk for those non-securitization exposures; or

(d) revoke the exemption on such date, or the occurrence of such event, as is specified in the notice.

(2) An authorized institution shall comply with a requirement referred to in *subsection (1)(c)* of a notice given to it under *subsection (1)*.

(3) For the avoidance of doubt, it is hereby declared that an authorized institution's compliance with a requirement referred to in *subsection (1)(c)* does not prejudice the generality of the Monetary Authority's power under *subsection (1)(d)*.

[9D. Provision not used]

9E. Transitional arrangements

(1) Subject to *subsections (2)* and *(3)*, an authorized institution which commences using the IRB to calculate its credit risk for non-securitization exposures during the transitional period may comply with this section instead of *Part 5* to the extent only that this section is inconsistent with the provisions of that Part.

(2) Subject to *subsection (3)*, for the purposes of *subsection (1)*, an authorized institution may, in the case of an IRB class of non-securitization exposures specified in *column 1* of *Table 1A*, replace the minimum data requirement specified in *column 2* of that table opposite that class of exposures with the transitional data requirement specified in *column 3* of that table opposite that minimum data requirement.

Table 1A

Transitional minimum data requirements

Column 1	**Column 2**	**Column 3**
IRB classes of non-securitization exposures	**Normal requirement**	**Transitional requirement**
Observation period for the PD under - (a) the FIRB for corporate, sovereign and bank exposures; and (b) the PD/LGD approach for equity exposures	Not less than 5 years set out in *section [..]*	2 years during the transitional period, increasing by 1 year for each of 2010, 2011 and 2012
Observation period for PD/LGD/EAD for retail exposures	Not less than 5 years set out in *section [..]*	2 years during the transitional period, increasing by 1 year for each of 2010, 2011 and 2012

(3) An authorized institution which uses *Table 1A* shall demonstrate to the satisfaction of the Monetary Authority that -

(a) the institution is prudent in assigning obligors or exposures to obligor grades, facility grades, or pools of exposures, as the case requires;

(b) the institution is prudent in its default and loss estimates; and

(c) the processes adopted by the institution fully enable it to comply with *paragraphs (a)* and *(b)*.

(4) Subject to *subsection (5)*, an authorized institution may, with the prior consent of the Monetary Authority, during the transitional period use the IRB to calculate its credit risk for non-securitization exposures (and, if applicable, exposures of its consolidation group) in phases ("phased rollout").

(5) The Monetary Authority shall not consent to a phased rollout by an authorized institution unless the institution satisfies the Monetary Authority that the institution has, and will implement, a plan for the phased rollout that -

(a) is realistically achievable having regard to the nature of the institution's business; and

(b) has been developed in good faith for the purpose of introducing a method of calculating the institution's regulatory capital and not for the purpose of regulatory capital arbitrage.

Division 3 - Approaches that may be used by authorized institutions to calculate credit risk for securitization exposures

9F. Calculation of credit risk for securitization exposures

(1) Subject to *subsections (2)* and *(3)* and *section 9G*, an authorized institution shall -

(a) only use the STS to calculate its credit risk for securitization exposures in a securitization transaction if –

(i) it uses the STC to calculate its credit risk for the [type] of exposures that is the same as the [type] of underlying exposures in the securitization transaction; or

(ii) it uses the BSA to calculate its credit risk for the [type] of exposures that is the same as the [type] of underlying exposures in the securitization transaction;

(b) only use the IRBS to calculate its credit risk for securitization exposures in a securitization transaction if it uses the IRB to calculate its credit risk for the [type] of exposures that is the same as the [type] of underlying exposures in the securitization transaction.

(2) Where a securitization transaction has -

(a) 2 or more [types] of underlying exposures; and

(b) an authorized institution which holds a securitization exposure in respect of the securitization transaction uses any combination of the STC, IRB or BSA to calculate its credit risk for those [types],

then the institution shall, after consultation with the Monetary Authority and unless otherwise directed by the Monetary Authority -

(c) use the STS to calculate its credit risk for the securitization exposure if the STC or BSA is used to calculate its credit risk for the majority of those [types];

(d) use the IRBS to calculate its credit risk for the securitization exposure if the IRB is used to calculate its credit risk for the majority of those [types].

(3) Where an authorized institution holds one or more than one securitization exposure in a securitization transaction, uses the IRB to calculate its credit risk for non-securitization exposures and either -

[(a) provision not used;]

(b) the IRB has no specific treatment for exposures of the same [type] as the [type] of underlying exposures in the securitization transaction; or

(c) the institution does not have the prior consent of the Monetary Authority to use the IRB to calculate its credit risk for the [type] of exposures that is the same as the [type] of underlying exposures in the securitization transaction,

then the institution shall use the STS to calculate its credit risk for the securitization exposures in the securitization transaction.

(4) For the purposes of *subsection (2)*, an authorized institution shall determine which is the majority of the [types] of underlying exposures referred to in that subsection by reference to, for each [type] of underlying exposures, the principal amount of the on-balance sheet assets and the credit equivalent amount of the off-balance sheet exposures under the use of the STC by the institution, or the EAD of off-balance sheet exposures under the use of the IRB by the institution, as the case requires.

9G. Use of RBM or SFM to calculate credit risk for securitization exposures under IRBS

An authorized institution which uses the IRBS to calculate its credit risk for securitization exposures –

(a) shall use the RBM to calculate the risk-weighted amount of its rated securitization exposures;

(b) subject to *paragraph (c)*, shall, with the prior consent of the Monetary Authority, use the SFM to calculate the capital charge for its unrated securitization exposures;

(c) subject to *paragraph (d)*, shall deduct from its capital base any unrated securitization exposure of the institution in respect of which the SFM cannot be used to calculate the institution's credit risk for the exposure because the institution lacks the consent referred to in *paragraph (b)* or because of any other reason;

(d) may, with the prior consent of the Monetary Authority, apply the method specified in *section [..]* to calculate the risk-weighted amount of unrated eligible liquidity facilities extended by the institution that falls within *section [..]*.

Division 3A - Approaches that may be used by authorized institutions to calculate market risk

9H. Calculation of market risk

An authorized institution (other than an exempt authorized institution) shall -

(a) subject to *paragraphs (b)* and *(c)*, only use the STM to calculate its market risk;

(b) subject to *paragraph (c)* and *section 9J*, only use the IMA to calculate its market risk if it has the approval to do so under *section 9I(2)(a)*;

(c) if the institution is the subsidiary of a bank referred to in *paragraph (b)* of the definition of "bank", only use the approach adopted by its parent bank to calculate its market risk if it has the approval to do so under *section 9L(2)(a)*.

9I. Application by authorized institution for approval to use IMA to calculate its market risk

(1) An authorized institution may make an application to the Monetary Authority for approval to calculate its market risk by using the IMA.

(2) Subject to *subsection (3)* and *section 9J*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to calculate its market risk by using the IMA; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to use the IMA to calculate its market risk if any one or more of the criteria specified in *Schedule 1A* applicable to or in relation to the institution are not fulfilled with respect to the institution.

(4) Where an authorized institution uses the IMA to calculate its market risk, then the institution shall not, without the prior consent of the Monetary Authority, make any significant change to any internal model which was the subject of the approval under *subsection (2)(a)* which gave rise to the institution using the IMA to calculate its market risk.

9J. Monetary Authority may grant approval to authorized institution to use IMA to calculate its market risk for parts only of its business, etc.

(1) The Monetary Authority may grant an approval under *section 9I(2)(a)* to an authorized institution to use the IMA to calculate its market risk -

(a) in respect of general market risk, specific risk, or general market risk and specific risk, for -

(i) such risk categories as are specified in the approval; or

(ii) such local or overseas business of the institution as is specified in the approval; and

(b) beginning on such date, or the occurrence of such event, as is specified in the approval.

(2) For the avoidance of doubt, it is hereby declared that an authorized institution which has an approval under *section 9I(2)(a)* falling within *subsection (1)* must use the STM to calculate its market risk in every case where it does not have approval to use the IMA to calculate its market risk.

9K. Action that may be taken by Monetary Authority if authorized institution using IMA to calculate its market risk no longer fulfils criteria specified in *Schedule 1A*

(1) Where -

(a) an authorized institution uses the IMA to calculate its market risk ; and

(b) the Monetary Authority is satisfied that, if the institution were to make a fresh application under *section 9I(1)* for approval to use the IMA to calculate its market risk, such approval would be refused by virtue of *section 9I(3)*,

then the Monetary Authority may, by notice in writing given to the institution -

(c) require the institution to use the STM to calculate its market risk instead of the IMA -

(i) in respect of all of its business, or parts of its business, as specified in the notice; and

(ii) beginning on such date, or the occurrence of such event, as is specified in the notice;

(d) advise the institution that the Monetary Authority is considering exercising the Monetary Authority's power under section 101 of the Ordinance to vary the capital adequacy ratio of the institution by increasing it;

(e) require the institution to calculate its market risk capital charge by the use of such higher multiplication factor as the Monetary Authority specifies pursuant to *section [..]*; or

(f) require the institution to adopt such measures specified in the notice which, in the opinion of the Monetary Authority, will cause the institution to cease to fall within *paragraph (b)* or will otherwise mitigate the effect of the institution falling within that paragraph.

(2) An authorized institution shall comply with a requirement referred to in *subsection (1)(c)*, *(e)* or *(f)* of a notice given to it under *subsection (1)*.

(3) For the avoidance of doubt, it is hereby declared that the criteria specified in *Schedule 1A* are also applicable to and in relation to an authorized institution using the IMA to calculate its market risk in respect of the use by it of an internal model the subject of a significant change referred to in *section 9I(4)* (and whether or not the institution has, in respect of that change, been given the prior consent referred to in *section 9I(4)*), and *subsection (1)(b)* and the other provisions of this section shall apply to the institution accordingly.

9L. Application by authorized institution for approval to use approach adopted by parent bank to calculate market risk

(1) An authorized institution which is the subsidiary of a bank referred to in *paragraph (b)* of the definition of "bank" may make an application to the Monetary Authority for approval to calculate its market risk by using the approach adopted by its parent bank to calculate market risk.

(2) Subject to *subsection (3)*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to calculate its market risk by using the approach adopted by its parent bank to calculate market risk; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to calculate its market risk by using the approach adopted by its parent bank to calculate market risk unless the institution satisfies the Monetary Authority that -

(a) that approach is not materially different from the STM or IMA, or a combination of both, to calculate the market risk of the authorized institution; and

(b) the parent bank is adequately supervised on a consolidated basis by the relevant banking supervisory authority (including so supervised in respect of capital adequacy, concentration of exposures and liquidity).

9M. Action that may be taken by Monetary Authority if Monetary Authority ceases to be satisfied as specified in *section 9L(3)*, etc.

(1) Where -

(a) an authorized institution is using the approach of its parent bank to calculate market risk; and

(b) the Monetary Authority is satisfied that, if the institution were to make a fresh application under *section 9L(1)* for approval to use that approach to calculate its market risk, such approval would be refused -

(i) by virtue of *section 9L(3)*; or

(ii) because the entity which was the parent bank of the institution has ceased to be the parent bank of the institution,

then the Monetary Authority may, by notice in writing given to the institution, revoke the approval concerned under *section 9L(2)(a)* beginning on such date, or the occurrence of such event, as is specified in the notice.

(2) Immediately upon the revocation under *subsection (1)* of an approval under *section 9L(2)(a)* granted to an authorized institution, *section 9H(a)* and *(b)* shall apply to the institution.

9N. Authorized institution which uses IMA to calculate market risk requires Monetary Authority's prior consent to use STM instead of IMA

Subject to *section 9K(1)(c)*, an authorized institution which uses the IMA to calculate its market risk in respect of all or any part of its business pursuant to an approval under *section 9I(2)(a)* shall not, in respect of such business, use the STM to calculate its market risk instead of the IMA except with the prior consent of the Monetary Authority.

9O. Exemption from *section 9H*

(1) The Monetary Authority shall exempt an authorized institution (other than an authorized institution using the IRB to calculate its credit risk) from *section 9H* if the institution satisfies the Monetary Authority that -

(a) the institution's positions -

(i) never exceed 5% of its total on-balance sheet and off-balance sheet items; or

(ii) only sporadically exceed 5%, and never exceed 6%, of its total on-balance sheet and off-balance sheet items; and

(b) the institution's positions -

(i) never exceed $50 million; or

(ii) only sporadically exceed $50 million and never exceed $60 million.

(2) For the purposes of *subsection (1)* -

(a) the amount of an authorized institution's positions is calculated by aggregating -

(i) the institution's total gross (long plus short) positions in debt securities and debt-related derivative contracts;

(ii) the mean average of the institution's total long and total short positions in interest rate derivative contracts;

(iii) the institution's total gross (long plus short) positions in equities and equity-related derivative contracts;

(iv) the total net open position of the institution in foreign exchange exposures as set out in *section [..]*; and

(v) the institution's total gross (long plus short) positions in commodities and commodity-related derivative contracts;

and

(b) an authorized institution's total on-balance sheet and off-balance sheet items are derived by -

(i) aggregating the institution's total liabilities, total on-balance sheet assets less specific and collective provisions, and the principal amount of all of the institution's off-balance sheet exposures; and

(ii) deducting therefrom the institution's paid-up capital, reserves, current profit and loss, and perpetual or term subordinated debt.

(3) The positions applicable to an authorized institution for the purposes of *subsections (1)* and *(2)* shall be those positions as on -

(a) subject to *paragraph (b)*, the last calendar day of each of the 4 consecutive calendar quarters of the same calendar year; or

(b) the last calendar day of such other period, being not more than 4 consecutive calendar quarters, as the Monetary Authority specifies in writing in respect of the institution.

(4) Where an authorized institution is exempted under this section from *section 9H*, the institution -

(a) shall not, except with the prior consent of the Monetary Authority, include market risk in the calculation of its capital adequacy ratio (and the definition of "capital adequacy ratio" shall be construed accordingly);

(b) shall give notice in writing to the Monetary Authority of -

(i) an increase in its positions which causes it, or may cause it, to cease to fall within *paragraphs (a)* and *(b)* of *subsection (1)*; or

(ii) an intention to increase its positions which will cause it, or may cause it, to cease to fall within *paragraphs (a)* and *(b)* of *subsection (1)*; and

(c) shall, in the case of any of its market risk exposures that can also be treated as credit risk exposures of the institution, apply the provisions of *Part [..]* to those market risk exposures.

9P. Revocation of exemption from *section 9H*

(1) Where -

(a) an authorized institution is exempted under *section 9O(1)* from *section 9H*; and

(b) the Monetary Authority is satisfied that, if the institution were not already so exempted, such exemption would be refused by virtue of the institution failing to satisfy the Monetary Authority as specified in *section 9O(1)*,

then the Monetary Authority may, by notice in writing given to the institution, revoke the exemption concerned under *section 9O(1)* beginning on such date, or the occurrence of such event, as is specified in the notice.

(2) *Section 9H* shall apply to an authorized institution immediately upon the revocation under this section of an exemption under *section 9O(1)*.

Division 3B - Approaches that may be used by authorized institutions to calculate operational risk

9Q. Calculation of operational risk

An authorized institution shall -

(a) subject to *paragraphs (b)* and *(c)*, only use the BIA to calculate its operational risk;

(b) subject to *paragraph (c)* and *section 9R*, only use the STO to calculate its operational risk if it has the approval to do so under *section 9S*;

(c) subject to *section 9R*, only use the ASA to calculate its operational risk if it has the approval to do so under *section 9S*.

9R. Monetary Authority may require authorized institution to use BIA to calculate its operational risk instead of STO or ASA

(1) Where -

(a) an authorized institution is using the STO or ASA to calculate its operational risk; and

(b) the Monetary Authority is satisfied that, if the institution were to make a fresh application under *section 9S* for approval to use the STO or ASA to calculate its operational risk, such approval would be refused,

then the Monetary Authority may, by notice in writing given to the institution, require the institution to calculate its operational risk by using the BIA instead of the STO or ASA, as the case may be -

(c) in respect of all of its business, or parts of its business, as specified in the notice; and

(d) beginning on such date, or the occurrence of such event, as is specified in the notice and ending on such date, or the occurrence of such event, as is specified in the notice.

(2) An authorized institution shall comply with the requirements of a notice given to it under *subsection (1)*.

9S. Application by authorized institution for approval to use STO or ASA to calculate its operational risk

(1) An authorized institution may make an application to the Monetary Authority for approval to calculate its operational risk by using the STO or ASA.

(2) Subject to *subsections (3)* and *(4)*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to calculate its operational risk by using the STO or ASA; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to use the STO or ASA to calculate its operational risk if any one or more of the criteria specified in *Schedule 1B* applicable to or in relation to the institution are not fulfilled with respect to the institution.

(4) The Monetary Authority shall not grant approval to an authorized institution to use the ASA to calculate its operational risk unless the institution satisfies the Monetary Authority that the use of the ASA would provide a more accurate assessment of the degree of operational risk to which the institution is exposed than would the use of the STO.

Division 4 - Solo, solo-consolidated and consolidated bases for calculation of capital adequacy ratio

10. Calculation of capital adequacy ratio on solo basis, solo-consolidated basis or consolidated basis

(1) An authorized institution shall -

(a) use the solo basis to calculate its capital adequacy ratio or, if it has the approval to do so under *section 12(2)(a)*, use the solo-consolidated basis to calculate its capital adequacy ratio; and

(b) subject to *section 15*, use the consolidated basis to calculate its capital adequacy ratio covering risk-weighted amounts for all relevant risks of the consolidation group, if any.

(2) Subject to *section 15*, the Monetary Authority may in a section 98(2) requirement, require the capital adequacy ratio of an authorized institution to be calculated on a consolidated basis in respect of a subsidiary of the institution (other than a subsidiary which is an insurance firm or securities firm) where -

(a) more than 50% of the total assets/total income of the subsidiary consist of the carrying out of one or more than one relevant financial activity; or

(b) the Monetary Authority is satisfied that, after taking into account the nature of the business undertaken by the subsidiary, the institution must calculate its capital adequacy ratio on a consolidated basis in respect of that subsidiary if a relevant risk of the institution is to be adequately identified and assessed.

(3) In this section -

"relevant financial activity" ( ), in relation to a subsidiary of an authorized institution, means -

(a) an activity which is ancillary to a principal activity of the institution, including -

(i) owning and managing the institution's property; and

(ii) performing information technology functions for the institution;

(b) lending, including -

(i) the provision of consumer or mortgage credit;

(ii) factoring;

(iii) forfeiting; and

(iv) the provision of guarantees and other financial commitments;

(c) financial leasing;

(d) money transmission services;

(e) issuing and administering a means of payment, including -

(i) credit cards;

(ii) travellers' cheques; and

(iii) bank drafts;

(f) trading for the company's own account, or for accounts of the company's customers, in -

(i) money market instruments;

(ii) foreign exchange;

(iii) financial instruments which are traded on an exchange;

(iv) OTC derivative transactions; or

(v) transferable securities;

(g) participating in securities issues, including the provision of services relating to the issues;

(h) the provision of -

(i) advice to undertakings on capital structure or industrial strategy, including any matter related to capital structure or industrial strategy; or

(ii) advice and services relating to mergers and the purchase of undertakings;

(i) money broking; or

(j) portfolio management and the provision of advice in relation to portfolio management.

11. Solo basis for calculation of capital adequacy ratio

(1) An authorized institution shall in calculating its capital adequacy ratio on a solo basis -

(a) aggregate the institution's (including the institution's local branches and overseas branches) risk-weighted amounts for -

(i) credit risk as calculated in accordance with *Division [..]* of *Part 4*, *Division [..]* of *Part 5*, *Division [..]* of *Part 6* or *Division [..]* of *Part 7*;

(ii) market risk as calculated in accordance with *Division [..]* or *[..]* of *Part 8*; and

(iii) operational risk as calculated in accordance with *Division 1*, *2* or *3* of *Part 9*; and

(b) determine the institution's capital base, in accordance with *Part 3*, to reflect the fact that it is calculating its capital adequacy ratio on a solo basis.

(2) For the avoidance of doubt, it is hereby declared that, for the purposes of this section, an authorized institution shall risk-weight the exposures of an overseas branch of the institution in accordance with the provisions of these Rules.

12. Solo-consolidated basis for calculation of capital adequacy ratio

(1) An authorized institution may make an application to the Monetary Authority for approval to calculate its capital adequacy ratio on a solo-consolidated basis instead of a solo basis in respect of such of its subsidiaries that are members of its consolidation group as are specified in the application.

(2) Subject to *subsection (3)*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to calculate its capital adequacy ratio on a solo-consolidated basis instead of a solo basis in respect of such subsidiaries of the institution as are specified in the approval and giving the institution a section 98(2) requirement to give effect to such approval; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to calculate its capital adequacy ratio on a solo-consolidated basis instead of a solo basis in respect of a subsidiary of the institution unless the institution satisfies the Monetary Authority that -

(a) the subsidiary is wholly owned by, and managed as if it were an integral part of, the institution;

(b) the subsidiary is wholly financed by the institution such that the subsidiary has no depositors or other external creditors except external creditors for -

(i) audit fees;

(ii) company secretarial services; and

(iii) sundry operating expenses; and

(c) there are no regulatory, legal or taxation constraints on the transfer of the subsidiary's capital to the institution.

(4) Subject to *subsection (5)*, an authorized institution shall in calculating its capital adequacy ratio on a solo-consolidated basis -

(a) aggregate the institution's (including the institution's local branches and overseas branches), and its solo-consolidated subsidiaries', risk-weighted amounts for -

(i) credit risk as calculated in accordance with *Division [..]*,of *Part 4*, *Division [..]* of *Part 5*, *Division [..]* of *Part 6* or *Division [..]* of *Part 7*;

(ii) market risk as calculated in accordance with *Division [..]* or *[..]* of *Part 8*; and

(iii) operational risk as calculated in accordance with *Division 1*, *2*, or *3* of *Part 9*; and

(b) determine the institution's capital base, in accordance with *Part 3*, to reflect the fact that it is calculating its capital adequacy ratio on a solo-consolidated basis.

(5) An authorized institution which calculates its capital adequacy ratio on a solo-consolidated basis shall ensure that, in calculating that ratio, the risk-weighting of a relevant risk does not include inter-company balances with, and transactions between, the institution and its solo-consolidated subsidiaries.

(6) An authorized institution which has been granted an approval under *subsection (2)(a)* shall give notice in writing to the Monetary Authority -

(a) of the occurrence of any event ("relevant event") which could reasonably be construed as causing, or potentially causing, whether by itself or in conjunction with any other event, a subsidiary of the institution to fall outside paragraph *(a)*, *(b)* or *(c)* of *subsection (3)*; and

(b) as soon as is practicable after the occurrence of the relevant event.

13. Consolidated basis for calculation of capital adequacy ratio

(1) An authorized institution shall in calculating its capital adequacy ratio on a consolidated basis -

(a) aggregate the consolidation group's (including the institution's local branches and overseas branches) risk-weighted amounts for -

(i) credit risk as calculated in accordance with *Division [..]*, of *Part 4*, *Division [..]* of *Part 5*, *Division [..]* of *Part 6* or *Division [..]* of *Part 7*;

(ii) market risk as calculated in accordance with *Division [..]* or *[..]* of *Part 8*; and

(iii) operational risk as calculated in accordance with *Division 1*, *2* or *3* of *Part 9*; and

(b) determine the consolidation group's capital base, in accordance with *Part 3*, to reflect the fact that it is calculating its capital adequacy ratio on a consolidated basis.

(2) Subject to *subsection (3)* and *section 13A* it is hereby declared that, under the consolidated basis for the calculation of the capital adequacy ratio of an authorized institution, the institution shall ensure that -

(a) the risk-weighting of a relevant risk does not relate to the exposures of a subsidiary of the institution which is not a member of the consolidation group; and

(b) the risk-weighting of a relevant risk does not include inter-company balances with, and transactions between, members of the consolidation group.

(3) An authorized institution which calculates its capital adequacy ratio on a consolidated basis may, insofar as its market risk is concerned -

(a) net off balances between members of the consolidation group; and

(b) offset market risk positions between members of the consolidation group,

if -

(c) the market risk positions of the members are monitored and managed on a group basis;

(d) there are no regulatory, legal or taxation constraints to mutual financial support between the members; and

(e) there are no regulatory, legal or taxation constraints on the transfer of funds between the members.

(4) An authorized institution which calculates its capital adequacy ratio on a consolidated basis shall give notice in writing to the Monetary Authority of -

(a) the following matters -

(i) a subsidiary ceasing to be a subsidiary of the institution;

(ii) a new subsidiary of the institution;

(iii) the principal activities of a subsidiary referred to in *subparagraph (ii)*;

(iv) any significant change to the principal activities of the institution or any of its subsidiaries (including a subsidiary referred to in *subparagraph (ii)*); and

(b) as soon as is practicable after the institution is aware of the matter or ought reasonably to be aware of the matter.

13A. Provisions supplementary to *section 13*

[(1) Provision not used.]

[(2) Subject to *sections 9A* and *9B*, an authorized institution which calculates its capital adequacy ratio on a consolidated basis may use the IRB, in combination with the STC or BSA, or both, to calculate its credit risk for non-securitization exposures on that basis if it satisfies the Monetary Authority that it is not practicable for the IRB to be solely used to calculate the institution's credit risk on that basis.

(3) With the prior consent of the Monetary Authority, an authorized institution which calculates its capital adequacy ratio on a consolidated basis may use the IMA in combination with the STM to calculate its market risk on that basis if it satisfies the Monetary Authority that it is not practicable for the IMA to be solely used to calculate the institution's market risk on that basis.

[(4) Provision not used.]

(5) Where an authorized institution which calculates its capital adequacy ratio on a consolidated basis uses the BIA to calculate its operational risk, then -

(a) subject to *paragraph (b)*, the institution may, in calculating the gross income of the consolidation group in any given year of the last 3 years, offset a positive gross income of a member of the group in the given year with a negative gross income of another member of the group in that given year;

(b) the institution shall not, pursuant to *paragraph (a)*, offset positive gross income with negative gross income between any of the last 3 years.

(6) Where an authorized institution which calculates its capital adequacy ratio on a consolidated basis uses the STO or ASA to calculate its operational risk then -

(a) subject to *paragraph (b)*, the institution may, in calculating the gross income of the consolidation group in any given year of the last 3 years, offset a positive gross income of a standardized business line of a member of the group in the given year with a negative gross income of that standardized business line of another member of the group in that given year;

(b) the institution shall not, pursuant to *paragraph (a)*, offset positive gross income with negative gross income between any of the last 3 years.

(7) Subject to *subsection (8)*, an authorized institution which calculates its capital adequacy ratio on a consolidated basis shall do so using the same approach in calculating a relevant risk as it would be required to use if it were calculating that ratio on an unconsolidated basis.

(8) An authorized institution is not required to comply with *subsection (7)* in respect of such members of the consolidation group as the Monetary Authority permits in a prior consent given by the Monetary Authority to the institution.

[**14. Provision not used]**

15. Exceptions to *section 10*

(1) Where -

(a) an authorized institution calculates its capital adequacy ratio on a consolidated basis; and

(b) an eligible subsidiary of the institution incorporated in a country other than Hong Kong calculates its capital adequacy ratio on a solo basis in accordance with the capital adequacy standards applicable in that country,

then the institution may make an application to the Monetary Authority for approval to risk-weight the eligible subsidiary's exposures in accordance with those standards instead of in accordance with these Rules.

(2) Subject to *subsection (3)*, the Monetary Authority shall determine an application under *subsection (1)* from an authorized institution by -

(a) granting approval to the institution to risk-weight the exposures of the eligible subsidiary specified in the application in accordance with the capital adequacy standards applicable in the country where the eligible subsidiary is incorporated instead of in accordance with these Rules and giving the institution a section 98(2) requirement to give effect to such approval; or

(b) refusing to grant such approval.

(3) Without limiting the generality of *subsection (2)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to risk-weight the exposures of an eligible subsidiary of the institution in accordance with the capital adequacy standards applicable in the country in which the eligible subsidiary is incorporated instead of in accordance with these Rules unless the institution satisfies the Monetary Authority that the use of those standards would not cause a significant impact on the institution's capital adequacy ratio.

(4) An authorized institution which calculates its capital adequacy ratio on a consolidated basis may make an application to the Monetary Authority for approval to calculate that ratio by excluding one or more than one member from the consolidation group.

(5) Subject to *subsection (6)*, the Monetary Authority shall determine an application under *subsection (4)* from an authorized institution by -

(a) granting approval to the institution to calculate its capital adequacy ratio by excluding from the consolidation group such members of the group as the Monetary Authority specifies and giving the institution a section 98(2) requirement to give effect to such approval; or

(b) refusing to grant such approval.

(6) Without limiting the generality of *subsection(5)(b)*, the Monetary Authority shall refuse to grant approval to an authorized institution to calculate its capital

adequacy ratio by excluding from the consolidation group any member of the group unless the institution satisfies the Monetary Authority that the inclusion of that member in the group -

(a) would be inappropriate or misleading; or

(b) is not practicable due to regulatory, legal or taxation constraints on the transfer of information necessary to enable the institution to calculate that ratio on a consolidated basis in respect of that member.

Division 5 - Decisions made by Monetary Authority under this Part that are decisions to which section 101B(1) of the Ordinance applies

15A. Reviewable decisions

A decision made by the Monetary Authority under *section 4(2)*, *9I(2)* or *9S(2)* is a decision to which section 101B(1) of the Ordinance applies.

[SCHEDULE 1

[*s. 4(3)(b)*]

MINIMUM CRITERIA FOR APPROVAL UNDER *SECTION 4* OF THESE RULES TO USE IRB TO CALCULATE CREDIT RISK OF AUTHORIZED INSTITUTIONS FOR NON-SECURITIZATION EXPOSURES

1. An authorized institution has demonstrated to the satisfaction of the Monetary Authority that -

   (a) the board of directors (or a committee designated by the board for the purpose) and the senior management of the institution -

      (i) approve all the key elements of, and any material changes to, the institution's rating system;

      (ii) possess an understanding of the design and operation of, and the management reports generated by, the institution's rating system adequate for them to perform their functions specified in this paragraph;

      (iii) exercise oversight of the operation of the institution's rating system sufficient to ensure that the rating system operates in a prudent and consistently effective manner;

      (iv) ensure that there is a reporting system within the institution to provide information (including any material changes to, or deviations from, established policies and procedures or any material findings identified in *paragraph (j)* that will

affect the operation of the institution's rating system) to them on a regular basis and in sufficient detail as will enable them to -

(A) exercise the oversight referred to in *subparagraph (iii)*,

(B) judge the continuing suitability of the institution's rating system and the adequacy of the controls supporting the rating system, and

(C) make informed decisions relating to credit approval, risk management and corporate governance and (where *paragraph (b)(vi)(A)* is applicable) internal capital allocation;

(b) the institution's rating system -

(i) is suitable for the purpose of identifying, measuring and assessing the institution's credit risk taking into account the characteristics and extent of the institution's credit exposures;

(ii) is capable of generating reasonably accurate, consistent and verifiable credit risk components and of calculating the institution's regulatory capital for credit risk;

(iii) is operated in a prudent and consistently effective manner;

(iv) is operated in compliance with *Part 5* of these Rules or in a manner which although not fully in compliance with that

Part, will not result in any material non-compliance with other criteria specified in this section;

(v) plays an integral role in the institution's ongoing credit approval, risk management and corporate governance functions;

(vi) either -

(A) plays an integral role in the institution's ongoing internal capital adequacy assessment; or

(B) will eventually play, within a period and in a manner agreed to by the Monetary Authority, an integral role in the institution's ongoing internal capital adequacy assessment once the systems and procedures presently being developed by the institution for conducting such assessment are implemented in accordance with a plan agreed to by the Monetary Authority;

(vii) is applied by the institution so as to satisfy the minimum IRB coverage ratio set out in *section [.]* of these Rules; and

(viii) enables the institution to comply with the Capital (Disclosure) Rules (L.N [..] of 2006) in respect of any disclosures required under those Rules by the institution in respect of -

(A) the institution's credit exposures; and

(B) the manner in which the institution manages its credit risk;

(c) the institution has a credit risk control function that is -

(i) functionally independent from the staff and management responsible for originating credit exposures; and

(ii) responsible for -

(A) the design or selection, testing and implementation of the institution's rating system;

(B) the oversight of the performance of the institution's rating system;

(C) the monitoring and review of any override relating to the inputs to, or the outputs of, the institution's rating system;

(D) the production and analysis of the management reports generated by the institution's rating system; and

(E) the ongoing review of, and alterations to, the institution's rating system;

(d) the staff of the institution responsible for any aspect of the institution's rating system, including credit risk control and internal validation, are qualified and trained to undertake that responsibility;

(e) the institution clearly documents all the key elements of, and the history of major changes in, the institution's rating system and the contents of such documentation are consistent with, and evidence the institution's compliance with, the criteria specified in this section;

(f) the institution has an effective system to collect, store, process, retrieve and utilize data on obligor and facility characteristics and default and loss statistics in respect of the institution's credit exposures in a reliable and consistent manner, and the data stored is in sufficient detail as will enable the institution to comply with the criteria specified in this section;

(g) where the institution uses statistical models or expert judgement-based models to assign obligors to obligor grades or transactions to facility grades and to estimate the credit risk components, the models used by the institution have good predictive power in relation to the institution's credit exposures, and the use of such models will not result in any distortion in the institution's regulatory capital;

(h) the institution has a sound stress-testing programme conducted regularly for the assessment of the adequacy of -

(i) the institution's regulatory capital and (where *paragraph (b)(vi)(A)* is applicable) internal capital; and

(ii) the institution's ability to withstand any possible future events or changes in economic conditions that could have adverse effects on the institution's credit exposures; and

(i) the institution has a reliable system for validating the accuracy and consistency of its rating system (including models used in *paragraph (g)*) through -

(i) vetting data inputs of the institution's rating system;

(ii) monitoring the outputs into the institution's rating system;

(iii) monitoring the correlation of the variables used in the institution's rating system;

(iv) implementing an effective control process for making changes to the institution's rating system in response to the results of the validation; and

(v) reviewing any proposed development of the institution's rating system to assess whether the rating system will function effectively as intended if the proposed development is implemented; and

(j) an independent review or audit of the institution's compliance with the criteria specified in this section is conducted regularly by the institution's internal auditors or by independent external parties that are qualified to do so.

2. Without prejudice to the generality of *section 1*, an authorized institution shall demonstrate to the satisfaction of the Monetary Authority that -

(a) the suitability and capability of the institution's rating system for complying with *section 1(b)(i)* and *(ii)* are demonstrated by parallel calculations carried out over 4 consecutive calendar quarters prior to the use of the IRB for the calculation of the institution's regulatory capital or over such other period as the Monetary Authority considers reasonable in all the circumstances of the case; and

(b) the institution has been using a rating system, and estimates of the credit risk components generated by the rating system, which are broadly consistent with *Part 5* of these Rules for the estimation of credit risk components and the calculation of the risk-weighted amount for the credit risk under the IRB, in its credit approval, risk management and corporate governance functions and (where *section 1(b)(vi)(A)* is applicable) internal capital adequacy assessment for not less than 2 years prior to the use of the IRB for the calculation of the institution's regulatory capital or for such other period as the Monetary Authority considers reasonable in all the circumstances of the case.

SCHEDULE 1*A*

[*ss. 9I & 9K*]

MINIMUM CRITERIA FOR APPROVAL UNDER *SECTION 9I* OF THESE RULES TO USE IMA TO CALCULATE MARKET RISK OF AUTHORIZED INSTITUTION

General

1. The Monetary Authority is satisfied that the authorized institution's market risk management system is -

   (a) suitable for the purpose of identifying, measuring and controlling the institution's market risk taking into account the characteristics and extent of the institution's market risk exposures; and

   (b) operated in a prudent and consistently effective manner.

Qualitative criteria

2. Without limiting the generality of *section 1*, the Monetary Authority is satisfied that -

   (a) the board of directors and senior management of the authorized institution exercise sufficient oversight of the institution's market risk control process as will enable them to ensure that the process will achieve its objectives;

   (b) regular reports on the authorized institution's market risk profile are submitted to the institution's board of directors and senior management for review purposes;

(c) the authorized institution has a risk control unit, functionally independent from the institution's personnel and management responsible for originating and trading market risk exposures, which -

(i) is responsible for -

(A) designing or selecting and implementing the institution's risk management system;

(B) producing and analysing daily reports based on the output of the institution's internal models the subject of the application ("relevant models");

(C) conducting a regular back-testing programme to verify the accuracy and reliability of the relevant models; and

(D) conducting the initial and ongoing validation of the relevant models; and

(ii) reports directly to the institution's senior management;

(d) the authorized institution has a sufficient number of staff with experience and expertise in the use of the relevant models in the institution's trading, risk control, audit and back office units as will enable the units to function effectively in identifying, measuring and controlling the institution's market risk exposures;

(e) the use of the relevant models forms an integral part of the authorized institution's daily risk management process, the VaR

measures generated from the relevant models are used in determining the institution's trading and exposure limits and the relationship between the relevant models and those limits is consistent over time and understood by the institution's staff engaged in trading activity and its senior management;

(f) the authorized institution undertakes a regular and comprehensive stress-testing programme and the results of stress tests are -

(i) reported routinely to the institution's senior management and periodically to the institution's board of directors or its designated committee; and

(ii) taken into account in -

(A) setting the institution's policies and trading and exposure limits; and

(B) performing the institution's internal assessment of adequacy of the capital held by the institution, or other financial resources available to the institution, to withstand future events, or changes in market conditions, that could have adverse effects on its market risk exposures;

(fa) the authorized institution properly documents its internal policies, controls and procedures relating to the operation of the relevant models;

(g) the authorized institution has -

(i) a system for monitoring and ensuring compliance with its documented internal policies, controls and procedures concerning the operation of the relevant models; and

(ii) a well-documented manual on the relevant models that describes the basic principles of the institution's risk management system and provides an explanation of the empirical techniques used to measure market risk;

(h) the authorized institution has policies and procedures to ensure that the valuation of its positions is prudently made whenever there are uncertainties affecting the accuracy of valuation estimates;

(i) an independent review of the market risk management system is carried out regularly in the authorized institution's internal auditing process and covers both the activities of the institution's trading units and of the risk control unit;

(j) the relevant models have a proven track record of acceptable accuracy in measuring market risk;

(k) the authorized institution has processes in place to ensure that the relevant models are adequately validated -

(i) by parties -

(A) who possess relevant experience and expertise and who are independent of the development of the relevant models; and

(B) whose aim is to ascertain whether or not the relevant models are conceptually sound and able to capture all material market risk;

(ii) when a relevant model is initially developed and when any significant changes are made to the relevant model; and

(iii) on a periodic basis or when there have been significant structural changes in the market or changes to the composition of the institution's portfolio of exposures which might lead to the relevant model concerned no longer being adequate to capture all material market risk;

(l) the authorized institution has -

(i) adequate model validation procedures to assess the relevant models;

(ii) procedures to ensure that both the assumptions and approximations underlying the relevant models are appropriate for the measurement of the institution's market risk exposures; and

(iii) appropriate methods of assessing the validity of the performance of, and the results generated by, the relevant models and does not rely purely on the results of back-testing; and

(m) the relevant models capture and accurately reflect, on a continuing basis, all material market risk factors inherent in the authorized institution's market risk exposures.

Quantitative criteria

3. Without limiting the generality of *section 1*, the Monetary Authority is satisfied that -

(a) in respect of the relevant models -

(i) VaR is computed on a daily basis;

(ii) a one-tailed 99% confidence interval is used in calculating VaR;

(iii) the minimum holding period used by, or assumed by, the relevant models is 10 trading days in respect of the authorized institution's portfolio of exposures;

(iv) subject to *subparagraph (va)*, the historical observation period for calculating VaR is not less than 250 trading days;

(v) if the institution uses a weighting scheme to the historical observations for the calculation of VaR, a higher weighting is assigned to recent observations;

[(va) the institution is able to use a shorter observation period for the calculation of VaR if the Monetary Authority requests it to do so on the ground that the Monetary Authority is of the opinion that the request is justified due to a significant

increase in volatility in the price of the institution’s portfolio of exposures;]

(vi) data used are updated at least once every 3 months and are reassessed whenever market prices are subject to material changes;

(vii) the relevant models only recognize empirical correlations within and across risk categories if the institution's system for identifying and measuring correlations is effective for its purpose and implemented in a prudent manner; and

(viii) the relevant models accurately capture the unique risks associated with options exercisable under option contracts and, in particular -

(A) the relevant models are able to estimate the non-linear price movements of the institution's positions under those contracts;

(B) in calculating VaR, a price shock (being an instantaneous 10-day movement in prices) is applied to the institution's option positions or positions that display option-like characteristics or, if the institution is unable to perform a full 10-day price shock, the institution is able to use periodic simulation or stress-testing to adjust the capital requirement for such positions;

[(C) paragraph not used.]

(D) the relevant models are able to estimate the vega risk of the institution's option positions; and

(E) if the institution's portfolio of option exposures is relatively large or complex, the institution is able to estimate in detail the volatility of option positions at different maturities.

[(b) paragraph not used.]

Additional criteria relating to models for the calculation of market risk capital charge for specific risk

4. Without [limiting] the generality of *section 1*, the Monetary Authority is satisfied that, if the authorized institution uses the relevant models to calculate the market risk capital charge for specific risk, then -

(a) the relevant models capture all material components of market risk and are responsive to changes in market conditions and the composition of the institution's portfolios of exposures and, in particular -

(i) are capable of providing a justification for the historical price variation in the portfolios;

(ii) are sensitive to changes in portfolio construction and require higher market risk capital charge for portfolios that have increased concentrations in particular issuers or sectors of exposures;

(iii) are able to signal rising market risk in an adverse environment;

(iv) are sensitive to material idiosyncratic differences between similar but not identical positions (including debt positions with different levels of subordination, maturity mismatches, or credit derivative contracts with different credit events);

(v) are able to capture events that are reflected in large changes in prices ("event risk"); and

(vi) are validated through back-testing aimed at assessing whether specific risk is being captured adequately;

(b) if the institution is subject to event risk that is not reflected in its VaR measure because it is outside the 10-day holding period and 99% confidence interval, the institution has ensured that the impact of event risk is factored into its internal assessment process through stress-testing as referred to in *section 2(f)*;

(c) the relevant models conservatively assess the risk arising from less liquid positions and positions with limited price transparency under realistic market scenarios;

(d) proxies are only used, for positions referred to in *paragraph (c)* -

(i) where available data are insufficient or not reflective of the true volatility of an exposure or portfolio of exposures;

(ii) which are conservative; and

(iii) conservatively;

(e) the institution has, for the purposes of calculating the market risk capital charge, an approach -

  (i) to separately capture the default risk of its trading book positions if the institution cannot capture, or adequately capture, such risk in the relevant models; and

  (ii) comprised within the relevant models or in the form of a surcharge separately calculated by the institution; and

(f) the institution is able to demonstrate that it meets the qualifying standards comparable to those of the IRB for the calculation of credit risk, with any necessary adjustments to reflect the impact of liquidity, concentrations and hedging on, and the option characteristics of, its exposures.

SCHEDULE 1*B*

[*s. 9S*]

MINIMUM CRITERIA FOR APPROVAL UNDER *SECTION 9S* OF THESE RULES TO USE STO OR ASA TO CALCULATE OPERATIONAL RISK OF AUTHORIZED INSTITUTIONS

1. The Monetary Authority is satisfied that -

    (a) the board of directors and senior management of the authorized institution are actively involved in -

        (i) the oversight of the institution's entire risk management framework; and

        (ii) the management of the institution's operational risk;

    (b) the authorized institution has a dedicated operational risk management function to which specific duties have been assigned, including -

        (i) the development of strategies to identify, assess, monitor, control and mitigate the degree of operational risk to which the institution is exposed;

        (ii) the establishment of policies and procedures, in writing, applicable to the matters referred to in *subparagraph (i)*; and

        (iii) the development and implementation of -

            (A) an operational risk assessment methodology appropriate for the institution; and

(B) a reporting system for operational risk that is appropriate for the institution; and

(iv) ensuring that the persons involved in the matters referred to in *subparagraph (i)* have ready access to the policies and procedures referred to in *subparagraph (ii)*;

(c) the authorized institution has all of its policies, and controls and procedures, relating to its system for the management of its operational risk well documented, including policies to deal with any failure to comply with such policies or such controls and procedures;

(d) the authorized institution has implemented a system to ensure compliance with the policies, and controls and procedures, referred to in *paragraph (c)*;

(e) the authorized institution has implemented a system requiring regular reports to be made -

(i) of information concerning the institution's operational risk, including -

(A) the results of any self-risk assessment of the institution's operational risk;

(B) the key risk indicators;

(C) information concerning the actual or potential losses that have arisen or may arise as a result of the institution's operational risk that are, in the context

of the volume of the institution's business, material; and

(D) information concerning major operational events affecting the institution's operational risk;

(ii) to the managers of the various business units of the institution and the chief executives and directors of the institution; and

(iii) of information of such a nature and within such time frame as will support the proactive management of the institution's operational risk;

(f) the authorized institution has established procedures for taking appropriate and timely action in response to the information provided pursuant to reports referred to in *paragraph (e)*;

(g) the authorized institution has an established assessment system for its operational risk which is -

(i) capable of systematically keeping track of relevant data concerning the institution's operational risk, in particular any material losses arising due to operational risk in different business lines of the institution; and

(ii) closely integrated into the institution's processes for the management of its operational risk;

(h) the authorized institution has resources sufficient to -

(i) properly use the STO or ASA to calculate its operational risk in relation to the institution's major business lines;

(ii) properly control such use of the STO or ASA; and

(iii) audit such use, and audit such control of such use, of the STO or ASA;

(i) the authorized institution's process for the management of its operational risk and the system for assessing its operational risk are subject to validation and regular independent reviews by the institution's internal auditors or by external auditors; and

(j) the reviews referred to in *paragraph (i)* include the activities of particular business units of the institution and of the operational risk management function of the institution.

2. The Monetary Authority is satisfied that -

(a) the authorized institution has, for the purposes of using the STO or ASA to calculate its operational risk, policies and criteria in writing applicable to the institution's mapping of the gross income it recognises from its current business lines into the standardized business lines;

(b) the authorized institution has in place a system for regularly reviewing and revising the policies and criteria referred to in *paragraph (a)* to ensure that they continue to be appropriate for new or changing activities or products;

(c) the authorized institution has categorized, or is capable of categorizing, all its business activities into the 8 standardized business lines by the application of the following principles -

(i) each business activity of the institution is to be mapped into only one of the standardized business lines;

(ii) any business activity of the institution which cannot be readily mapped into one of the standardized business lines but which is ancillary to one only of the standardized business lines is allocated to the standardized business line to which it is so ancillary;

(iii) any business activity of the institution which cannot be readily mapped into one of the standardized business lines but which is ancillary to 2 or more standardized business lines ("relevant business lines") is allocated to one only, or to 2 or more, of the relevant business lines by the application of objective mapping criteria (which may be, or include, allocation to that relevant business line to which the business activity is principally ancillary, or to 2 or more relevant business lines in proportion to the time spent on the respective relevant business lines);

(iv) where none of the principles set out in *subparagraphs (i), (ii)* and *(iii)* enables the institution to map gross income in respect of a particular business activity ("relevant business

activity") into a particular standardized business line, the institution -

(A) attributes the gross income to any standardized business line allocated the highest capital charge factor under the calculation framework set out in *section [..](1)(d)* of these Rules; and

(B) also allocates to that standardized business line any business activity which is ancillary to the relevant business activity;

(v) if the institution uses internal pricing methods to allocate gross income between standardized business lines, the total gross income for the institution must still equal the sum of the gross income for the 8 standardized business lines;

(vi) the institution's mapping of its business activities into standardized business lines for the purposes of calculating its operational risk is consistent with the definitions of standardized business lines used for the calculation of the institution's credit risk or market risk or, if there is an inconsistency -

(A) the inconsistency is readily identified as such in writing; and

(B) the reasons for the inconsistency are set out in writing;

(vii) the institution keeps a record in writing of -

(A) the definitions used by it of its standardized business lines for the purposes of calculating its operational risk;

(B) the processes used by it to map its business activities into the standardized business lines; and

(C) any exceptions (including inconsistencies) to the policies or criteria applied by the institution in mapping its business activities into the standardized business lines;

(viii) the institution has established systems, policies and procedures to readily map into its standardized business lines any new business activity carried out or to be carried out by the institution or any new product provided or to be provided by the institution;

(ix) the senior management of the institution is responsible for the development, implementation and oversight of the institution's policy in relation to mapping its business activities into the standardized business lines and the board of directors of the institution are responsible for approving the principal elements of that policy and any major revision to those elements; and

(x) the process by which the institution maps its business activities into the standardized business lines is regularly reviewed by a party independent from that process.

Explanatory Note

Part 2 - Application of these Rules

Division 1 - Approaches that may be used by authorized institution to calculate credit risk for non-securitization exposures

1. *Section 3(1)* specifies that an authorized institution must use the standardized approach ("STC") to calculate its credit risk for non-securitization exposures (see *Part 4*) unless it has the approval of the MA to use the basic approach ("BSA") to calculate its credit risk (see *Part 6*) or the internal ratings-based approach ("IRB") to calculate its credit risk (see *Part 5*) for such exposures. (See the definitions of "non-securitization exposure" and "securitization exposure" in *section 2(1)*). *Section 4* specifies that the MA shall refuse to grant approval to an authorized institution to use the BSA or IRB to calculate its credit risk if any of the criteria specified in *section 5* (in the case of the BSA) or *Schedule 1* (in the case of the IRB) are not fulfilled with respect to the institution. *Section 4A* specifies the circumstances in which the MA shall, for the purposes of *Schedule 1* (that is, the minimum criteria that must be satisfied before the IRB can be used), take into account an assessment outside Hong Kong of an authorized institution's rating system.

2. *Section 7* provides that the use by an authorized institution of the BSA to calculate its credit risk for non-securitization exposures on the ground specified in *section 5(b)* is for a transitional period only (see the definition of "transitional period" in *section 2(1)*), as it is intended that such an institution shall eventually use only the STC or IRB, or a combination of the two, to calculate credit risk. [*Section 8* provides, inter alia, that an authorized institution shall not use more than one approach (that is, the STC, BSA or IRB) to calculate its credit risk in respect of all its exposures falling within one IRB class of exposures of the institution.]

3. *Section 9* specifies the action that may be taken by the MA if an authorized institution which uses the BSA or IRB to calculate its credit risk for non-securitization exposures can no longer fulfil the criteria specified in *section 5* or *Schedule 1*, as the case may be. Two of the more important actions that may be taken by the MA are to require such an authorized institution to use the STC instead of the BSA or IRB to calculate its credit risk in respect of all or parts of the business as specified by the MA and, in the case of such an authorized institution using the IRB to calculate its credit risk, to require the institution to adopt measures which, in the opinion of the MA, will cause the institution to again fulfil the criteria specified in *Schedule 1* or will cause the effect of not fulfilling such criteria to be mitigated.

Division 2 - Specific requirements for IRB

3AA. *Section 9A(1)* requires an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures to have an IRB coverage ratio of not less than 85% or not less than such other percentage as is agreed between the MA and the institution. However, in the case of an authorized institution which has the prior consent of the MA to use the IRB to calculate its credit risk for exposures in phases (see *section 9E(4)*) during the transitional period (see the definition of "transitional period" in *section 2(1)*), that percentage is not less than 75%. *Section 9B* empowers the MA to exempt certain immaterial exposures of an authorized institution from the calculation of the institution's credit risk using the IRB. However, the institution is then required to use the STC to calculate its credit risk for non-securitization exposures the subject of the exemption and the STS to calculate its credit risk for securitization exposures the subject of the exemption. *Section 9C* empowers the MA to revoke, on specified grounds, such an exemption. *Section 9E* specifies the transitional arrangements applicable to an authorized institution which commences using the IRB during the transitional period.

[3AB. Paragraph not used]

***Division 3* - Approaches that may be used by authorized institution to calculate credit risk for securitization exposures**

3AC. *Section 9F* specifies that an authorized institution must use the standardized approach for securitization ("STS") to calculate its credit risk for securitization exposures (see *Part 7*) if it uses the standardized approach ("STC"), or the basic approach ("BSA"), to calculate its credit risk for the types of underlying exposures that are securitized. That section also specifies that an authorized institution may only use the internal ratings-based securitization approach ("IRBS") to calculate its credit risk for securitization exposures (see *Part 7*) if it uses the internal ratings-based approach ("IRB") to calculate its credit risk for the types of underlying exposures that are securitized. (See the definitions of "standardized approach for securitization", "securitization exposures", "standardized approach", "basic approach", "underlying exposures", "internal ratings-based securitization approach" and "internal ratings-based approach" in *section 2(1)*).

3AD. *Section 9G* specifies that an authorized institution which uses the IRBS to calculate its credit risk for securitization exposures shall use the ratings-based method ("RBM") to calculate the risk-weighted amount of its rated securitization exposures and, with the prior consent of the MA, use the supervisory formula method ("SFM") to calculate the capital charge for its unrated securitization

exposures. (See the definitions of "ratings-based method", "rated", "supervisory formula method" and "unrated" in *section 2(1)*).

Division 3A - Approaches that may be used by authorized institutions to calculate market risk

3AE. *Section 9H* specifies that an authorized institution must use the standardized approach ("STM") to calculate its market risk (see *Part 8*) unless it has the approval of the MA to use the internal models approach ("IMA") to calculate its market risk (see *Part 8*). However, *section 9H* also provides that if an authorized institution is a subsidiary of a bank ("parent bank") referred to in *paragraph (b)* of the definition of "bank", then it may use the approach adopted by the parent bank to calculate its market risk if it has the MA's approval to do so. Finally, *section 9H* does not apply to an exempt authorized institution (see the definition of "exempt" in *section 2(1)*).

3AF. *Section 9I* specifies that the MA shall refuse to grant approval to an authorized institution to use the IMA to calculate its market risk if any of the criteria specified in *Schedule 1A* are not fulfilled with respect to the institution. *Section 9J* provides that an approval under *section 9I* to use the IMA may be given to an authorized institution in respect of, *inter alia*, the institution's general market risk or specific risk (see the definitions of "general market risk" and "specific risk", in *section 2(1)*) or all of the institution's market risk. *Section 9K* specifies the action

that may be taken by the MA where an authorized institution using the IMA no longer fulfils the criteria specified in *Schedule 1A*.

3AG. *Section 9L(3)* specifies the 2 matters in respect of which the MA must be satisfied before granting approval to an authorized institution to calculate its market risk by using the approach adopted by its parent bank. *Section 9M* specifies the action that may be taken by the MA where the MA ceases to be satisfied in respect of those matters in the case of any authorized institution which calculates its market risk by using the approach adopted by its parent bank.

3AH. *Section 9N* prohibits, *inter alia*, an authorized institution which uses the IMA to calculate its market risk in respect of all or any part of its business to use the STM to calculate its market risk in respect of such business unless it has the prior consent of the MA to do so.

3AI. *Section 9O(1)* and *(2)* specifies the market risk positions which an authorized institution must have before the MA will exempt it from *section 9H*. The specific effect of an exemption is set out in *section 9O(4)(a)* and *(c)*. *Section 9P* empowers the MA to revoke an exemption under *section 9O* where the market risk positions of the authorized institution concerned fall outside the limits specified in *section 9O*.

***Division 3B* - Approaches that may be used by authorized institution to calculate operational risk**

3AJ. *Section 9Q* specifies that an authorized institution must use the basic indicator approach to calculate its operational risk (see *Division 1* of *Part 9*) unless it has the approval of the Monetary Authority ("MA") to use the standardized approach to calculate its operational risk (see *Division 2* of *Part 9*) or the alternative standardized approach to calculate its operational risk (see *Division 3* of *Part 9*). *Section 9R* empowers the MA, in the circumstance specified in *section 9R(1)(b)*, to require an authorized institution which is using the standardized or alternative standardized approach to calculate its operational risk to use the basic indicator approach to calculate its operational risk in respect of all of its business or such parts of its business as the MA specifies. *Section 9S* provides for applications to the MA by authorized institutions seeking the MA's approval to use the standardized or alternative standardized approach to calculate their operational risk and the MA's determination of the applications. It should be noted that the MA is prohibited from granting any such approval if the authorized institution concerned is unable to satisfy the MA that the relevant criteria specified in *Schedule 1B* to the Rules are fulfilled with respect to the institution.

Division 4 - Solo, solo-consolidated and consolidated bases for calculation of capital adequacy ratio

3A. *Section 10* requires an authorized institution to use both the solo basis and the consolidated basis to calculate its and its consolidation group's capital adequacy ratio. However, an authorized institution may use the solo-consolidated basis instead of the solo basis to calculate its capital adequacy ratio if it has approval to do so under *section 12(2)(a)*. It should be noted that the solo basis for the calculation of an authorized institution's capital adequacy excludes any subsidiaries of the institution from the calculation. The consolidated basis for the calculation includes the authorized institution's subsidiaries specified by the Monetary Authority in a section 98(2) requirement. The solo-consolidated basis for the calculation of an authorized institution's capital adequacy ratio permits, in effect, certain specialized subsidiaries within the institution’s consolidation group to be included in calculating the institution's solo risk-weighted exposures. The definitions of “consolidated basis”, “consolidation group”, “consolidation requirement”, “section 98(2) requirement”, “section 79A(1) requirement”, “solo basis”, “solo-consolidated basis”, “solo-consolidated subsidiary” and “subsidiary undertaking” are all relevant to understanding the provisions of *Division 4*.

3B. *Section 11* states what an authorized institution shall do in calculating its capital adequacy ratio on a solo basis. *Section 12* specifies that an authorized institution may make an application to the Monetary Authority for approval to calculate its

capital adequacy ratio on a solo-consolidated basis instead of a solo basis, specifies the grounds on which the Monetary Authority grants or refuses such approval and states what the institution shall do, if it is granted such approval, in calculating its capital adequacy ratio on a solo-consolidated basis.

3C. *Section 13* states what an authorized institution shall do in calculating its capital adequacy ratio on a consolidated basis. *Section 13A* contains provisions supplementary to *section 13*.

3D. *Section 15* permits, subject to the approval of the Monetary Authority, certain exceptions to the requirement in *section 10(1)* that an authorized institution calculate its capital adequacy ratio on a consolidated basis. The exceptions relate to approving the institution risk-weighting the exposures of an eligible subsidiary of the institution in accordance with the capital adequacy standards applicable to the country in which the subsidiary is incorporated, or to excluding certain subsidiaries from the institution's consolidation group.

First draft (Fourth Batch)

CAPITAL RULES

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CAPITAL RULES

(Made by the Monetary Authority under section 98A of the Banking Ordinance (Cap. 155)

as amended by the Banking (Amendment) Ordinance 2005)

PART 1

PRELIMINARY

1. Commencement

These Rules shall come into operation on a day to be appointed by the Secretary for Financial Services and the Treasury by notice published in the Gazette.

2. Interpretation

(1) In these Rules, unless the context otherwise requires -

"AIRB" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the institution -

(a) provides its own estimates of the PD, LGD and EAD; and

(b) measures the M,

for its corporate, sovereign or bank exposures;

"capital floor" ( ), in relation to an authorized institution which uses -

(a) the IRB to calculate its credit risk for non-securitization exposures; or

(b) the IRBS to calculate its credit risk for securitization exposures,

means the minimum regulatory capital of the institution -

(c) for its credit risk, market risk and, if applicable, operational risk; and

(d) calculated in accordance with *section [.]* or *sections 98* and *99*;

"cash items" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means -

(a) legal tender notes or other notes and coins -

(i) representing the lawful currency of a jurisdiction; and

(ii) held by the institution;

(b) the institution's holdings of Government certificates of indebtedness for the issue of legal tender notes;

(c) gold bullion -

(i) held by the institution; or

(ii) held for the institution, on an allocated basis, by another person,

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

(d) gold bullion -

(i) held by the institution; or

(ii) held for the institution,

which is not backed by gold bullion liabilities;

(e) cheques, drafts and other items drawn on other banks that are -

(i) payable to the account of the institution immediately upon presentation; and

(ii) in the process of collection;

(f) unsettled clearing items of the institution that are being processed through any interbank clearing system in Hong Kong;

(g) positive current exposure incurred by the institution from transactions -

(i) in securities (other than repo-style transactions), foreign exchange, and commodities that are entered into on a delivery-versus-payment basis; and

(ii) that are outstanding after the due settlement date in respect of the transaction concerned; or

(h) amounts receivable, and positive current exposure incurred, by the institution from transactions -

(i) in securities (other than repo-style transactions), foreign exchange, and commodities that are entered into on a non-delivery-versus-payment basis;

(ii) that are outstanding up to and including the 4th business day after the due settlement date in respect of the transaction concerned; and

(iii) with an amount of less than $10 million (being the sum of amounts receivable and positive current exposure incurred) for each such transaction;

"corporate" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a partnership or limited company, or an unincorporated business owned by not more than one natural person, that is not a public sector entity, bank or securities firm;

"corporate exposure" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a debt obligation -

(a) of a corporate to the institution; and

[(b) that is not classified, pursuant to *section 15(2)*, as a retail exposure falling into the IRB subclass of small business retail exposures;

"credit equivalent amount" ( ), in relation to an off-balance sheet exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the value obtained by -

(a) in the case of an exposure that is not an OTC derivative transaction or a credit derivative contract, multiplying the principal amount of the exposure by the applicable credit conversion factor; and

(b) in the case of an exposure that is an OTC derivative transaction or a 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, after taking into account the effect of any recognized netting as specified in *section 80*;

"credit risk components" ( ) means the estimates of the PD, LGD, EAD and M that 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;

"credit risk-weighted amount under IRB and IRBS" ( ), in relation to an authorized institution which uses -

(a) the IRB to calculate its credit risk for non-securitization exposures; and

(b) the IRBS to calculate its credit risk for securitization exposures,

means the sum of -

(c) the risk-weighted amount of the institution's non-securitization exposures calculated in accordance with *Part 5*; and

(d) the risk-weighted amount of the institution's securitization exposures calculated in accordance with *Part 7* insofar as that Part relates to the use of the IRBS;

"double default" ( ), in relation to an authorized institution's exposure that is the subject of recognized credit protection, means the default of the primary obligor and the provider of the credit protection;

"double default framework" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the methodology set out in *section 88* for recognizing the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts;

"exposure of default" ( ), in relation to an exposure of an authorized institution which uses -

(a) the IRB to calculate its credit risk for non-securitization exposures; or

(b) the IRBS to calculate its credit risk for non-securitization exposures,

means the expected amount of the exposure -

(c) upon the default of the obligor under the exposure (being, in the case of an off-balance sheet exposure, the credit equivalent amount); and

(d) measured without deduction of specific provisions and partial write-offs;

"facility grade" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a risk category of loss severity in the event of default within the facility rating scale of the institution's rating system, as measured by the LGD or EL, to which exposures are assigned on the basis of a specified and distinct set of internal rating criteria;

"financial firm" ( ), in relation to the recognition of guarantees and credit derivative contracts 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 that has an ECAI issuer rating of a credit quality grade of 3 or lower if mapped to the scale of uniform credit grades for banks, securities firms and corporates set out in *Schedule [..]*,

which -

(e) has provided, in the normal course of business, credit protection in respect of an exposure where the exposure is the subject of any counter-guarantee provided by a sovereign;

(f) was internally 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 the PD which, if mapped to the scale of uniform credit quality grades for banks, securities firms and corporates set out in *Schedule [..]*, would result in a credit quality grade of 2 or lower; and

(g) is currently assigned by the institution to an obligor grade with an estimate of the PD which, if mapped to the scale of uniform credit quality grades for banks, securities firms and corporates set out in *Schedule [..]*, would result in a credit quality grade of 3 or lower;

"FIRB" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the institution -

(a) provides its own estimates of the PD; and

(b) uses supervisory estimates for the other credit risk components,

of its corporate, sovereign or bank exposures;

"home country" ( ), in relation to a bank, means the jurisdiction in which the bank is incorporated;

"home supervisor" ( ), in relation to the parent bank of an authorized institution, means the banking supervisory authority which has the primary supervisory responsibility in respect of the parent bank on a consolidated basis;

"internal models method" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the IRB calculation approach which may be used in respect of the institution's equity exposures as set out in *section 56*;

["IRB class" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a class of non-securitization exposures specified in *Table 2* (including the IRB subclasses falling within that class);]

"IRB coverage ratio" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the ratio of the institution's credit risk-weighted amount under the use of the IRB and IRBS to the institution's total credit risk-weighted amount;

["IRB subclass" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a subclass of non-securitization exposures specified in *Table 2*;]

"loss" ( ), in relation to estimating the LGD under the use by an authorized institution of the IRB to calculate its credit risk for non-securitization exposures, means the loss likely to be incurred upon the default of the obligor under an exposure of the institution taking into account, where material, the effect of the time value of money, an appropriate risk premium and the direct and indirect costs associated with the recovery of the exposure;

"loss given default" ( ), in relation to an exposure of an authorized institution which uses -

(a) the IRB to calculate its credit risk for non-securitization exposures; or

(b) the IRBS to calculate its credit risk for securitization exposures,

means the ratio of the loss likely to be incurred by the institution upon the default of the obligor under the exposure to the EAD of the exposure;

"LGD" ( ) means loss given default;

"M" ( ) means maturity;

"maturity" ( ), in relation to a non-securitization exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the effective maturity of the exposure as measured or specified in accordance with *section 40* or *41*;

"obligor grade" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a risk category within the obligor rating scale of the institution's rating system representing an assessment of the risk of the default to which obligors are assigned on the basis of a specified and distinct set of internal rating criteria and from which estimates of the PD are derived;

"parent bank" ( ), in relation to an authorized institution, means the highest level of holding company of the institution, which is authorized as a bank in its home country, in the corporate structure of the group of companies of which the institution is a member;

"pool" ( ) means a category of exposures which have -

(a) similar obligor and transaction characteristics; and

(b) identical estimates of the PD, LGD and EAD;

"principal amount" ( ), in relation to an off-balance sheet exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means -

(a) subject to *paragraph (b)*, in the case of an exposure listed in *Table 6*, the contracted amount of the exposure;

(b) in the case of an exposure listed in *Table 6* which is an undrawn or partially drawn facility, the amount of the undrawn commitment;

(c) subject to *paragraph (d)*, in the case of an exposure listed in *Table [.]*, the notional amount of the exposure;

(d) in the case of an exposure listed in *Table [.]* 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;

"probability of default" ( ), in relation to an exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the probability of default of the obligor of the exposure over a one-year period;

"PD" ( ) means probability of default;

"PD/LGD approach" ( ), in relation to an equity exposure of an authorized institution which uses the IRB to calculate its credit risk for non-

securitization exposures, means the IRB calculation approach which may be used in respect of the equity exposure as set out in *sections 57* to *63*;

"rating system" ( ) means all the methods, models, process, controls, and data collection and information technology systems used by an authorized institution that 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" ( ) means a process by which an authorized institution's exposures previously classified as past due, the terms of which have not been changed, are subsequently classified as performing by reason of the obligor's subsequent good performance, notwithstanding that all outstanding arrears in respect of the exposure have not been repaid;

"regulatory capital arbitrage" ( ), in relation to an authorized institution, means the use by the institution of a combination of different credit risk calculation approaches in respect of the institution's credit exposures with the intention of minimizing its regulatory capital by selectively choosing a given credit risk calculation approach for certain exposures predominantly to achieve a lower regulatory capital;

"regulatory capital" ( ), in relation to an authorized institution, means the amount of capital the institution is required to hold in accordance with these Rules and the Ordinance in respect of its risk-weighted assets and risk-weighted exposures;

"residual value risk" ( ), in relation to a leasing transaction 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;

"risk-weight function" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a formula used to determine the risk-weight to be allocated to -

(a) the corporate, sovereign, bank and retail exposures of the institution; and

(b) the equity exposures of the institution if the institution uses the PD/LGD approach;

"seasoning" ( ), in relation to an exposure of an authorized institution, means an expected change of risk parameters over the contractual period of the exposure;

"specialized lending" ( ), in relation to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means a corporate exposure of the institution -

(a) to a corporate which owns or operates a specific asset;

(b) 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

(c) the primary source of repayment of which is the income generated by the specific asset;

"substitution approach" ( ), in relation to an authorized institution which uses IRB to calculate its credit risk for non-securitization exposures, means the methodology set out in *sections 85* to *87* for recognizing the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts;

["supervisory estimate" ( ), in relation to a non-securitization exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means -

(a) the risk-weight specified in *Part 5* in respect of the exposure; or

(b) the value specified in *Part 5* of a credit risk component in respect of the exposure as an input into a risk-weight function in order to calculate the risk-weight to be allocated to the exposure under the use of the IRB;]

"supervisory slotting criteria approach" ( ) means the IRB calculation approach set out in *sections 14(1)* and *(2)* and *[..]*;

"total credit risk-weighted amount" ( ), in relation to an authorized institution, means the sum of -

(a) the institution's risk-weighted amount of non-securitization exposures calculated in accordance with *Parts 4*, *[..]* and *[..]* insofar as those Parts relate to the use of the STC, IRB and BSA; and

(b) the institution's risk-weighted amount of securitization exposures calculated in accordance with *Part 7* insofar as that Part relates to the use of the IRBS and STS;

"UL" ( ) means unexpected loss;

"unexpected loss" ( ), in relation to an exposure of an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures, means the unexpected loss on the exposure arising from the potential default of the obligor of, or the dilution risk in respect of, the exposure over a one-year period, as calculated and expressed as the risk-weighted amount of the exposure in accordance with the relevant calculation approach set out in *Divisions 2* to *12* of *Part 5* that is applicable to that exposure.

(2) For the purposes of an authorized institution calculating, in respect of an exposure of the institution, the EL, PD and UL over a one-year period pursuant to these Rules, it shall be sufficient if the institution calculates its capital adequacy ratio using the most current estimates of the EL or PD, as the case may be, made or generated at any time within the past 12 months provided that the institution has not received information which causes, or which could reasonably be expected to cause, a material variation in the relevant credit risk component.

(3) For the purposes of these Rules, a reference to specialized lending under the supervisory slotting criteria approach means specialized lending risk-weighted by mapping, pursuant to *section 14(2)*, to the 5 supervisory rating categories.

(4) Where any matter specified in a section of these Rules is qualified by the word "appropriate", "material" or "relevant", then, for the purposes of assisting in

ascertaining the nature of that qualification in so far as it relates to that matter, regard shall be had to the guidelines, if any, issued under the Ordinance that are applicable to that section.

[3. to 9. Provisions not used]

PART 5

INTERNAL RATINGS-BASED APPROACH TO CALCULATION OF CREDIT RISK

Division 1 - Application

10. Application of *Part 5*

This Part shall apply to an authorized institution which uses the IRB to calculate its credit risk for non-securitization exposures.

Division 2 - Calculation of credit risk, assets and exposures to be covered in calculation and classification of assets and exposures

11. Calculation of risk-weighted amount of exposure to credit risk

(1) Subject to *subsection (2)*, 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 its relevant risk-weight; and

(b) in the case of an equity exposure in respect of which -

(i) the institution uses the internal models method; and

(ii) the relevant minimum risk-weight under the method does not apply,

multiplying the regulatory capital for the equity exposure by 12.5; and

(c) aggregating the figures derived under *paragraphs (a)* and *(b)*.

(2) Where a credit exposure of an authorized institution is the subject of recognized netting or is secured by or against any recognized collateral, recognized guarantee or recognized credit derivative contract, then the institution may reduce the risk-weighted amount of the credit exposure by taking into account the effect of that credit protection in accordance with *Division 12*.

(3) For the purposes of *subsection (1)*, an authorized institution shall calculate the risk-weighted amount of an off-balance sheet exposure of the institution by using the risk-weight derived from a risk-weight function that is applicable to the exposure

according to the type of the counterparty, the type of the issuer of security or the type of reference entity of the credit derivative contract sold, as the case requires.

12. Credit exposures to be covered

Subject to *section [..]*, an authorized institution shall, in accordance with this Part, take into account and risk-weight -

(a) all of the institution's on-balance sheet assets and off-balance sheet exposures booked in the institution's banking book except any such assets and exposures -

(i) required to be deducted from the institution's capital base in accordance with the requirements of *Part 3*; or

(ii) subject to the requirements of *Part 7*; and

(b) all of the institution's credit exposures to counterparties in its trading book under credit derivative contracts, OTC derivative transactions and repo-style transactions.

13. Classification of credit exposures

(1) Subject to *subsections (2)* and *(3)*, an authorized institution shall classify, in accordance with *sections 14* to *17*, each of its credit exposures falling within *section 12* -

(a) first, into one only of the 6 IRB classes of exposures specified in *Table 2*;

(b) second, further classify the credit exposures into one only of the 25 IRB subclasses of exposures specified in *Table 2*.

Table 2

Classes and subclasses of credit exposures under IRB

<table>
<tr><th colspan="2">IRB class</th><th colspan="3">IRB subclass</th></tr>
<tr><td colspan="5"></td></tr>
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<tr><td>(2)</td><td>- Object finance</td></tr>
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<tr><td>(5)</td><td colspan="2">Small-and medium-sized corporates</td></tr>
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<tr><td>(8)</td><td colspan="2">Sovereign foreign public sector entities</td></tr>
<tr><td>(9)</td><td colspan="2">Multilateral development banks</td></tr>
</table>

Table 2 **- continued**

IRB class		**IRB subclass**		
3.	Bank exposures	(10)	Banks	
		(11)	Securities firms	
		(12)	Public sector entities (excluding sovereign foreign public sector entities)	
4.	Retail exposures	(13)	Small business retail exposures	
		(14)	Residential mortgages	- Natural persons
		(15)		- Property-holding shell companies
		(16)	Qualifying revolving retail exposures	
		(17)	Other retail exposures to natural persons	
5.	Equity exposures	(18)	Equity exposures under market-based approach	- Simple risk-weight method
		(19)		- Internal models method
		(20)	Equity exposures under PD/LGD approach	- Publicly traded equity holdings held for long-term investment
		(21)		- Private company equity holdings held for long-term investment
		(22)		- Other publicly traded equity holdings
		(23)		- Other equities
6.	Other exposures	(24)	Cash items	
		(25)	Other items	

(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 sound and consistent over time.

(3) Where a credit exposure of an authorized institution which has been classified under *subsection (1)* would, if *section 14(4)* or *15(2)* or *(5)(c)* were to apply to it at any time subsequently, be reclassified under that subsection, then the institution shall so reclassify the credit exposure unless -

(a) in the case of a credit exposure denominated in a currency other than HKD , 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 credit exposure falls within the value threshold or exposure limit specified in that section primarily because of -

(i) repayments made by the obligor in the exposure; or

(ii) write-offs made by the institution in respect of the outstanding balance of the exposure.

14. Corporate exposures

(1) For the purposes of *section 13(1)* as read with *Table 2*, specialized lending under the supervisory slotting criteria approach of an authorized institution falls into -

(a) 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 exposure;

(b) object finance if the lending funds the acquisition of physical assets where the repayment of the exposure is dependent on the cash flows generated by the assets that have been financed and pledged or assigned to the institution;

(c) commodities finance if the lending is structured short-term lending to finance reserves, inventories, or receivables of exchange-traded commodities, where -

(i) the repayment of the exposure will be from the proceeds of the sale of the commodities; and

(ii) the obligor has no independent capacity to repay the exposure;

(d) income-producing real estate if the lending funds the acquisition of real estate where the prospects for repayment and recovery of the exposure depend primarily on the cash flows generated by the real estate acquired.

(2) Where an authorized institution does not fulfil the criteria for the estimation of the PD in respect of corporate exposures for the institution's specialized lending, then the institution shall -

(a) assign the specialized lending internal rating grades based on the institution's criteria;

(b) map the internal rating grades assigned to the specialized lending, based on the factors specified in *Schedule 1*, to one of the 5 supervisory rating categories of strong, good, satisfactory, weak and default;

(c) allocate risk-weights to the specialized lending within the 5 supervisory rating categories in accordance with *Table 4*.

[(3) Provision not used].

(4) Subject to *subsection (5)*, for the purposes of *section 13(1)* as read with *Table 2*, an authorized institution may only classify a corporate exposure as falling into the IRB subclass of small-and-medium sized corporates if -

(a) subject to *paragraphs (b)* and *(c)*, the corporate concerned has a reported annual turnover/revenue, in its last 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 annual turnover/revenue, in the group's last 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 annual turnover/revenue, in the last annual financial statements of the corporate concerned and the other corporates, is less than $500 million.

(5) Where an authorized institution satisfies 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 annual turnover/revenue, then the Monetary Authority may, by notice in writing given to the institution, permit the institution to substitute total assets for total turnover/revenue in calculating whether or not the exposure falls within *subsection (4)* in respect of that corporate.

(6) For the purposes of *section 13(1)* as read with *Table 2*, all corporate exposures of an authorized institution that do not fall into -

(a) the IRB subclass of specialized lending pursuant to *subsection (2)*; or

(b) the IRB subclass of small-and-medium sized corporates pursuant to *subclass (4)*,

fall into the IRB subclass of other corporates.

15. Retail exposures

(1) For the purposes of *section 13(1)* as read with *Table 2*, an authorized institution may only classify an exposure as a retail exposure falling into the IRB subclass of small business retail exposures, residential mortgages to natural persons, residential mortgages to property-holding shell companies, qualifying revolving retail exposures, or other retail exposures to natural persons, 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 13(1)* as read with *Table 2*, an authorized institution may only classify an exposure as a retail exposure falling into the IRB subclass of small business retail exposures if the total exposure of the institution and its consolidation group to -

(a) subject to *paragraph (b)*, the obligor where the obligor is a corporate;

(b) if applicable -

(i) the obligor and the other members of the obligor's group of companies; or

(ii) the obligor and other connected corporates or natural persons which the institution consolidates with the obligor for risk-management purposes,

is less than $10 million.

[(3) Provision not used.]

(4) Subject to *subsection (1)*, for the purposes of *subsection 13(1)* as read with *Table 2* -

(a) an authorized institution shall classify as residential mortgages to natural persons its residential mortgage loans to natural persons where the property which is the security for the residential mortgage loan concerned is or will be occupied by the obligor or a tenant of the obligor;

(b) an authorized institution shall classify as residential mortgages to property-holding shell companies its residential mortgage loans in respect of which -

(i) the property securing the residential mortgage loan concerned is or will be occupied by one or more than one director or shareholder of the property-holding shell company or by a tenant 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 entered into by one or more than one director or shareholder of the property-holding shell company and that 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-monies obligations and obligations of suretyship), is satisfied that the guarantor is able to

discharge 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, without limitation, the loan purpose, loan-to-value ratio and debt-servicing ratios) as would normally be applied by the institution to an individual natural person.

(5) Subject to *subsection (1)*, for the purposes of *section 13(1)* as read with *Table 2*, an authorized institution shall classify an exposure as a retail exposure falling into 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 natural person and not explicitly for business purposes;

(c) the exposure is not more than $1 million;

(d) the exposure belongs to a pool of exposures that have exhibited, in comparison with other IRB subclasses of retail exposure, 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 the 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 qualifying revolving retail exposures is consistent with the underlying risk characteristics of the exposure.

(6) Subject to *subsection (1)*, for the purposes of *section 13(1)* as read with *Table 2*, an authorized institution shall classify all retail exposures to natural persons, that are not classified as residential mortgages to natural persons or qualifying revolving retail exposures, as other retail exposures to natural persons.

(7) In this section -

“revolving” ( ), in relation to a retail exposure of an authorized institution, means the obligor’s outstanding balances are permitted to fluctuate based on the obligor’s decisions to borrow and repay, up to a limit established by the institution.

16. Equity exposures

(1) For the purposes of *section 13(1)* as read with *Table 2* -

(a) subject to *paragraphs (ab)* to *(g)*, an authorized institution shall classify as equity exposures all of its direct and indirect voting or non-voting ownership interests in the assets and income of a commercial enterprise or financial institution (other than an equity holding falling within *subsection (2)(a)*) where those interests are not consolidated or deducted for the purposes of calculating the institution's capital base pursuant to *Part 3*;

(ab) an authorized institution shall classify as equity exposures -

(i) holdings of derivative instruments the value of which is derived from equity interests; and

(ii) holdings in partnerships, limited companies, unit trusts or other types of enterprise that -

(A) issue ownership interests; and

(B) are engaged principally in the business of investing in equity instruments;

(b) an authorized institution shall classify as an equity exposure any instrument which -

(i) is irredeemable in that the return of the institution's invested funds can be achieved only by -

(A) the sale of the instrument;

(B) the sale of the rights to the instrument; or

(C) the liquidation of the issuer;

(ii) does not embody an obligation on the part of the issuer except an obligation falling within *paragraph (c)(ii)*; and

(iii) conveys a residual claim on the assets or income of the issuer;

(c) an authorized institution shall classify as an equity exposure -

(i) an instrument with the same structure as those included in the institution's core capital in accordance with *section [..]*; and

(ii) an instrument that 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, in its capacity as the holder of the instrument, has the option to require that the obligation be settled in equity shares unless -

(I) in the case of a traded instrument, the institution has demonstrated to the satisfaction of the Monetary Authority that the instrument trades more like debt of the issuer than equity; or

(II) in the case of a non-traded instrument, the institution has demonstrated to the satisfaction of the Monetary Authority that the instrument should be treated as a debt position;

(d) an authorized institution shall classify as equity exposures any debt obligations and other securities, partnerships, derivative contracts or other vehicles, structured with the intent of conveying the economic substance of equity ownership;

(e) subject to *subsection (2)*, an authorized institution shall classify as equity exposures any of its liabilities from which the return is linked to that of equities;

(f) an authorized institution shall classify as equity exposures debt holdings the subject of requirement under *subsection (3)*; and

(g) an authorized institution shall not classify as equity exposures equity instruments that are structured with the intention of conveying the economic substance of debt holdings or securitization exposures.

(2) With the prior consent of the Monetary Authority, an authorized institution may exclude from its equity exposures a liability referred to in *subsection (1)(e)* -

(a) if the liability is directly hedged by an equity holding such that the net position does not expose the institution to material risk; and

(b) if the institution has demonstrated to the satisfaction of the Monetary Authority that the institution's rating system can provide reasonably accurate estimates of the effectiveness of hedging activities for the purposes of *paragraph (a)*.

(3) 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 capital adequacy ratio if the Monetary Authority is satisfied that the nature and economic substance of the debt holding are more realistically characterized as an equity exposure than as a debt exposure.

17. Other exposures

For the purposes of *section 13(1)* as read with *Table 2*, an authorized institution shall classify as other exposures the institution's cash items and other items which are on-balance sheet assets that have not been classified into any other IRB subclass.

Division 3 - IRB calculation approaches

18. 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 on-balance sheet assets and off-balance sheet exposures, select IRB calculation approaches from the range of IRB calculation approaches set out in *Table 3* available for each of the 6 IRB classes of exposures.

Table 3

IRB calculation approaches

<table>
<tr><th>IRB class</th><th>Corporate exposures</th><th>Sovereign exposures</th><th>Bank exposures</th><th>Retail exposures</th><th>Equity Exposures</th><th>Other exposures</th></tr>
<tr><td rowspan="3">IRB Calculation approaches available</td><td>FIRB</td><td>FIRB</td><td>FIRB</td><td rowspan="3">IRB approach</td><td>Market-based approach: simple risk-weight method</td><td rowspan="3">IRB approach: specific risk-weight method</td></tr>
<tr><td>AIRB</td><td>AIRB</td><td>AIRB</td><td>Market-based approach: internal models method</td></tr>
<tr><td>Supervisory slotting criteria approach</td><td></td><td></td><td>PD/LGD approach</td></tr>
</table>

(2) An authorized institution shall not select an IRB calculation approach under *subsection (1)* unless the institution fulfils the criteria specified in *Schedule [..]* applicable to or in relation to that IRB calculation approach.

(3) An authorized institution -

(a) may, with the prior consent of the Monetary Authority, adopt more than one rating system within an IRB exposure class if the institution has demonstrated to the satisfaction of the Monetary Authority that the rating systems concerned are necessary having

regard to the characteristics and complexity of the types of products that the institution offers within that IRB class;

(b) shall only assign an obligor or exposure to that rating system that best reflects the level of risk of the obligor or exposure, as the case may be, and that is not for regulatory capital arbitrage purposes; and

(c) shall document the reason for assigning an obligor or exposure to a particular rating system.

Division 4 - Risk-weighting framework under IRB

19. General requirements for estimation of PD, LGD and EAD

An authorized institution shall, for the purposes of making estimates of the PD and, where relevant, the LGD and EAD ("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 every 12 months;

(c) base the institution's estimates on historical experience and empirical evidence and not only on subjective or judgemental considerations, take into account all relevant material and available data and information 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 data from external sources or a combination thereof) -

(i) are representative of its long run default experience and long run loss experience (being a period that captures a

reasonable mix of high-default and low-default years of an economic cycle); and

(ii) are based on economic or market conditions that are relevant to current and foreseeable economic or market conditions;

(e) ensure that adjustments to the estimates, based on data falling within *paragraph (d)* -

(i) are only made by officers of the institution with the necessary experience and expertise to make such adjustments and who have been authorized by the institution to make such adjustments;

(ii) form part of the institution's risk quantification process and are based on the exercise in good faith of judgement by officers falling within *subparagraph (i)* and are not biased towards reducing the institution's regulatory capital; and

(iii) are based on a procedure subject to the conduct of regular sensitivity analyses to ascertain whether or not the procedure is biased towards reducing the institution's regulatory capital; and

(f) demonstrate to the satisfaction of the Monetary Authority that it applies a more prudent and critical approach to the method and

data used in making the estimates in any case where the method or data is regarded by the institution as less than satisfactory for the purpose of making accurate estimates.

20. Default of obligor

(1) Subject to *subsections (3)* and *(8)*, for the purposes of this Part, a default with respect to the obligor under 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 the consolidation group of the institution) without recourse by the institution to realizing security, if any, held by the institution or other action by the institution; or

(b) subject to *subsection (2)*, the obligor is past due for more than 90 days on any material portion of all of the obligor's outstanding credit obligations to the institution (or the consolidation group of the institution).

(2) For the purposes of *subsection (1)(b)* -

(a) subject to *paragraph (b)*, revolving facilities (including overdrafts) are past due if -

(i) the obligor has breached a maximum limit which was set by the authorized institution providing the facilities and the institution has advised the obligor of the maximum limit; or

(ii) the authorized institution providing the revolving facilities has advised the obligor of a maximum limit which is less than the current outstanding balance of the facilities;

(b) a temporary overdraft, or an overdraft not authorized by the authorized institution providing it, has a zero limit.

(3) Where the obligor under a retail exposure of an authorized institution is past due for more than 90 days, then the institution -

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

(b) shall disregard *paragraph (a)* if *subsection (1)(a)* applies to the obligor.

(4) Subject to *subsection (5)*, where an authorized institution -

(a) is a subsidiary of a bank incorporated outside Hong Kong; and

(b) intends to use, for particular exposures of the institution, default criteria (not being the prescribed default criteria) set by the home supervisor of the institution's parent bank,

then the institution shall not so use those default criteria except with the prior consent of the Monetary Authority.

(5) The Monetary Authority shall not give to an authorized institution the consent referred to in *subsection (4)* in respect of the use of the default criteria referred to

in that subsection in respect of particular exposures unless the institution satisfies the Monetary Authority that the differences between those criteria and the prescribed default criteria will not materially affect the estimates of the PD and, where relevant, the LGD and EAD, generated by the institution's rating system.

(6) Where a rating system used by an authorized institution -

(a) is developed within the group of companies of which the institution is a member;

(b) is monitored on a group basis; and

(c) is validated by the home supervisor of the institution's parent bank,

then the Monetary Authority will, for the purposes of this section, take into account the views of the home supervisor, in so far as is practicable and reasonable in all the circumstances of the case, on the integrity and the predictive qualities of the group-wide rating system adopted by the institution if, and only if, the Monetary Authority is satisfied that the capital adequacy standards adopted by the home supervisor for assessing credit risk under the IRB are not materially different from the like standards in Hong Kong.

(7) An authorized institution shall -

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

(b) subject to *subsection (4)*, use the prescribed default criteria for its estimates of the PD and, where relevant, the LGD and EAD;

(c) only use internal data or external data which are inconsistent with the prescribed default criteria if it has demonstrated 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.

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

(9) In this section, “prescribed default criteria” ( ) means the criteria specified in *subsection (1)*.

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

21. 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 that reflect, exclusively, the risk of obligor default; and

(b) facility grades that reflect transaction-specific factors affecting loss severity in the case of obligor default and, where relevant, obligor characteristics to the extent that they are predictive of the LGD.

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

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

(a) rank and assign the obligors and exposures to the obligor and facility grades in accordance with its rating criteria and based upon

all relevant and material information 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 obligor default of such exposures is different.

(4) An authorized institution may use a rating system for its specialized lending under the supervisory slotting criteria approach that reflects the EL by incorporating obligor creditworthiness and loss severity considerations.

22. Rating structure

(1) An authorized institution shall demonstrate to the satisfaction of the Monetary Authority that its process for assigning obligors and exposures between its obligor or facility grades results in a consistent, logical and cogent differentiation of credit risk inherent in those obligors or exposures, as the case may be -

(a) with no excessive concentrations in 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 quantitative estimates of credit risk.

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

(a) not less than 7 obligor grades for obligors who are not in default; and

(b) only one obligor grade for 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 obligors who are not in default; and

(b) only one obligor grade for obligors who are in default.

23. 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 obligors and exposures to such grades,

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

24. Rating assignment horizon

An authorized institution shall -

(a) use a time horizon of more than one year in assigning its obligors to obligor grades;

(b) subject to *paragraph (c)*, ensure that an obligor grade represents the institution's best assessment of the obligor's willingness and ability to perform the obligor's contractual obligations, after taking into account any adverse economic conditions and unexpected adverse events that are likely to occur under the current economic conditions or over a business cycle within the industry or geographic region relevant to the obligor; and

(c) for the purposes of this section, act conservatively in assessing information relating to an obligor's willingness and ability to perform the obligor's contractual obligations.

25. Rating coverage

An authorized institution shall -

(a) in the case of each exposure falling within the IRB classes of corporate, sovereign and bank exposures, assign the obligor (including the guarantor or protection seller providing a recognized guarantee or recognized credit derivative contract, as the case may be) and the exposure to an obligor grade or facility grade, as the case may be, 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 obligor to the obligor grade that best reflects to the institution the level of credit risk of the obligor.

26. Integrity of rating process

An authorized institution shall ensure that -

(a) it has in place policies and procedures to ensure the independence of its rating process for corporate, sovereign and bank exposures;

(b) the assignment of obligors and exposures to obligor and facility grades respectively is reviewed and updated not less thanonce in every 12 months.

(c) whenever the institution becomes aware of any new material information on an obligor or a facility, a review is conducted, within a reasonable period after the institution becomes so aware, of whether or not the obligor or facility, as the case may be, should be assigned to a different obligor grade or facility grade, as the case may be;

(d) it has in place an effective process to obtain and update [relevant and] material information on the obligor's financial condition and on other characteristics that affect assigned estimates of the PD, LGD and EAD; and

(e) it 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 that have occurred.

27. Calculation of risk-weighted amount for 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 40(c)*, if the institution uses the FIRB, provide its own estimate of the PD for 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 AIRB, provide its own estimate of the PD, LGD and EAD for each of its obligor grades and facility grades and calculate the M of its exposures for inclusion into the risk-weight function to be used in that calculation; and

(c) if it uses the supervisory slotting criteria approach to calculate the risk-weighted amount in respect of its specialized lending, use the relevant supervisory estimate of risk-weight for the specialized lending.

(2) An authorized institution shall use *Formula 1A* to determine the risk-weight function to be used to calculate the risk-weighted amount of the institution's corporate, sovereign and bank exposures that are -

(a) not in default; and

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

Formula 1A

Determination of risk-weight function to be used for corporate, sovereign and bank exposures other than hedged corporate and bank exposures

Correlation (R)
= 0.12 × (1 - EXP (-50 × PD)) / (1 - EXP (-50)) + 0.24 × [1 - (1 - EXP (-50 × PD)) / (1 - EXP (-50))]

Maturity adjustment (b)
= (0.11852 - 0.05478 × 1n (PD))^2

Capital requirement (K)
= [LGD × N [(1 - R)^-0.5 × G (PD) + (R / (1 - R))^0.5 x G (0.999)] - PD x LGD] x (1 - 1.5 x b)^- 1 x (1 + (M - 2.5) × b)

Risk-weight (RW) = K x 12.5

Risk-weighted amount (RWA) = RW x EAD

where:

PD and LGD are expressed as decimals, the EAD is expressed in HKD and the M is expressed in years;

1n denotes the natural logarithm;

N(x) denotes the cumulative distribution function;

for a standard normal random variable; and

G(z) denotes the inverse cumulative distribution function;

for a standard normal random variable.

(3) An authorized institution shall apply a zero capital requirement (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 requirement (K) for the exposure.

(4) An authorized institution shall use the same risk-weight function to calculate the risk-weighted amount of its corporate, sovereign and bank exposures which are in default except that the capital requirement (K) for a defaulted corporate, sovereign or bank exposure shall be equal to the greater of -

(a) zero; and

(b) the resulting amount of 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 1B* to determine the risk-weight function to be used to calculate the risk-weighted amount of the institution's corporate, sovereign and bank exposures that are -

(a) not in default; and

(b) treated as hedged exposures under the double default framework.

Formula 1B

Determination of risk-weight function for hedged corporate and bank exposures

Correlation (ρ_{os})

= 0.12 × (1 - EXP (-50 × PD_o)) / (1 - EXP (-50)) + 0.24 × [1 - (1 - EXP (-50 × PD_o)) / (1 - EXP (-50))]

Maturity adjustment (b_{os})

= (0.11852 - 0.05478 × ln (PD_{os}))^2

Capital requirement (K_{DD})

$$= \left\{ LGD_g \cdot \left[N\left(\frac{G(PD_o) + \sqrt{\rho_{os}} \cdot G(0.999)}{\sqrt{1-\rho_{os}}} \right) - PD_o \right] \cdot \frac{1+(M_{os}-2.5)\cdot b_{os}}{1-1.5\cdot b_{os}} \right\} \times (0.15 + 160 \cdot PD_g)$$

Risk weight (RW_{DD}) = K_{DD} x 12.5

Risk-weighted amount (RWA) = RW_{DD} x EAD_g

Where:

PD and LGD are expressed as decimals, the EAD is expressed in HKD and the M is expressed in years;

1n denotes the natural logarithm;

N(x) denotes the cumulative distribution function;

for a standard normal random variable;

G(z) denotes the inverse cumulative distribution function;

for a standard normal random variable;

PD_o = PD of the underlying obligor;

PD_g = PD of the guarantor / protection seller for the hedged exposure;

PD_{os} = The lower of PD_o and PD_g;

M_{os} = M of the credit protection;

LGD_g = LGD of a comparable direct exposure to the guarantor / protection seller; and

EAD_g = EAD of the hedged exposure.

(6) Where the underlying obligor of a hedged corporate or bank exposure of an authorized institution defaults, the institution shall -

(a) treat the exposure as a direct exposure to the guarantor or protection seller concerned; and

(b) risk-weight the exposure accordingly.

(7) Where the guarantor or protection seller in respect of a hedged corporate or bank exposure of an authorized institution defaults, the institution shall -

(a) treat the exposure as remaining with the underlying obligor; and

(b) risk-weight the exposure as an unhedged exposure to the underlying obligor.

(8) Where -

(a) the underlying obligor under a hedged corporate or bank exposure of an authorized institution defaults; and

(b) the guarantor or protection seller concerned in respect of that exposure also defaults,

then the institution shall treat the exposure as a defaulted exposure to whichever of the underlying obligor, or the guarantor or protection seller, defaulted last.

28. Provisions supplementary to *section 27(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 ("firm-size adjustment") to the calculation of [the] correlation (R or ρ_{os}) in the risk-weight function set out in *Formula 1A* or *1B* by substituting the following correlation formula for that in *Formula 1A* or *1B*, as the case requires:

(a) if the exposure is not subject to the double default framework, then in *Formula 1A* -

Correlation (R)

$$= 0.12 \times (1 - EXP(-50 \times PD)) / (1 - EXP(-50)) + 0.24 \times [1 - (1 - EXP(-50 \times PD)) / (1 - EXP(-50))] - 0.04 \times (1 - (S - 50) / 450);$$

(b) if the exposure is subject to the double default framework, then in *Formula 1B* -

Correlation (ρ_{os})

$$= 0.12 \times (1 - EXP(-50 \times PD_o)) / (1 - EXP(-50)) + 0.24 \times [1 - (1 - EXP(-50 \times PD_o)) / (1 - EXP(-50))] - 0.04 \times (1 - (S - 50) / 450)$$

where:

S is expressed as -

(a) the annual turnover/revenue of the corporate;

(b) the consolidated annual turnover/revenue of the group of companies of which the corporate is a member; or

(c) the aggregate of the annual turnover/revenue of the corporate and its connected corporates which the institution consolidates for risk-management purposes,

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

(2) Where any annual turnover/revenue referred to in *subsection (1)* is less than $50 million, then the authorized institution concerned shall, for the purposes of that subsection, treat the annual turnover/revenue as if it were $50 million.

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

29. Provisions supplementary to *section 27* - risk-weights for specialized lending

(1) Where an authorized institution complies with *section 30* in respect of -

(a) the estimates of the PD under the FIRB for any of its specialized lending; or

(b) the estimates of the PD, LGD and EAD under the AIRB for any of its specialized lending,

then the institution shall use the risk-weight function specified in *Formula 1A* (and, if applicable, *section 28(1)*) to derive the risk-weighted amount for such specialized lending.

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

(a) use the supervisory slotting criteria approach to derive the risk-weighted amounts for such specialized lending;

(b) assign such specialized lending to the institution's rating grades based on the institution's criteria, systems and processes;

(c) subject to *subsection (3)*, use the supervisory slotting criteria set out in [*Schedule 1*] to map the obligor grades of such specialized lending into the 5 supervisory rating grades specified in *Table 4* that largely correspond to the range of ECAI issuer ratings specified in that table; and

(d) apply the risk-weight specified in *Table 4* for the relevant supervisory rating grade in calculating the risk-weighted amount of such specialized lending.

Table 4

Supervisory rating grades for specialized lending

	Strong	**Good**	**Satisfactory**	**Weak**	**Default**
Risk-weight	70%	90%	115%	250%	0%
[Standard and Poor's Corporation]	BBB- or better	BB+ or BB	BB- or B+	B to C-	Not applicable
[Moody's Investors Service, Inc].	Baa3 or better	Ba1 or Ba2	Ba3 or B1	B2 to C-	Not applicable
[Fitch Ratings Ltd.]	BBB- or better	BB+ or BB	BB- or B+	B to C-	Not applicable

(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 4*, and a risk-weight of 70% to its specialized lending which falls into the supervisory rating grade of good in *Table 4*, if -

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

(b) the institution has demonstrated to the satisfaction of the Monetary Authority that the institution's credit underwriting standards and its exposures' ability to withstand other risk characteristics are substantially stronger than those in the slotting criteria for the equivalent supervisory rating category specified in *Schedule 1*.

30. Probability of default (PD)

(1) An authorized institution shall under the FIRB or AIRB provide an estimate of the PD for each of its obligor grades such that -

(a) the estimate of the PD is a long run average of one-year default rates for obligors falling within the obligor grade to which the estimate relates;

(b) in the case of a corporate or bank exposure of the institution that is not in default, the estimate of the PD is the greater of -

(i) the one-year PD for the obligor grade into which the exposure falls; or

(ii) 0.03%;

(c) in the case of a sovereign exposure of the institution that is not in default, the estimate of the PD is the one-year PD for the obligor grade into which the exposure falls;

(d) in the case of a corporate, sovereign or bank exposure of the institution that is in default, the estimate of the PD is 100%;

(e) the estimate of the PD is based on not less than one source of relevant data that covers a period of not less than 5 years;

(f) the institution uses, for the purposes of the estimate of the PD, information, sources and techniques (including, but not limited to, internal default experience, mapping to external data and statistical default models) that take account of the institution's long run default and long run loss experience; and

(g) if the institution uses a primary technique for the estimate of the PD and other techniques as a point of comparison and potential adjustment, the institution acts prudently in -

(i) combining the results of the primary technique and other techniques;

(ii) making adjustments for the respective limitations of the primary technique and other techniques.

(2) In this section -

"internal default experience" ( ), in relation to an authorized institution, means -

(a) the use by the institution of data it has obtained from its internal default experience in estimating the PD; and

(b) the use by the institution of data it has obtained from other authorized institutions' internal default experiences in estimating the PD if -

(i) the rating systems used by the other authorized institutions are comparable to the rating system used by the institution; and

(ii) the data are relevant to the institution's circumstances;

"mapping to external data" ( ), in relation to an authorized institution, means -

(a) mapping the institution's obligor grades to the rating scale used by an ECAI; and

(b) attributing the default rates observed for the ECAI's ratings to the institution's obligor grades;

"statistical default models" ( ), in relation to an authorized institution, means the use by the institution of statistical default prediction models for the purposes of estimating the PD.

[**31. Provision not used.]**

32. Loss given default (LGD) under FIRB

(1) An authorized institution which uses the FIRB shall -

(a) use a supervisory estimate of the LGD of 45% for its senior claims which are corporate, sovereign and bank exposures that are -

(i) unsecured; or

(ii) secured by collateral which is not recognized for credit risk mitigation purposes; and

(b) use a supervisory estimate of the LGD of 75% for its subordinated claims which are exposures referred to in *paragraph (a)*.

(2) Subject to *subsections (3)* and *(4)*, an authorized institution which uses the FIRB may, for the purposes of calculating the risk-weighted amount of a senior claim of the institution that falls within its IRB classes of corporate, sovereign and bank exposures, take into account the effect of any recognized credit risk mitigation consisting of -

(a) recognized financial collateral; or

(b) recognized IRB collateral.

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

(a) use *Formula 1C* to determine the effective LGD ("LGD*") applicable to an exposure referred to in *subsection (2)* that is collateralized by recognized financial collateral for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, as the case requires;

Formula 1C

Determination of LGD*

LGD* = LGD x (E* / E)

where:

LGD	=	the LGD of a senior unsecured exposure before recognition of collateral (that is, 45%);
E	=	the EAD of the exposure; and
E*	=	net credit exposure (being the exposure after adjusting for the risk mitigation effect of collateral);

(b) for the purposes of *Formula 1C*, only use the E* to calculate the LGD* and continue to calculate the EAD without taking into account the presence of any collateral;

(c) use *Formula 1D* to determine the net credit exposure (E*) to a counterparty;

Formula 1D

Determination of E*

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

where:

E^* = net credit exposure;

E = the EAD of the exposure;

H_e = haircut applicable to the authorized institution's exposure to the counterparty pursuant to *Schedule [..]* subject to adjustment as set out in *section [..]*;

C = value of the recognized collateral before adjustment required by *section [..]*;

H_c = haircut applicable to the recognized collateral pursuant to *Schedule [..]* subject to adjustment as set out in

section [..];

H_{fx} = haircut applicable in consequence of any currency mismatch between the exposure and the collateral subject to adjustment as set out in *section [..]*;

(d) for the purposes of *Formula 1D* -

(i) use *sections [..]*, *[..]* and *[..]* to determine H_e, H_c and H_{fx}; and

(ii) apply a haircut of zero to repo-style transactions that are treated as collateralized loans to the counterparty if the collateral falls within *section [..]*;

(e) if a repo-style transaction is subject to a valid bilateral netting agreement, only recognize the netting effect of the agreement by -

(i) calculating the net exposure amount (E#) in accordance with *section [..]* as the EAD for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, as the case requires; or

(ii) if *section [..]* applies, calculating the net exposure amount of (E*) in accordance with *section [..]* as the EAD for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, as the case requires;

(f) not adjust the LGD to reflect a repo-style transaction subject to a valid bilateral netting agreement.

(4) For the purposes of *subsection (2)(b)*, an authorized institution shall determine, for inclusion into the risk-weight function specified in *Formula* 1A or 1B, as the case requires, the effective LGD ("LGD*") applicable to an exposure referred to in *subsection (2)* that is collateralized by recognized IRB collateral by -

(a) if the ratio of the current value of the collateral received (C) in respect of the exposure to the EAD of the exposure (E) is below a threshold level of C* as set out in *Table 5*, assigning to the LGD* for that exposure the LGD of 45%;

(b) if the ratio of C to E in respect of the exposure exceeds threshold level C** as set out in *Table 5*, assigning to the LGD* for that exposure the LGD applicable pursuant to that table;

Table 5

Determination of LGD*

Recognized IRB collateral	Minimum LGD	Required minimum level of collateralization for collateral to be partially taken into account (C*)	Required level of over-collateralization for collateral to be taken into account (C**)
Recognized financial receivables	35%	0%	125%
Recognized commercial real estate (CRE) and residential real estate (RRE)	35%	30%	140%
Other recognized IRB collateral	40%	30%	140%

(c) if the ratio of C to E in respect of the exposure exceeds threshold level C* but not threshold level C** -

(i) dividing the exposure into -

(A) a fully collateralized portion; and

(B) the uncollateralized portion;

(ii) assigning to the LGD* for the fully collateralized portion (C/C**) the supervisory LGD associated with the type of collateral concerned in accordance with *Table 5*;

(iii) assigning to the LGD* for the uncollateralized portion (E-C/C**) the LGD of 45%;

(d) if the institution has obtained more than one type of recognized collateral in respect of the exposure -

(i) dividing the exposure into -

(A) the portion fully collateralized by recognized financial collateral (after taking into account the haircuts H_c and H_{fx} in determining the value of the recognized financial collateral);

(B) the portion fully collateralized by recognized financial receivables;

(C) the portion fully collateralized by recognized commercial real estate and residential real estate;

(D) the portion fully collateralized by other recognized IRB collateral; and

(E) the portion, if any, that is uncollateralized; and

(ii) calculating the risk-weighted amount for each portion separately;

(e) if the ratio of the sum of the value of recognized commercial real estate, residential real estate and other collateral covering the exposure, after taking into account the credit risk mitigating effect of recognized financial collateral and recognized financial receivables, is below C*, assigning to the LGD* for the exposure the LGD of 45%.

(5) In this section -

"subordinated claim" ( ), in relation to an authorized institution, means a claim by the institution against an obligor's assets that -

(a) is lower in ranking, or junior, to other claims against those assets; or

(b) will be repaid only after all the senior claims against those assets have been repaid.

33. Loss given default (LGD) under AIRB

(1) An authorized institution shall under the AIRB provide an estimate of the LGD for each of its facilities such that -

(a) the estimate of the LGD reflects the effect on loss severity of the exposures falling within the facility of different economic downturn conditions where credit losses are expected to be substantially higher than average;

(b) the estimate of the LGD is not less than the long run default-weighted average loss rate given default calculated as the average economic loss rate of all observed defaults within the data source used by the institution for the facility;

(c) the institution has in place, for the purposes of *paragraph (b)*, an effective and well documented process for assessing the effects, if any, of different economic downturn conditions on debt recovery rates in respect of different exposures and for producing estimates of the LGD that reflect such conditions;

(d) the institution takes into account, in estimating the LGD for the facility, all major factors relevant to measuring loss, including the time value of money, an appropriate risk premium, and any direct and indirect costs associated with collection in respect of an exposure falling within the facility;

(e) the institution has taken into account the extent of any positive correlation between the credit quality of the obligor in respect of

which the institution has provided an exposure falling within the facility and that of any collateral provided in respect of the exposure or that of the provider of such collateral and addressed the effect of such correlation, if any, in a prudent manner;

(ea) any currency mismatch and maturity mismatch relating to an exposure falling with the facility is conservatively addressed by the institution in its estimate of the LGD for the facility;

(f) the estimate of the LGD for the facility -

(i) is based on historical recovery rates; and

(ii) is not solely based on the estimated market value of collateral in any case where the institution holds collateral in respect of an exposure falling within the facility;

(g) the estimate of the LGD for the facility reflects the possibility that the institution will have to incur unexpected debt losses during the debt recovery period applicable to the facility;

[(h) Not used]

(i) the estimate of the LGD for the facility if it is a corporate, sovereign or bank exposure is based on not less than one source of relevant data that covers at least one complete economic cycle of not less than 7 years;

(j) if the estimation of the LGD for the facility involves mapping data elements, specific to the facility, in the institution's portfolio to the factors in reference data sets used by ECAIs -

(i) the mapping process is based on a comparison of available common elements in the ECAIs' reference data and the institution's portfolio; and

(ii) in any case where the institution combines multiple sets of reference data used by ECAIs, the institution has in place a policy -

(A) setting out the manner in which the combination is effected; and

(B) that ensures that the institution avoids biases or inconsistencies in the mapping approach or underlying data.

(2) An authorized institution which uses the AIRB shall, in the case of an exposure of the institution under a repo-style transaction that is subject to a valid bilateral netting agreement, only recognize the netting effect of the agreement by -

(a) subject to *paragraph (b)*, calculating the net exposure amount (E#) in accordance with *section [..]* as the EAD for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, whichever is applicable;

(b) if *section [..]* applies, calculating the net exposure amount (E*) in accordance with *section [..]* as the EAD for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, whichever is applicable; and

(c) applying its estimate of the LGD to the net exposure amount (E# or E*, as the case may be).

34. Loss given default (LGD) under double default framework

For the purposes of *Formula 1B*, an authorized institution shall -

(a) only use, as the LGD_g, the LGD of -

(i) a comparable direct unhedged exposure to the guarantor or protection seller; or

(ii) an unhedged exposure to the underlying obligor,

depending upon whether, in the event that both the guarantor or protection seller and the underlying obligor default during the contractual period of the hedged exposure, available evidence and the structure of the guarantee or credit protection indicate that the amount recovered will depend on the financial condition of the guarantor or protection seller or the underlying obligor, as the case may be;

(b) in estimating the LGD_g, only recognize collateral provided in respect of the exposure or the guarantee or credit derivative contract concerned -

(i) if the collateral is provided exclusively in respect of the exposure, the guarantee or the credit derivative contract, as the case may be;

(ii) in a manner consistent with *section [..]* or *[..]*, as the case requires; and

(iii) such that no account is taken of double recovery.

35. Exposure at default (EAD) - on-balance sheet assets

(1) An authorized institution shall estimate the EAD for an on-balance sheet asset of the institution such that -

(a) the estimate of the EAD is not less than the current drawn amount of the asset after taking into account the effect of any recognized netting as specified in *section 80*;

(b) the estimate of the EAD on the drawn amount of the asset is not less than the sum of -

(i) the amount by which the institution's capital base would be reduced if the exposure were fully written-off; and

(ii) any specific provisions and partial write-offs; and

(c) the institution does not take the discount, if any, into account in calculating the risk-weighted amount of the asset.

(2) For the purposes of this section, "discount" ( ), in relation to an on-balance sheet asset of an authorized institution, means the amount of the institution's estimate of the EAD for the asset that exceeds the sum referred to in *subsection (1)(b).*

[36. Provision not used.]

37. Exposure at default (EAD) - off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts

(1) An authorized institution which uses the FIRB shall calculate the credit equivalent amount of an off-balance sheet corporate, sovereign and bank exposure of the institution, other than an OTC derivative transaction or credit derivative contract, by multiplying the principal amount of the exposure by the applicable credit conversion factor as set out in *Table 6*.

Table 6

Credit conversion factors applicable to off-balance sheet exposures

Off-balance sheet exposures		Credit conversion factor
1.	Direct credit substitutes	100%
2.	Transaction-related contingencies	50%
3.	Trade-related contingencies	20%
4.	Asset sale with recourse	100%
5.	Forward asset purchases	100%
6.	Partly paid-up securities (being securities the unpaid portion of which the authorized institution may be called upon by the issuer to pay at a pre-determined or unspecified future date)	100%
7.	Forward forward deposits placed	100%
8.	Note issuance and revolving underwriting facilities	75%
9.	Commitments, under which the authorized institution is obliged to provide funds in the future, not falling within any of the other categories in this	

***Table 6* - continued**

Off-balance sheet exposures	Credit conversion factor
Table or Table [..], and that are - (a) commitments which may be cancelled at any time unconditionally by the institution or which provide for automatic cancellation due to a deterioration in a counterparty's creditworthiness; or (b) commitments other than commitments falling within *paragraph (a)*.	 0% 75%

(2) An authorized institution which uses the AIRB shall calculate the credit equivalent amount of an off-balance sheet exposure of the institution by multiplying the principal amount of the exposure by the applicable credit conversion factor [specified] in *subsection (3)*.

(3) Subject to *subsection (4)*, an authorized institution which uses the AIRB shall use its estimates of credit conversion factors for the different types of off-balance sheet exposures specified in *Table [..]* except any such types which are subject to a credit conversion factor of 100% under the FIRB.

(4) An authorized institution shall estimate the EAD for an off-balance sheet exposure of the institution, other than an OTC derivative transaction or credit derivative contract, such that -

(a) in the case of a facility, the estimate of the EAD for the facility reflects the possibility of additional drawings by the obligor up to and after the time a default event is triggered in respect of the facility;

(b) the estimate of the EAD is a prudent estimate of the long-run default-weighted average EAD for similar facilities and obligors with allowance made for the likely margin of error and for any identified positive correlation between the frequency of defaults in respect of exposures falling within similar facilities and any increase in EAD in respect of those exposures;

(c) in the case of a facility for which the estimate of the EAD is volatile over the economic cycle, the institution uses an estimate of the EAD for the facility that is appropriate for an economic downturn if that estimate is more prudent than the long run default-weighted average EAD for the facility;

(d) the estimate of the EAD to be used for each type of facilities is based on procedures established by the institution which provide a clear and unambiguous delineation of each type of facilities to which the estimate relates;

(e) the estimate of the EAD -

    (i) is based on all material information available to the institution; and

    (ii) is derived from criteria which are material drivers of the EAD;

(f) in the case of a corporate, sovereign or bank exposure of the institution -

(i) the estimate of the EAD for the exposure is based on relevant data available from not less than one source covering not less than one economic cycle of not less than 7 years;

(ii) the principal amount of the exposure to which the credit conversion factor is applied is the lower of -

(A) the value of the unused committed credit line; and

(B) the value that reflects any factor constraining the availability of the facility concerned; and

(iii) if the principal amount of the exposure to which the credit conversion factor is applied is determined by reference to *subparagraph (ii)(B)*, the institution has in place line monitoring and management procedures to ensure that the constraining factor concerned operates in a way that justifies determining that principal amount by reference to that subparagraph.

38. Exposure at default (EAD) - OTC derivative transactions and credit derivative contracts

(1) Subject to *subsection (2)*, an authorized institution shall calculate the credit equivalent amount of the institution's exposure to an OTC derivative transaction or credit derivative contract specified in *Table [ ]* in accordance with *sections [..]* and *[..]*.

[(2) For the purposes of *subsection (1)*, the definitions of the terms "credit equivalent amount" and "principal amount" in *section [..]* shall apply to references to those terms in *Table [..]* and *sections [..]* and *[..]*.]

39. Exposure at default (EAD) - other non-specified off-balance sheet exposures

An authorized institution shall calculate the credit equivalent amount of an off-balance sheet exposure of the institution that is not specified in *Table 6* or *[..]* by multiplying the principal amount of the exposure -

(a) subject to *paragraph (b)*, by a credit conversion factor of 100%; or

(b) such other credit conversion factor as the Monetary Authority specifies by notice published in the Gazette.

40. Maturity (M) under FIRB

An authorized institution which uses the FIRB for its corporate, sovereign and bank exposures -

(a) subject to *paragraphs (b)* and *(c)*, shall use 2.5 years for the M for inclusion into the risk-weight function specified in *Formula 1A* or *1B*, as the case requires;

(b) subject to *paragraph (c)*, shall use 6 months for the M in the case of such an exposure which is a repo-style transaction;

(c) may, with the prior consent of the Monetary Authority, calculate the M in accordance with *section 41*.

41. Maturity (M) under AIRB

(1) Subject to *subsection (2)*, an authorized institution which uses the AIRB shall calculate the M for its corporate, sovereign and bank exposures such that -

(a) subject to *subsection (3)*, the M for such an exposure is the greater of -

(i) one year; and

(ii) the remaining effective maturity, in years, of the exposure as calculated in accordance with whichever of *paragraph (b)* or *(c)* is applicable;

(b) subject to *paragraph (c)*, if the exposure is subject to a determined cash flow schedule, the M for the exposure is calculated by the use of *Formula 1E*;

Formula 1E

Calculation of M for corporate, sovereign and bank exposure subject to determined cash flow schedule

$$\text{Effective Maturity (M)} = \sum_t t * CF_t / \sum_t CF_t$$

where: CF_t denotes the cash flows (principal payments, interest payments and fees) contractually payable by the obligor in period t and t is expressed in years (that is, where a payment is due to be received in 18 months, t = 1.5);

(c) if it is not practicable for the institution to comply with *paragraph (b)* in respect of such an exposure, the institution uses a more

prudent measure of the M that is not less than the maximum remaining time, in years, that the obligor is permitted to take to fully discharge the obligor’s contractual obligations (principal payments, interest payments and fees) under the terms of the agreement governing the exposure;

(d) in the case of such an exposure that is the exposure after taking into account the credit risk-mitigating effect of recognized netting in more than one OTC derivative transaction or credit derivative contract subject to recognized netting, the weighted average maturity of the transactions or contracts, as the case may be (using the notional amount of each such contract), is used as the M.

(2) An authorized institution shall use 5 years as the M for any exposure referred to in *subsection (1)* of the institution which would, but for this subsection, have the M of greater than 5 years.

(3) Where an authorized institution which uses the AIRB has a relevant short-term exposure -

(a) *subsection (1)(a)(i)* shall not apply to the exposure; and

(b) the institution shall use as the M for the exposure the greater of -

(i) one day; and

(ii) the remaining effective maturity of the exposure as calculated in accordance with *subsection (1)(b)* or *(c)*, as the case requires.

(4) Where a short-term exposure of an authorized institution falls within *paragraph (a)* of the definition of "relevant short-term exposure" in *subsection (6)* and is the exposure after taking into account the credit risk mitigating effect of recognized netting in more than one relevant short-term exposure subject to recognized netting ("relevant transactions"), the institution shall -

(a) subject to *paragraphs (b)* to *(d)*, use the weighted average maturity of the relevant transactions subject to the recognized netting as the M;

(b) subject to *paragraph (c)*, in determining the M, apply a floor equal to -

(i) 10 days for the relevant transactions that are OTC derivative transactions or margin lending transactions; and

(ii) 5 days for the relevant transactions that are repo-style transactions;

(c) if the relevant transactions consist of more than one transaction type, in determining the M, apply a floor equal to the highest number of days that is applicable amongst the transactions constituting the relevant transactions; and

(d) use the notional amount of each of the relevant transactions for weighing the maturity of the transactions.

[(5) Provision not used.]

(6) In this section, "relevant short-term exposure" ( ), in relation to an authorized institution, means -

(a) an exposure consisting of an OTC derivative transaction or margin lending transaction which is fully or nearly-fully collateralized, or a repo-style transaction with an original maturity of less than one year, where the documentation for the transaction contains clauses -

  (i) requiring daily revaluation or re-margining; and

  (ii) allowing for the prompt liquidation or setoff of the collateral in the event of default or failure to revalue or re-margin, as the case may be; and

(b) an exposure with an original maturity of less than one year that is not part of the institution's ongoing financing of the obligor (there being no rollover of the transaction concerned) and includes -

  (i) an import or export letter of credit, or a similar transaction, that can be accounted for at its actual remaining maturity, or any other short-term self-liquidating trade transaction;

  (ii) a securities purchase, securities sale, cash settlement by wire transfer, foreign exchange settlement, or any other exposure arising from an unsettled non-delivery-versus-payment transaction, if the exposure does not continue for 5 business days or more after the contractual delivery or payment date; and

  (iii) any other short-term exposure in respect of which the institution has satisfied the Monetary Authority that the

institution has no legal obligation to roll over the exposure and will not in practice roll over the exposure.

41A. Maturity (M) under double default framework

Where an authorized institution which has a hedged corporate or bank exposure that is subject to the double default framework, then the institution shall use as the M_{os} for the exposure the greater of -

(a) one year; and

(b) the remaining effective maturity of the credit protection as calculated in accordance with *section 41(1)(b)* or *(c)*, as the case requires.

[*Divisions 6* and *7* - Divisions not used]

Division 8 - Specific requirements for retail exposures

42. Rating dimensions

(1) An authorized institution shall -

(a) ensure that its rating system for retail exposures -

(i) reflects the risk of default of the obligors and transaction - specific factors that affect loss severity upon the default of the obligors under the retail exposures; and

(ii) captures the risk characteristics of the obligors (including types of obligors and their demographics), the risk characteristics of the transactions concerned (including types of transactions, seasoning and collateral features) and the frequency and duration of the delinquency of the retail exposures;

(b) assign each of its retail exposures to not more than one pool of retail exposures in accordance with its rating criteria and based upon all material information regarding the risk characteristics of the obligors under the exposure, the risk characteristics of the transaction to which the exposure relates and the frequency and duration of the delinquency of the exposure; and

(c) estimate the PD, LGD and EAD for each pool of retail exposures.

(2) For the avoidance of doubt, it is hereby declared that different pools of retail exposures of an authorized institution may have the same estimates of the PD, LGD and EAD.

43. Rating structure

An authorized institution shall demonstrate to the satisfaction of the Monetary Authority that its process for assigning its retail exposures to various pools of retail exposures results in the grouping of homogeneous exposures that provides for a consistent, logical and cogent differentiation of credit risk inherent in the retail exposures -

(a) with no excessive concentrations in particular pools of retail exposures; and

(b) that allows for a reasonably accurate, consistent and verifiable quantitative estimate of credit risk for each pool of retail exposures.

44. Rating criteria

An authorized institution shall ensure that -

(a) its rating definitions in respect of the pools of retail exposures; and

(b) its rating processes and criteria for assigning exposures to such pools,

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

45. Rating assignment horizon

(1) An authorized institution shall use a time horizon of more than one year for the purposes of assigning its retail exposures to its pools of retail exposures.

(2) Subject to *subsection (3)*, an authorized institution shall ensure that its assignment of a retail exposure to a pool of retail exposures of the institution represent the institution's best assessment of the obligor's willingness and ability to perform the obligor's contractual obligations, after taking into account any adverse economic conditions and unexpected adverse events that are likely to occur under the current economic conditions or over a business cycle within the industry or geographic region relevant to the obligor.

(3) An authorized institution shall, for the purposes of this section, act prudently in assessing information relating to an obligor's willingness and ability to perform the obligor's contractual obligations.

46. Rating coverage

An authorized institution shall, in the case of each exposure of the institution falling within the IRB class of retail exposures, assign the exposure to a pool of retail exposures as part of the institution's process for giving credit approvals.

47. Integrity of rating process

An authorized institution shall ensure that -

(a) it has in place policies and procedures to ensure the independence of its rating process for retail exposures; and

(b) a review is conducted, not less than once in every 12 months, of -

(i) the risk characteristics and delinquency status of each pool of retail exposures; and

(ii) the status of the obligor under each exposure falling within each pool of retail exposures to ensure that the exposure is assigned to the pool that best reflects the credit risk of the exposure.

48. Calculation of risk-weighted amount for retail exposures

(1) An authorized institution shall, for the purposes of calculating the risk-weighted amount of the institution's retail exposures, provide its estimates of the PD, LGD and EAD for the retail exposures.

(2) An authorized institution shall use *Formula 1F* to determine the risk-weight function to be used to calculate the risk-weighted amount of its retail exposures that -

(a) fall within the IRB subclass of residential mortgages to natural persons or residential mortgages to property-holding shell companies; and

(b) are not in default.

Formula 1F

Determination of risk-weight function for residential mortgages

Correlation (R) = 0.15

Capital requirement (K) = LGD × N [(1 - R)^-0.5 × G (PD) + (R / (1 - R))^0.5 x G (0.999)] – PD x LGD

Risk-weight (RW) = K x 12.5

Risk-weighted amount (RWA) = RW x EAD

(3) An authorized institution shall use *Formula 1G* to determine the risk-weight function to be used to calculate the risk-weighted amount of its retail exposures that -

(a) fall within the IRB subclass of qualifying revolving retail exposures; and

(b) are not in default.

Formula 1G

Determination of risk-weight function for qualifying revolving retail exposures

Correlation (R) = 0.04

Capital requirement (K) = LGD × N [(1 - R)^-0.5 × G (PD) + (R / (1 - R))^0.5 x G (0.999)] – PD x LGD

Risk-weight (RW) = K x 12.5

Risk-weighted amount (RWA) = RW x EAD

(4) An authorized institution shall use *Formula 1H* to determine the risk-weight function to be used to calculate the risk-weighted amount of its residential exposures, not falling within *subsection (2)* or *(3)*, that -

(a) fall within the IRB subclass of other retail exposures to natural persons or small business retail exposures; and

(b) are not in default.

Formula 1H

Determination of risk-weight function for other retail exposures to natural persons and small business retail exposures

Correlation (R) = 0.03 × (1 - EXP (-35 × PD)) / (1 - EXP (-35)) + 0.16 × [1 - (1 -– EXP (-35 × PD)) / (1 - EXP (-35))]

Capital requirement (K) = LGD × N [(1 - R)^-0.5 × G (PD) + (R / (1 - R))^0.5 x G (0.999)] -– PD x LGD

Risk-weight (RW) = K x 12.5

Risk-weighted amount (RWA) = RW x EAD

Where: PD and LGD are expressed as decimals and EAD is expressed in HKD.

(5) An authorized institution shall use the risk-weight function set out in *subsection (2)*, *(3)* or *(4)* as applicable to the IRB subclass into which a retail exposure falls to calculate the risk-weighted amount of the retail exposure which is in default except that the capital requirement ("K") for a defaulter retail exposure shall be equal to the greater of -

(a) zero; and

(b) the resulting amount of the subtraction of the institution's best estimate of the EL of the exposure from the LGD of the exposure.

49. Probability of default (PD)

(1) An authorized institution shall provide an estimate of the PD for each pool of retail exposures of the institution such that -

(a) the estimate of the PD is a long run average of one-year default rates for obligors falling within the pool to which the estimate relates;

(b) for the purposes of deriving the estimate of the PD referred to in *paragraph (a)*, the institution may, based on its estimate of the expected long run loss rate of its retail exposures, use its long run default-weighted average loss rate given default to infer the appropriate estimate of the PD;

(c) subject to *paragraph (d)*, the estimate of the PD to be assigned to a pool of retail exposures that are not in default is the greater of -

(i) the estimate of the PD referred to in *paragraph (a)* associated with the pool; and

(ii) 0.03%;

(d) the estimate of the PD to be assigned to a pool of retail exposures of the institution that are in default is 100%;

(e) subject to *paragraph (f)*, the estimate of the PD for a pool of retail exposures takes into account the future implications of seasoning for any rapid growth in the pool of retail exposures;

(f) the institution has in place procedures to ensure that -

(i) its techniques for estimating the PD are accurate; and

(ii) its current capital level and earnings and funding prospects are sufficient to cover its future capital needs;

(g) the estimate of the PD for a pool of retail exposures of the institution is based on not less than one source of relevant data covering a period of not less than 5 years;

(h) the institution -

(i) uses internal data as the primary source of information for estimating the risk characteristics for each of its pools of retail exposures; and

(ii) only uses external data or statistical models for any estimate of the PD if the institution has demonstrated to the satisfaction of the Monetary Authority that there is a strong link -

(A) between the institution's process of assigning exposures to a pool of retail exposures and the process used by the external data source; and

(B) between the institution's internal risk profile and the composition of the external data; and

(iii) uses all material data sources as points of comparison for internal data referred to in *subparagraph (i)*, or external data and statistical models referred to in *subparagraph (ii)*, used by the institution.

(2) Where an authorized institution does not satisfy the Monetary Authority that it has taken seasoning into account in any estimate of the PD made by it for the purposes of this section, then the Monetary Authority may, by notice in writing given to the institution, require the institution to use the higher PD specified in the notice in place of that estimate of the PD in calculating the institution's regulatory capital.

(3) An authorized institution shall comply with the requirement in a notice given to it under *subsection (2)*.

[(4) Provision not used.]

(5) In this section -

"expected long run loss rate" ( ), in relation to a retail exposure of an authorized institution, means the realized losses over the total EAD of all observed defaults in respect of a group of retail exposures which have similar obligor and transaction characteristics to the retail exposure, measured over the long run;

"long run default-weighted average loss rate given default" ( ), in relation to a retail exposure of an authorized institution, means the estimate of the average economic loss rate, based on all observed defaults within the data source in respect of a group of retail exposures which have similar obligor and transaction characteristics to the retail exposure, that is expected to be incurred in the event of the default of the retail exposure.

50. Loss given default (LGD)

An authorized institution shall estimate the LGD for each pool of retail exposures of the institution such that -

(a) the estimate of the LGD for the pool reflects the effect on loss severity of the retail exposures falling within the pool of different economic downturn conditions where credit losses are expected to be substantially higher than average;

(b) subject to *paragraph (ba)*, the estimate of the LGD for the pool is not less than the long run default-weighted average loss rate given default calculated as the average economic loss rate of all observed defaults within the data source used by the institution for that type of pool;

(ba) without prejudice to the generality of any other paragraph of this subsection, the institution may, based on its estimate of the expected long run loss rate of its retail exposures, use its estimate of the PD as referred to in *section 49* to infer its long run default-weighted average loss rate given default referred to in *paragraph (b)*;

(c) for the purposes of *paragraph (b)*, the institution has in place an effective and well documented process for assessing the effect, if any, of different economic downturn conditions on debt recovery rates in respect of different retail exposures and for producing estimates of the LGD that reflect those conditions;

(d) subject to *paragraph (e)* and without prejudice to the generality of any other paragraph of this section, the estimate of the LGD for a retail exposure that is a residential mortgage falling within *section 48(2)* is not less than 10% during the transitional period;

(e) *paragraph (d)* does not apply to any retail exposures of the institution that are residential mortgages falling within *section 48(2)* that are the subject of recognized guarantees by sovereigns;

(f) in the estimate of the LGD for the pool, the institution has taken into account all major factors relevant to measuring loss, including the time value of money, an appropriate risk premium, and any direct and indirect costs associated with collection in respect of retail exposures falling within the pool;

(g) the institution has -

  (i) taken into account the extent of any positive correlation between the credit quality of the obligor in respect of which the institution has incurred a retail exposure and that of any collateral provided in respect of the retail exposure or that of the provider of the collateral;

  (ii) addressed the effect of any such correlation in a prudent manner; and

  (iii) addressed any currency mismatch and maturity mismatch in a prudent manner;

(h) the estimate of the LGD for the pool -

(i) is based on historical recovery rates; and

(ii) in relation to a retail exposure in respect of which the institution holds collateral, is not based solely on the estimated market value of the collateral;

(i) the estimate of the LGD for a defaulted retail exposure of the institution reflects the possibility that the institution will have to incur unexpected debt losses during the debt recovery period;

[(j) provision not used;]

(k) the estimate of the LGD for the pool is based on not less than one set of material covering a period of not less than 5 years;

(l) if the estimation of the LGD for the pool involves mapping data elements specific to a pool of retail exposures of the institution to the factors in reference data sets used by ECAIs -

(i) the mapping process is based on a comparison of available common elements in the ECAIs' reference data and the pool;

(ii) in any case where the institution combines multiple sets of reference data used by the ECAIs, the institution has in place a policy -

(A) setting out the manner in which the combination is effected;

(B) that ensures that the institution avoids biases or inconsistencies in the mapping approach or the underlying data.

51. Exposure at default (EAD) - on-balance sheet assets

Section 35 shall, with all necessary modifications, apply to an authorized institution's estimation of the EAD for its on-balance sheet retail exposures as it applies to the authorized institution's estimation of the EAD for its on-balance sheet corporate, sovereign and bank exposures.

52. Exposure at default (EAD) - off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts

(1A) Subject to *subsection (1)*, an authorized institution shall provide estimates of credit conversion factors for each type of off-balance sheet exposures specified in *Table 6* in respect of its retail exposures.

(1) *Section 37(4)(a)* to *(e)* shall, with all necessary modifications, apply to an authorized institution's estimation of the EAD for its off-balance sheet retail exposures as they apply to the authorized institution's estimation of the EAD for its off-balance sheet corporate, sovereign and bank exposures (other than OTC derivative transactions and credit derivative contracts).

[(2) Provision not used.]

(3) An authorized institution shall estimate the EAD for each pool of off-balance sheet retail exposures of the institution (other than OTC derivative transactions and credit derivative contracts) such that -

(a) in the case of the estimation of the EAD for retail exposures of the institution with an uncertain future drawdown -

(i) the institution has taken into account -

(A) the institution's overall drawdown and repayment history with regard to its portfolio of retail exposures; or

(B) the institution's expectation based on the history of additional drawings prior to default;

(ii) if the credit conversion factors used by the institution for the calculation of the credit equivalent amount of the retail exposures do not reflect the expectation of additional drawings on the line of credit extended prior to default, the institution has reflected in its estimate of the LGD for the retail exposures the likelihood of such additional drawings;

(b) the estimate(s) of the EAD for retail exposures are based on not less than one source of material data covering a period of not less than 5 years.

52A. Exposure at default (EAD) -OTC derivative transactions and credit derivative contracts

Section 38 shall, with all necessary modifications, apply to an authorized institution’s estimation of the EAD for its retail exposure to an OTC derivative transaction or credit derivative contract as it applies to the institution’s estimation of the EAD for its corporate, sovereign or bank exposure to an OTC derivative transaction or credit derivative contract.

Division 9 - Equity exposures

53. Equity exposures - general

(1) Subject to *subsection (2)*, an authorized institution shall calculate the risk-weighted amount of the institution's equity exposures in its banking book by using -

(a) the market-based approach; or

(b) the PD/LGD approach.

(2) Subject to *sections 54(2)* and *(3)* and *56A*, an authorized institution shall demonstrate to the satisfaction of the Monetary Authority that the market-based approach or the PD/LGD approach used by it to calculate the risk-weighted amount of its equity exposures -

(a) is appropriate to the institution's portfolios of equity exposures;

(b) is applied consistently to those portfolios; and

(c) is not used in a way that takes into account regulatory capital arbitrage considerations.

(3) An authorized institution shall determine the EAD of an equity exposure of the institution on which the institution's calculation of the risk-weighted amount of the equity exposure is based by reference to the value of the equity exposure presented in the institution's balance sheet.

(4) An authorized institution which has holdings in a collective investment scheme containing both equity exposures and non-equity exposures (being those exposures falling within the IRB class of corporate, sovereign, bank, retail or other exposures) shall -

(a) subject to *paragraphs (b)* and *(c)*, treat the holdings as equity exposures or non-equity exposures, as the case requires, and allocate or apportion them, in so far as is practicable, in a consistent manner as if the holdings were directly held by the institution;

(b) if it is not practicable to comply with *paragraph (a)* and subject to *paragraph (c)*, treat the holdings as equity exposures or non-equity exposures based on whether the equity exposures or non-equity exposures are the majority of the holdings under the scheme;

(c) if only the investment mandate of the scheme is known to the institution, treat the holdings as an exposure to the institution on the assumptions that -

(i) the scheme first invests, to the maximum extent allowed under the mandate, in the exposures falling within an IRB class attracting the highest regulatory capital; and

(ii) the scheme then continues making investments in the exposures falling within other IRB classes in descending order of the level of the regulatory capital required until the maximum total investment level of the scheme is reached.

54. Market-based approach

(1) Subject to *subsections (2)* and *(3)*, an authorized institution which uses the market-based approach to calculate regulatory capital for the institution's equity exposures in its banking bank shall use -

(a) the simple risk-weight method;

(b) the internal models method; or

(c) the simple risk-weight method and the internal models method.

(2) Subject to *section 56(1)*, an authorized institution shall only use a market-based method that is -

(a) consistent with the amount and complexity of the institution's equity exposures; and

(b) commensurate with the sophistication of the institution's internal risk management functions.

(3) An authorized institution which uses more than one market-based method for different portfolios of the institution's equity exposures in its banking book shall demonstrate to the satisfaction of the Monetary Authority that -

(a) this course of action is justified having regard to the respective risk profiles of the portfolios; and

(b) the institution uses different methods for the portfolios in its internal risk management functions.

(4) In this section, "market-based method" ( ) means -

(a) the simple risk-weight method; or

(b) the internal models method.

55. Simple risk-weight method

An authorized institution which uses the simple risk-weight method shall -

(a) calculate the risk-weighted amount of an equity exposure of the institution by multiplying the EAD of the equity exposure by a risk-weight of -

(i) 300% for an equity exposure in a publicly traded company (being an equity security traded on a recognized exchange); and

(ii) 400% for any equity exposure of the institution not falling within *subparagraph (i)*;

(b) set off a short position in -

(i) an equity exposure; or

(ii) a derivative contract the value of which is derived from the interests in an equity exposure,

against a long position in the same equity exposure only if that short position has -

(iii) been explicitly designated by the institution as a hedge of the long position in that equity exposure; and

(iv) a remaining maturity of not less than one year;

(c) in the case of a short position in -

(i) an equity exposure; or

(ii) a derivative contract the value of which is derived from the interests in an equity exposure,

which is not permitted to offset a long position in the same equity exposure as specified in *paragraph (b)* -

(iii) treat the short position as if it were a long position in that equity exposure;

(iv) risk-weight the short position in accordance with *paragraph (a)*; and

(v) if there is a maturity mismatch between the long and short positions in the same equity exposure, apply the methodology used under the FIRB for maturity mismatch in respect of corporate exposures.

56. Internal models method

(1) An authorized institution shall not use the internal models method to calculate its regulatory capital in respect of the institution's equity exposures in its banking book unless the institution has demonstrated to the satisfaction of the Monetary Authority that, at all times when the institution is using the internal models method, it does so in compliance with *subsection (2)*.

(2) An authorized institution which uses the internal models method to calculate the regulatory capital for the institution's equity exposures shall -

(a) use its internal models in respect of equity exposures to make the calculation such that the regulatory capital is equivalent to the potential loss on the portfolio of the institution's equity exposures arising from an assumed instantaneous shock equivalent to a one-tailed, 99% confidence interval of the difference between quarterly returns on the portfolio and an appropriate risk-free rate computed over an observation period of not less than 3 years;

(b) ensure that the institution's estimate of potential loss of its equity exposures is -

(i) arrived at using relevant data, information and methods that are available to the institution;

(ii) prudent, statistically reliable and resilient; and

(iii) able to reflect the risk profile of the institution's portfolio of equity exposures against adverse market movements;

(c) ensure that the internal models are capable of dealing with the risk profile (including general market risk and specific risk) and complexity of its portfolios of equity exposures;

(d) ensure that the outputs of the internal models can be quantified in the form of the loss percentile specified in *paragraph (a)*;

(e) ensure that if market data are used in an internal model, the institution updates the data used not less than once in every 3 months and, in any case, reassesses the data whenever market prices are subject to material change;

(f) ensure that the institution fully documents and supports by empirical analysis the portfolio correlations (being the correlation of changes in the returns on an equity exposure to another equity exposure in response to market movements) it has integrated into its measures of potential loss of a portfolio of equity exposures;

(g) ensure that the institution has clear and effective policies, procedures and controls in place to enable it to manage the risk of its portfolios of equity exposures and to ensure the integrity of the internal models and modelling process used to derive its regulatory capital in respect of the portfolios; and

(h) ensure that the institution's internal models are fully integrated into the institution's credit approval, risk management and corporate governance functions and, if section 1(b)(vi)(A) of *Schedule 1* of *Part 2* is applicable to the institution, internal capital allocation.

(2A) An authorized institution which uses the internal models method to calculate the regulatory capital for the institution's equity exposures shall -

(a) calculate the risk-weighted amount in respect of each equity exposure by -

(i) multiplying the regulatory capital of the equity exposure as calculated using its internal models by 12.5; and

(ii) using the simple risk-weight method, multiply the EAD of the equity exposure by the relevant risk-weight of -

(A) 200% for an equity exposure in a publicly traded company; and

(B) 300% for any equity exposure of the institution not falling within *sub-paragraph (A)*; and

(b) apply to each of its equity exposures the greater of the risk-weighted amount calculated under *paragraph (a)(i)* or *(ii)* for the equity exposure concerned.

(3) Where an authorized institution which uses the internal models method is not able to demonstrate to the satisfaction of the Monetary Authority that the institution complies with *subsection (1)*, then the Monetary Authority may, by notice in writing given to the institution, require the institution to use the simple risk-weight method to calculate the regulatory capital for the institution's equity exposures in its banking book for such period, or until the occurrence of such event, as is specified in the notice.

(4) An authorized institution shall comply with the requirement of a notice given to it under *subsection (3)*.

56A. PD/LGD approach

An authorized institution shall not use the PD/LGD approach to calculate its regulatory capital in respect of the institution's equity exposures in its banking book unless the institution has demonstrated to the satisfaction of the Monetary Authority that, at all times when the institution is using the PD/LGD approach, it does so in compliance with *sections 57* to *63*.

57. PD/LGD approach - rating dimensions

(1) An authorized institution which uses the PD/LGD approach to calculate its regulatory capital in respect of the institution's equity exposures in its banking book shall use a rating system that comprises -

(a) one rating scale for obligor grades that only reflects the risk of obligor default; and

(b) another rating scale for facility grades that reflects -

(i) factors affecting loss severity in the case of obligor default; and

(ii) if applicable, obligor characteristics to the extent that the characteristics are predictive of the LGD.

(2) An authorized institution which uses the FIRB complies with *subsection (1)(b)* if its rating system has a facility rating scale that reflects the EL or LGD of exposures of the institution assigned to each grade.

(3) An authorized institution which uses the PD/LGD approach shall -

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

(b) in the case of separate equity exposures to the same obligor, assign the equity exposures to the same obligor grade unless the institution demonstrates to the satisfaction of the Monetary

Authority that the risk of obligor default of the equity exposures is different.

58. PD/LGD approach - rating structure

An authorized institution which uses the PD/LGD approach shall ensure that -

(a) its process for assigning obligors and equity exposures between its obligor or facility grades results in a consistent, logical and cogent differentiation of credit risk inherent in the obligors or exposures -

   (i) with no excessive concentrations in particular obligor grades or facility grades;

   (ii) with the level of perceived and measured credit risk increasing as credit quality declines from one grade to the next;

   (iii) allowing for reasonably accurate, consistent and verifiable quantitative estimates of credit risk; and

(b) its rating system -

   (i) has not less than 7 grades for the obligors who are not in default; and

   (ii) has one obligor grade for obligors who are in default.

59. PD/LGD approach - rating criteria

An authorized institution which uses the PD/LGD approach shall ensure that -

(a) the institution's definitions for obligor grades and facility grades within its rating system; and

(b) the institution's rating processes and criteria for assigning obligors and equity exposures to such grades,

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

60. PD/LGD approach - rating assignment horizon

(1) An authorized institution which uses the PD/LGD approach -

(a) shall use a time horizon of more than one year for the purposes of assigning its obligors to obligor grades; and

(b) subject to *subsection (2)*, shall ensure that each obligor grade represents the institution's best assessment of the obligor's willingness and ability to perform the obligor's contractual obligations, taking into account any adverse economic conditions and unexpected adverse events that are likely to occur under the current economic conditions or over a business cycle within the industry or geographic region relevant to the obligor.

(2) An authorized institution shall, for the purposes of this section, act prudently in assessing information relating to an obligor's willingness and ability to perform the obligor's contractual obligations.

61. PD/LGD approach - rating coverage

An authorized institution which uses the PD/LGD approach shall, in the case of each equity exposure subject to the PD/LGD approach -

(a) assign the equity exposure to a facility grade as part of the credit approval process; and

(b) assign the obligor (including any guarantor or protection seller providing a recognized guarantee or recognized credit derivative contract in respect of the equity exposure) to an obligor grade as part of the credit approval process.

62. PD/LGD approach - integrity of rating process

An authorized institution which uses the PD/LGD approach shall ensure that -

(a) it has in place policies and procedures to ensure the independence of its rating process;

(b) the assignment of obligors and exposures to obligor and facility grades respectively are reviewed and updated not less than once in every 12 months and that obligors or exposures that are more likely to default are subject to more frequent review;

(c) a review of obligor grades and facility grades is initiated, within a reasonable period, whenever the institution becomes aware of any new material information on the obligor or the facility; and

(d) it has in place an effective process to obtain and update relevant information on the obligor's financial condition and on other characteristics that affect assigned estimates of the PD.

63. PD/LGD approach - calculation of risk-weighted amount of equity exposures

(1) An authorized institution which uses the PD/LGD approach shall calculate the risk-weighted amount for its equity exposures in accordance with *sections [27* to *41]* (including recognized credit risk mitigation as set out in *Division 12*), in so far as those sections relate to the use of the FIRB for corporate exposures, except that -

(a) the EAD in respect of an equity exposure shall be determined in accordance with *section 53(3)*;

(b) if the institution does not have a debt exposure to a corporate to which it has an equity exposure such that it does not have sufficient information on the corporate for the use of the default criteria as set out in *section 20*, then the institution shall calculate the risk-weighted amount of the equity exposure such that -

(i) if the EAD of the institution's equity exposures to the corporate is not more than 15% of the institution's total equity exposures, the institution calculates the risk-weighted amount of the equity exposure by multiplying the risk-weight as derived from using the risk-weight function set out in *Formula 1A* (and, if applicable, *section 28*) by 1.5;

(ii) if the EAD of the institution's equity exposures to the corporate exceeds 15% of the institution's total equity exposures, the institution applies the simple risk-weight method set out in *section 55*;

(c) the LGD of 90% shall be used in the risk-weight function for deriving the risk-weight;

(d) the M of 5 years shall be used in the risk-weight function for deriving the risk-weight;

(e) a minimum risk-weight of 100% is applied in the calculation of the risk-weighted amount of a relevant equity exposure if the risk-weight calculated in accordance with *paragraphs (a)* to *(d)* for the relevant equity exposure plus the EL associated with the relevant equity exposure multiplied by 12.5 is less than 100%;

(f) for any equity exposures (including net short positions specified in *section 55(b)*) other than relevant equity exposures, the institution, in the calculation of the risk-weighted amount of an equity exposure if the risk-weight calculated in accordance with *paragraphs (a)* to *(d)* for the equity exposure plus the EL associated with the equity exposure multiplied by 12.5 is less than the minimum risk-weight, applies a minimum risk-weight of -

   (i) 200% for an equity exposure in a publicly traded company; and

   (ii) 300% for any equity exposure not falling within *subparagraph (i)*;]

(g) paragraph not used;

(h) if the risk-weight calculated in accordance with *paragraphs (a)* to *(d)* for an equity exposure of the institution plus the EL associated

with the equity exposure multiplied by 12.5 exceeds 1250%, the institution shall -

(i) apply a maximum risk-weight of 1250% in the calculation of the risk-weighted amount of the equity exposure; or

(ii) deduct the EAD of the equity exposure (treating it as the EL amount of the equity exposure) from the institution's capital base; and

(i) if the institution has entered into any hedging arrangements in respect of an equity exposure which is subject to the PD/LGD approach, the institution -

(i) assigns the LGD of 90% to its exposure to the seller of the hedge; and

(ii) treats its exposure to the seller of the hedge as having the M of 5 years.

(2) In this section, "relevant equity exposure" ( ), in relation to an authorized institution, means an equity exposure of the institution consisting of -

(a) an equity exposure in a publicly traded company where -

(i) the institution's equity exposure is part of a long-term customer relationship;

(ii) any capital gains on the institution's equity exposure are not expected to be realized in the short-term; and

(iii) the institution has no expectation of above trend capital gains (being capital gains in excess of those which would

be anticipated by the institution based upon the historical performance of the equity exposure over a reasonable period) in the long-term; or

(b) an equity exposure in a privately owned company where -

(i) the returns on the institution's equity exposure are based on regular and periodic cash flows not derived from capital gains;

(ii) any capital gains on the equity exposure are not expected to be realized in the short-term; and

(iii) the institution has no expectation of above trend capital gains in the long-term.

[64. Provision not used.]

Division 10 - Specific requirements for other exposures

65. Cash items

An authorized institution shall calculate the risk-weighted amount of its cash items by multiplying the EAD of each item by the relevant risk-weight set out in *Table 7*.

Table 7

Risk-weight for cash items

	Cash items	**Risk-weight**
1.	Cash items falling within *paragraphs (a)*, *(b)*, *(c)* and *(f)* of the definition of "cash items"	0%
2.	Cash items falling within *paragraphs (d)* and *(h)* of the definition of "cash items"	100%
3.	Cash items falling within *paragraph (e)* of the definition of "cash items"	20%
4.	Cash items falling within *paragraph (g)* of the definition of "cash items" that are outstanding -	
	(a) up to and including the 4th business day after the due settlement date;	0%
	(b) including the 5th business day and up to the 15th business day after the due settlement date;	100%
	(c) including the 16th business day and up to the 30th business day after the due settlement day;	625%
	(d) including the 31st business day and up to the 45th business day after the due settlement day; and	937.5%
	(e) including and after the 46th business day after the due settlement day.	1250%

66. Other items

(1) This section shall apply to each on-balance sheet asset or off-balance sheet exposure of an authorized institution which -

(a) does not fall within the IRB class of corporate, sovereign, bank, retail or equity exposures;

(b) is not a securitization exposure; and

(c) is not a cash item.

(2) Subject to *subsections (3)* and *(4)*, an authorized institution shall allocate a risk-weight of 100% to an asset or exposure of the institution to which this section applies.

(3) The Monetary Authority may, by notice in writing given to an authorized institution, require the institution to allocate to an asset (or an asset belonging to a class of assets) or an exposure (or an exposure belonging to a class of exposures) to which this section applies, a risk-weight of more than 100% as specified in the notice.

(4) An authorized institution shall comply with the requirement of a notice given to it under *subsection (2)*.

Division 11 **- Special requirements for certain portfolios of exposures**

67. Purchased receivables

An authorized institution shall -

(a) classify its purchased receivables as retail exposures or corporate exposures in accordance with the nature of the receivables; and

(b) subject to *section 69(1)*, calculate the risk-weighted amount for both default risk and dilution risk for its purchased receivables.

68. Calculation of risk-weight amount for default risk in respect of purchased receivables

(1) An authorized institution shall calculate the risk-weighted amount for default risk in respect of its purchased receivables -

(a) subject to *paragraph (b)*, in the case of a portfolio of purchased receivables which fall into one IRB exposure class only (being the IRB class of corporate exposures or retail exposures) by using in accordance with *Division 5* or *8*, as the case requires, the risk-weight function that is applicable to the IRB subclass into which an exposure in the portfolio of receivables falls;

(b) in the case of a portfolio of purchased receivables containing a mixture of exposures in respect of which the institution cannot separate the exposures into different IRB subclasses, by using the risk-weight function that will result in the highest risk-weighted amount for the exposures in the portfolio.

(2) For the purposes of *subsection (1)*, an authorized institution which purchases retail receivables shall -

(a) comply with *section 70* in calculating the risk-weighted amount for default risk of purchased retail receivables;

(b) base its estimates of the PD and LGD (or, if applicable, the EL) on the assumption that there is no recourse to, or other support from, the seller of the purchased retail receivables or third-party guarantors.

69. Calculation of risk-weighted amount for dilution risk in respect of purchased receivables

(1) An authorized institution shall calculate the risk-weighted amount for dilution risk in respect of its purchased receivables in accordance with *subsection (2)* unless the purchasing authorized institution demonstrates to the satisfaction of the Monetary Authority that the dilution risk it faces in respect of its purchased receivables is immaterial.

(2) For the purposes of calculating the risk-weighted amount for dilution risk in respect of purchased receivables, the purchasing authorized institution shall -

(a) estimate, for a portfolio of purchased receivables as specified in *section 70* ("top down approach"), or for each of the purchased receivables constituting the portfolio of purchased receivables ("bottom-up approach"), the EL for dilution risk (expressed as a percentage of the total EAD of receivables in the relevant portfolio of purchased receivables or the EAD of the relevant purchased receivables, as the case may be);

(b) make the estimate referred to in *paragraph (a)* on the assumption that there is no recourse to, or other support from, the seller of the receivables or third-party guarantors.

(3) An authorized institution shall, for the purpose of calculating the risk-weighted amount for dilution risk in respect of its purchased receivables, use the corporate risk-weight function set out in *Formula 1A* with -

(a) the PD set as equal to the estimate of the EL;

(b) the LGD set at 100%; and

(c) subject to *subsection (4)*, the M determined in accordance with -

(i) in the case of purchased corporate receivables -

(A) *section 40* if the institution uses the FIRB;

(B) *section 41* if the institution uses the AIRB;

(ii) in the case of purchased retail receivables, *section 41*.

(4) An authorized institution may set the M at one-year for the purposes of *subsection (3)(c)* if the institution has demonstrated to the satisfaction of the Monetary Authority that the institution's dilution risk in respect of its purchased receivables is monitored and managed by the institution with a view to being resolved before the expiration of one year after the demonstration.

70. Requirements for authorized institutions using top-down approach to estimate PD, etc. for purchased receivables for default risk, etc.

An authorized institution which uses the top-down approach to estimate the PD and LGD (or, if applicable, the EL) for its purchased receivables for default risk or dilution risk shall -

(a) subject to *paragraph (b)*, group its purchased receivables into homogenous portfolios so that accurate and consistent estimates of the PD and LGD (or, if applicable, the EL) for default risk and estimates of the EL for dilution risk can be determined;

(b) make the grouping required under *paragraph (a)* so as to generally reflect the seller's underwriting practices and the heterogeneity of its customers; and

(c) comply with *Division 8* in respect of the methods and data used for estimating the PD, LGD and EL.

71. Treatment of purchase price discounts, etc. for purchased receivables

(1) Where the purchase price of the purchased receivables sold by an authorized institution to a buyer of those receivables includes a discount which provides the buyer with first loss protection for default losses, dilution losses, or both default losses and dilution losses, then, to the extent that a portion of such a purchase price discount is refundable to the institution by the buyer, , the institution shall treat the refundable amount as an exposure arising from the provision of first loss protection to the buyer in accordance with *Part 7*.

(2) Where -

(a) a buyer of purchased receivables has obtained first loss protection from an authorized institution, which is the seller of those purchased receivables, in the form of collateral or partial guarantees in respect of those receivables (collectively referred to as "mitigants"); and

(b) the mitigants cover default losses, dilution losses, or both default losses and dilution losses,

then the institution shall treat the mitigants as an exposure arising from the provision of first loss protection to the buyer in accordance with *Part 7*.

72. Leasing arrangements

(1) Where an authorized institution has an exposure arising from a leasing arrangement which does not expose the institution to residual value risk, then the institution -

(a) shall treat the exposure as an exposure secured by collateral of the same type as the subject matter of the lease; and

(b) if the collateral referred to in *paragraph (a)* is recognized collateral in accordance with *section 79*, may take into account the credit risk mitigating effect of the collateral in calculating the risk-weighted amount of the exposure.

(2) Where an authorized institution has an exposure arising from a leasing arrangement which exposes the institution to residual value risk, then the institution shall -

(a) calculate the risk-weighted amount for default risk by using the risk-weight function appropriate to the nature of the leasing arrangement, with the EAD set as equal to the discounted lease payment stream, and the PD and LGD as those that the institution assigns to the exposure; and

(b) calculate the risk-weighted amount for residual value risk by multiplying the residual value of the leased asset by 100%.

73. Repo-style transactions

An authorized institution shall apply *sections [..]* and *[..]*, with all necessary modifications, to repo-style transactions except that -

(a) the institution shall determine the risk-weights to be allocated to its exposure under a repo-style transaction in the institution's banking book, falling within *paragraph (a), (b)* or *(d)* of the definition of "repo-style transaction", where the underlying securities are regarded as the institution's assets, in accordance with -

(i) the risk-weight function for corporate, sovereign and bank exposures;

(ii) the risk-weight function for retail exposures; or

(iii) the market-based approach or the PD/LGD approach for equity exposures,

as the case may be, according to the nature of the underlying security and the type of the issuer of the debt security; and

(b) the institution shall determine the risk-weights to be allocated to its exposure under a repo-style transaction in both the institution's banking book and the institution's trading book, falling within *paragraph (c)* or *(d)* of the definition of "repo-style transaction", where the transaction is regarded as a collateralized loan, in accordance with the risk-weight function for corporate, sovereign and bank exposures or the risk-weight function for retail exposures, as the case may be, according to the type of counterparty and may

be subject to the treatment of credit risk mitigation set out in

Division 12.

Division 12 - Credit risk mitigation

74. Credit risk mitigation - general

(1) An authorized institution may take into account the effect of recognized credit risk mitigation in calculating its risk-weighted assets and risk-weighted exposures, including -

(a) recognized collateral;

(b) recognized netting; and

(c) recognized guarantees and recognized credit derivative contracts.

(2) The risk-weighted assets or risk-weighted exposures of an authorized institution in respect of which recognized credit risk mitigation has been adopted by the institution shall not be higher than that of an identical exposure in respect of which recognized credit risk mitigation has not been so adopted.

74A. Recognized collateral

(1) For the purposes of *section 74(1)(a)*, an authorized institution shall only recognize the credit risk mitigating effect of recognized collateral through its determination of the LGD for a corporate, sovereign, bank or retail exposure of the institution against which recognized collateral is held in accordance with -

(a) *section 32* if the exposure is a corporate, sovereign or bank exposure for which the institution uses the FIRB;

(b) *section 33* if the exposure is a corporate, sovereign or bank exposure for which the institution uses the AIRB;

(c) *section 50* if the exposure is a corporate, sovereign or bank exposure for which the institution uses the IRB.

[(2) Provision not used].

(3) Subject to *section 79*, in this section “recognized collateral (   ) -

(a) in relation to a corporate, sovereign or bank exposure for which an authorized institution uses the FIRB, means -

(i) recognized financial collateral (including collateral recognized under *section [..]* except collateral in the form of real property) that satisfies the requirements in respect of the comprehensive approach to the treatment of collateral set out in *section [..]*; or

(ii) recognized IRB collateral (including recognized financial receivables, recognized commercial real estate, recognized

residential real estate and other recognized IRB collateral) that falls within *sections 75* to *77;*

(b) in relation to a corporate, sovereign or bank exposure for which an authorized institution uses the AIRB, or in relation to a retail exposure for which the institution uses the IRB, means collateral the credit risk mitigating effect of which is recognized in accordance with the institution's policies and procedures which satisfy -

(i) the requirements of *section 33*; and

(ii) the requirements in respect of the comprehensive approach to the treatment of collateral set out in *sections [..]*.

75. Provisions supplementary to *section 74A(3)(a)(ii)* - recognized financial receivables

(1) A financial receivable constitutes a recognized financial receivable for a corporate, sovereign or bank exposure of an authorized institution under *section 74A(3)(a)(ii)* only if it is a claim with an original maturity of not more than one year where repayment will be made from the commercial or financial cash flows related to the underlying business assets of the obligor under the exposure and -

(a) the claim is legally enforceable in all relevant jurisdictions and the legal requirements for establishing the claim have been fulfilled;

(b) there is in place a framework that allows the institution to have the claim as a perfected first priority claim;

(ba) the institution has taken all steps to fulfil requirements under the law applicable to the institution's interest in the claim which are necessary to obtain and maintain an enforceable security interest, whether by registration or otherwise or to exercise a right to set-off in relation to title transfer collateral;

(c) the agreement and the legal process underpinning the claim allow the institution to realize the value of the collateral within a reasonable timeframe;

(d) the institution's procedures ensure that any legal conditions required for declaring the default of the customer and timely collection of the collateral are observed;

(e) in the event of the obligor's financial distress or default, the institution has the legal authority to sell or assign the receivables to other parties without the consent of the receivables' obligors;

(f) subject to *paragraph (g)*, the institution has in place an effective process for assessing the credit risk of the receivables taken as collateral covering, inter alia, analysis of the obligor and the type of customers with whom the obligor transacts business;

(g) if the institution relies on the obligor to review the credit risk of the obligor's customers, the institution has reviewed the quality of the obligor's credit policies;

(h) the margin between the amount of the exposure and the value of the receivables reflects the cost of collection, concentration within the receivables pool pledged by the obligor and potential concentration risk across the institution's total exposure;

(i) the institution maintains a continuous and effective monitoring process over the receivables taken as collateral;

(j) the institution reviews, on a regular basis, compliance with loan covenants, environmental restrictions and other legal requirements;

(ja) the institution maintains an effective monitoring process over the receivables to ensure that they fall within the institution's concentration limits;

(k) the institution ensures that-

(i) subject to *subparagraph (ii)*, the receivables pool is diversified and correlation with the obligor is not unduly high;

(ii) if correlation with the obligor is unduly high, the attendant risk is taken into account in the setting of margins of the collateral pool as a whole;

(l) the institution has -

(i) a documented process for collecting payments from the receivables' obligors in the event of the obligor's distress or bankruptcy; and

(ii) in place the facilities that are required in the documented process referred to in *subparagraph (i)* for collecting payments from the receivables' obligors notwithstanding that the institution would normally look to the obligor for collection.

(2) For the avoidance of doubt, it is hereby declared that financial receivables derived from securitization transactions do not fall within *subsection (1)*.

76. Provisions supplementary to *section 74A(3)(a)(ii)* - recognized commercial real estate and residential real estate

Commercial real estate or residential real estate constitutes recognized commercial real estate or recognized residential real estate respectively for a corporate, sovereign or bank exposure of an authorized institution under *section 74A(3)(a)(ii)* only if -

(a) the institution's credit risk in respect of the obligor under the exposure is not materially dependent upon the performance of the underlying property or project but on the capacity of the obligor to repay the exposure from other sources;

(b) the value of the property collateral is not materially dependent on the performance of the obligor;

(ba) the institution has a first lien on, or a first charge over, the property collateral;

(c) the institution's claim on the property collateral is legally enforceable in all relevant jurisdictions and the legal requirements for establishing the claim have been fulfilled;

(ca) the institution has taken all steps to fulfil requirements under the law applicable to the institution's claim on the property collateral which are necessary to obtain and maintain an enforceable security interest, whether by registration or otherwise, or to exercise a right to set-off in relation to title transfer collateral;

(cb) the agreement and the legal process underpinning the institution's interest in the property collateral allow the institution to realize the value of the property collateral within a reasonable timeframe;

(cc) the institution's procedures ensure that any legal conditions required for declaring the default of the customer and timely collection of the property collateral are observed;

(d) the property collateral is valued at not more than the current fair value at which the property collateral could be sold between a willing seller and willing buyer on an arm's length basis on the date of valuation;

(e) the value of the property collateral is monitored frequently and reviewed not less than once in every 12 months;

(f) the institution has in place clearly documented internal policies specifying the types of commercial real estate and residential real estate in respect of which the institution accepts as collateral for its corporate, sovereign or bank exposures and the lending criteria associated with such collateral;

(g) the institution ensures that the property collateral is adequately insured against damage or deterioration; and

(h) the institution monitors the risk of environmental liability arising in respect of the property collateral.

77. Provisions supplementary to *section 74A(3)(a)(ii)* - other recognized IRB collateral

(1) Subject to *subsection (2)*, physical collateral constitutes other recognized IRB collateral for a corporate, sovereign or bank exposure of an authorized institution under *section 74A(3)(a)(ii)* only if -

(a) a liquid market exists for the disposal of the physical collateral in an expeditious and economically efficient manner;

(b) well-established and publicly available market prices exist for the physical collateral;

(c) the institution has a first lien on, or a first charge over, the physical collateral;

(ca) the institution's claim on the physical collateral is legally enforceable in all relevant jurisdictions and the legal requirements for establishing the claim have been fulfilled;

(d) the institution has taken all steps to fulfil requirements under the law applicable to the institution's claim on the physical collateral which are necessary to obtain and maintain an enforceable security interest, whether by registration or otherwise, or to exercise a right to set-off in relation to title transfer collateral;

(e) the agreement and the legal process underpinning the institution's interest in the physical collateral allow the institution to realize the value of the physical collateral within a reasonable timeframe;

(f) the institution's procedures ensure that any legal conditions required for declaring the default of the customer and timely collection of the physical collateral are observed;

(g) subject to *paragraph (h)*, the loan agreement underpinning the physical collateral includes detailed descriptions of the collateral and detailed specifications of the manner and frequency of revaluation of the collateral;

(h) in the case of inventories and equipment, the periodic revaluation process includes physical inspection of the collateral;

(i) the institution has in place clearly documented written internal policies specifying -

  (i) the types of physical collateral in respect of which the institution accepts as collateral for its corporate, sovereign or bank exposures and the lending criteria associated with such collateral; and

  (ii) for the purposes *subparagraph (i)*, the minimum ratio of the collateral value to the EAD of an exposure for each type of physical collateral to be so recognized;

(j) the institution ensures that the physical collateral is adequately insured against damage or deterioration; and

(k) the institution monitors the risk of environmental liability arising in respect of the physical collateral.

(2) A physical asset acquired by an authorized institution in the course of debt recovery shall not be recognized as other recognized IRB collateral.

[**78. Provision not used.]**

79. Leased assets may be recognized as collateral

A leased asset of an authorized institution constitutes recognized collateral under *section 74A(3)* only if-

(a) the lease concerned does not expose the institution to residual value risk;

(b) the underlying asset meets the requirements set out in -

(i) *section 76* if it is commercial real estate or residential real estate;

(ii) *section 77* if it is a physical asset;

(c) the institution has effective policies and procedures for managing the risk of the leased asset with respect to the location of the asset, the use to which it is put, its age and its planned obsolescence;

(d) there is in place a legal framework that establishes the institution's legal ownership of the leased asset and its ability to exercise its rights as the owner within a reasonable timeframe; and

(e) the difference between the rate of depreciation of the physical leased asset and the rate of amortization of the lease payments is not so great as to overstate the credit risk mitigation recognized in respect of the asset.

80. Recognized netting

(1) Where an authorized institution is entitled pursuant to a valid bilateral netting agreement to net amounts owed by the institution to a counterparty against amounts owed by the counterparty to the institution ("recognized netting"), then the institution may take into account the credit risk mitigating effect of the recognized netting in calculating its net exposure to the counterparty.

(2) Subject to *subsection (4)*, an authorized institution shall apply *sections [..]* to *[..]*, with all necessary modifications, to take into account the credit risk mitigating effect of recognized netting in calculating its net exposure to the counterparty in respect of -

(a) the institution's on-balance sheet assets; and

(b) OTC derivative transactions and credit derivative contracts [in the institution's trading book].

(3) Where a repo-style transaction entered into by an authorized institution is subject to a valid bilateral netting agreement, the institution may only recognize the credit risk mitigating effect of the recognized netting in accordance with *section 32(3)(e)* or *33*.

(4) For the purposes of *subsection (2)*, the definitions of the terms "credit equivalent amount" and "principal amount" in *section [..]* shall apply to references to those terms in *sections [..]* to *[ ]*.

81. Recognized guarantees and recognized credit derivative contracts

(1) Subject to *subsection (2)*, an authorized institution shall take into account the credit risk mitigating effect of a recognized guarantee (being a recognized guarantee under the substitution approach or a recognized guarantee under the double default framework) or a recognized credit derivative contract (being a recognized credit derivative contract under the substitution approach or a recognized credit derivative contract under the double default framework) in accordance with *sections 83* to *91*.

(2) An authorized institution shall -

(a) have in place clearly specified criteria, methods and processes, which comply with *sections 82* to *91*, for recognizing the credit risk mitigating effect of recognized guarantees and recognized credit derivative contracts; and

(b) subject to *section 84(2)*, recognize such effects consistently -

(i) both for a given type of recognized guarantee or credit derivative contract; and

(ii) over time.

(3) In this Division -

"recognized credit derivative contract under the double default framework" ( ), in relation to a corporate or bank exposure of an authorized institution, means a credit derivative contract that is entered into by the institution as a protection buyer and which falls within *section 88*;

"recognized credit derivative contract under the substitution approach" ( ), in relation to a corporate, sovereign, bank, retail or equity exposure of an authorized

institution, means a credit derivative contract that is entered into by the institution as a protection buyer and which falls within *section 82* or *83*;

"recognized guarantee under the double default framework" ( ), in relation to a corporate or bank exposure of an authorized institution, means a guarantee provided to the institution as a beneficiary and which falls within *section 88*;

"recognized guarantee under the substitution approach" ( ), in relation to a corporate, sovereign, bank, retail or equity exposure of an authorized institution, means a guarantee provided to the institution as a beneficiary and which falls within *section 82* or *83*.

82. Provisions supplementary to *section 81(3)* - recognized guarantees and recognized credit derivative contracts under substitution approach for corporate, sovereign and bank exposures under FIRB and for equity exposures under PD/LGD approach

(1) Subject to *subsection (2)*, a guarantee falling within *section [..]* constitutes a recognized guarantee under the substitution approach, and a credit derivative contract falling within *section [..]* constitutes a recognized credit derivative contract under the substitution approach, for the purpose of *section 81(3)* in relation to -

(a) a corporate, sovereign or bank exposure of an authorized institution for which the institution uses the FIRB; and

(b) an equity exposure of an authorized institution for which the institution uses the PD/LGD approach

(2) For the purposes of *subsection (1)* -

(a) *subparagraph (vi)* of each of *sections [..]* and *[..]* shall be deemed to have the words "a corporate which has a current ECAI issuer rating, or is assigned by the institution an estimate of the PD which, if mapped to a scale of uniform credit quality grades in Table C set out in *Schedule [..]*, would result in the corporate being assigned a credit quality grade of 2 or lower";

(b) subject to *paragraph (c)*, the references in *section [.]* to a credit derivative contract shall not include [cash-funded] credit-linked notes issued by an authorized institution;

(c) [cash funded] credit-linked notes issued by an authorized institution which fall within *section [..]* shall be treated as cash collateralized transactions.

83. Provisions supplementary to *section 81(3)* - recognized guarantees and recognized credit derivative contracts under substitution approach for corporate, sovereign and bank exposures under AIRB and for retail exposures under IRB

(1) For the purpose of *section 81(3)*, a guarantee or credit derivative contract ("relevant credit protection"), in relation to -

(a) a corporate, sovereign or bank exposure of an authorized institution for which the institution uses the AIRB; or

(b) a retail exposures of an authorized institution for which the institution uses the IRB,

constitutes a recognized guarantee under the substitution approach, or a recognized credit derivative contract under the substitution approach, as the case may be, only if -

(c) the relevant credit protection is evidenced in writing, non-cancellable on the part of the protection provider, in force until the debt is satisfied in full (to the extent of the amount and tenor of the relevant credit protection) and legally enforceable against the protection provider in a jurisdiction where the protection provider has assets to attach and enforce a judgment;

(d) the institution has in place clearly specified criteria for the types of guarantors or protection providers which it will recognize for credit risk mitigation purposes under the substitution approach; and

(e) the criteria used by the institution in recognizing a credit derivative contract under the substitution approach require that the reference

obligation under the credit derivative contract on which the protection of that contract is based (being the reference asset) cannot be different from the underlying exposure unless the conditions specified in *section [..]* are satisfied.

83A. Provisions supplementary to *section 81(3)* - recognized guarantees and recognized credit derivative contracts under double default framework

For the purposes of *section 81(3)*, a guarantee or credit derivative contract, in relation to a corporate or bank exposure of an authorized institution, constitutes a recognized guarantee under the double default framework, or a recognized credit derivative contract under the double default framework, only if -

(a) the guarantee or credit derivative contract is a single-name guarantee or a single-name, unfunded credit derivative contract;

(b) the guarantee or credit derivative contract is a first-to-default guarantee or first-to-default credit derivative contract in respect of which the double default treatment will be applied to the exposure within the basket with the lowest risk-weighted amount; or

(c) the guarantee or credit derivative contract is an nth-to-default guarantee or credit derivative contract in respect of which the credit protection obtained can only be recognized under the double default framework if a recognized $(n\text{-}l)^{th}$ default protection has also been obtained or where (n-l) of the exposures within the basket have already defaulted.

(d) the guarantee or credit derivative contract meets the requirements set out in *section [..]* (except for *paragraph (a)* of that section) or *section [..]* (except for *subsection (1)(a)* of that section), as the case may be;

(e) the institution has the right to receive payment from the guarantor or protection seller without having to take legal action in order to pursue the obligor of the underlying exposure for payment;

(f) the institution has, to the extent practicable, taken steps to satisfy itself that the guarantor or protection seller is willing to pay promptly if a credit event occurs;

(g) the credit protection will absorb all credit losses incurred on the hedged exposures of the underlying exposure referred to in *section 88(4)(a)* that may arise due to the occurrence of a credit event specified in the guarantee or credit derivative contract;

(h) in any case where the payout structure provides for physical settlement, there is legal certainty with respect to the deliverability of a loan, bond or contingent liability;

(ha) in any case where the institution intends to deliver an obligation other than the underlying exposure, the institution has ensured that the deliverable obligation is sufficiently liquid so that the institution would have the ability to purchase it for delivery in accordance with the relevant guarantee or contract;

(i) the terms and conditions of the credit protection arrangement is confirmed in writing by the guarantor or protection seller and the institution;

(j) in the case of credit protection against dilution risk, the seller of purchased receivables is not a member of the group of companies,

or a member of a group of connected corporates that the institution of which the guarantor or protection seller is a member;

(k) subject to *paragraph (ka)*, there is no excessive correlation between the creditworthiness of a guarantor or protection seller and the obligor of the underlying exposure due to their respective performance being dependent on common factors beyond the systematic risk factors; and

(ka) the institution has in place a process to detect excessive correlation referred to in *paragraph (k)*.

(6) In this Division -

"common factors beyond the systematic risk factors" ( ), in relation to the relevant credit protection under the double default framework covering an exposure of an authorized institution, means factors common both to the guarantor or the protection seller and the obligor of the underlying exposure due to a close economic or legal link;

"systematic risk factors" ( ), in relation to the relevant credit protection under the double default framework covering an exposure of an authorized institution, means factors in the entire market or market segment.

84. Capital treatment of recognized guarantees and recognized credit derivative contracts

(1) Subject to *section 91*, an authorized institution which takes into account the credit risk mitigating effect of a recognized guarantee or recognized credit derivative contract in calculating its risk-weighted amount for an exposure of the institution shall do so using -

(a) the substitution approach in the case of a recognized guarantee under the substitution approach or a recognized credit derivative contract under the substitution approach;

(b) the double default framework in the case of a recognized guarantee under the double default framework or a recognized credit derivative contract under the double default framework if, and only if, the exposure falls within *section 88*.

(2) An authorized institution may use the substitution approach, or the double default framework, to take into account the credit risk-mitigating effect of a recognize guarantee or a recognized credit derivative contract for each exposure that falls within *subsection (1)(b)*.

85. Provisions supplementary to *section 84(1)(a)* - substitution approach - general

An authorized institution which uses the substitution approach in respect of a corporate, sovereign, bank, retail or equity exposure of the institution -

(a) shall not reflect the effect of double default when taking into account the credit risk mitigating effect of a recognized guarantee under the substitution approach or a recognized credit derivative contract under the substitution approach ("relevant credit protection under the substitution approach") in calculating its risk-weighted amount for the exposure; and

(b) shall, to the extent that the effect of the relevant credit risk mitigation provided by the relevant credit protection under the substitution approach is taken into account by the institution in calculating its risk-weighted amount for the exposure, ensure that the risk-weight of the exposure concerned as adjusted after taking into account the relevant credit protection under the substitution approach is not less than that of a comparable direct exposure to the guarantor or protection seller, as the case may be.

86. Provisions supplementary to *section 84(1)(a)* - substitution approach for corporate, sovereign and bank exposures under FIRB and for equity exposures under PD/LGD approach

An authorized institution shall, in relation to -

(a) a corporate, sovereign or bank exposure for which the institution uses the FIRB; or

(b) an equity exposure for which the institution uses the PD/LGD approach,

take into account the credit risk mitigating effect of a recognized guarantee under the substitution approach or a recognized credit derivative contract under the substitution approach ("relevant credit protection under the substitution approach") to which the exposure relates by

(c) subject to *paragraph (d)*, dividing the EAD of the exposure into the portion covered by the relevant credit protection under the substitution approach ("covered portion") and the portion not covered by the relevant credit protection under the substitution approach ("uncovered portion");

(d) if there is a partial coverage of an exposure by a recognized guarantee or a recognized credit derivative contract, splitting the exposure into the covered and uncovered portions such that -

(i) where the amount against which the relevant credit protection under the substitution approach is held is less than the EAD of the exposure, and the secured and

unsecured portions are of equal seniority (being that the institution and the guarantor or protection seller share losses on a pro-rata basis), the amount against which the relevant credit protection under the substitution approach is held is the covered portion of the exposure receiving the treatment set out in *paragraph (e)* and the excess of the EAD of the exposure over the covered portion is the uncovered portion receiving the treatment set out in *paragraph (f);*

(ii) where the institution has transferred a portion of the credit risk of the exposure in one or more tranches to a protection seller and retains some level of credit risk of the exposure and the credit risk transferred and the credit risk retained are of different seniority, treat the exposure as a securitization exposure as set out in *Part [..]*;

(e) in the case of the covered portion -

(i) subject to *subparagraph (ii)*, deriving a risk-weight by using the risk-weight function appropriate to the type of guarantor or protection seller concerned, and the PD for the obligor grade to which the guarantor or protection seller is assigned;

(ii) in any case where the institution considers that it is not appropriate in assessing the credit risk to which the

institution is exposed to substitute the obligor grade of the guarantor or protection seller for that of the primary obligor, using the PD of an obligor grade falling within the obligor grade of the primary obligor and the obligor grade of the guarantor or protection seller;

(iii) replacing at its discretion the estimate of the LGD of the exposure with the estimate of the LGD of the relevant credit protection under the substitution approach after taking into account the seniority in terms of ranking for payment, and any recognized collateral provided to the institution for the relevant credit protection under the substitution approach;

(f) in the case of the uncovered portion, assigning a risk-weight calculated in the same manner as any other direct exposure to the primary obligor;

(g) if there is a currency mismatch (being that the credit protection is denominated in a currency different from that of the underlying exposure) between the exposure and the relevant credit protection under the substitution approach, adjusting the value of the credit protection, with all necessary modifications, in accordance with *section [..]*;

(h) if there is a maturity mismatch (being the credit protection held by the institution in respect of an exposure of the institution having a

residual maturity shorter than the residual maturity of the underlying exposure) between the exposure and the relevant credit protection under the substitution approach, adjusting the value of the credit protection, with all necessary modifications, in accordance with *section [..]*.

87. Provisions supplementary to *section 84(1)(a)* - substitution approach for corporate, sovereign and bank exposures under AIRB and for retail exposures under IRB

(1) Subject to *subsection (3)* and *sections 81(2)(b)* and *85*, an authorized institution shall, in relation to -

(a) a corporate, sovereign or bank exposure for which the institution uses the AIRB; or

(b) a retail exposure for which the institution uses the IRB,

take into account the credit risk mitigating effect of a recognized guarantee under the substitution approach or a recognized credit derivative contract under the substitution approach ("relevant credit protection under the substitution approach") to which the exposure relates, by reflecting such effect through the adjustment to the institution's estimate of the PD or LGD.

[(2) Provision not used.]

(3) Subject to *subsection (4)*, an authorized institution shall ensure that its criteria and processes for making adjustments pursuant to *subsection (1)* to its estimates of the PD or LGD -

(a) subject to *paragraphs (b)* to *(e)*, follow the requirements set out in these Rules applicable to the institution for assigning obligors to obligor grades and exposures to facility grades;

(b) address the ability and willingness of the guarantor or protection seller to perform under the guarantee or credit derivative contract;

(c) address the likely timing of any payments under the guarantee or credit derivative contract and the degree to which the ability of the guarantor or protection seller to perform under the guarantee or credit derivative contract is correlated with the obligor's ability to repay; and

(d) take into account the extent to which residual risk to the obligor remains (including a currency mismatch and maturity mismatch between the relevant credit protection under the substitution approach and the underlying exposure); and

(4) An authorized institution may specify that an adjustment to the estimate of the PD pursuant to *subsection (1)* be made in accordance with *section 86*.

88. Provisions supplementary to *section 84(1)(b)* - double default framework

(1) Subject to *subsections [..]* to *[..]*, where a corporate or bank exposure of an authorized institution -

(a) is covered by a recognized guarantee under the double default framework or a recognized credit derivative contract under the double default framework ("relevant credit protection under the double default framework"); and

(b) satisfies the requirements specified in *subsection (3)*,

then the institution may take into account the credit risk mitigating effect of the relevant credit protection under the double default framework in accordance with *subsection (4)*.

[(2) Provision not used.]

(3) An authorized institution shall only apply the double default framework to an exposure of the institution covered by the relevant credit protection under the double default framework if -

(a) the risk weight associated with the underlying exposure prior to the application of the double default framework does not already factor in any aspect of credit protection;

(b) the guarantor or protection seller of the underlying exposure is a financial firm;

(c) the underlying exposure is -

(i) a corporate exposure except for specialized lending under the supervisory slotting criteria approach; or

(ii) an exposure which falls into the IRB subclass of public sector entities that are not sovereign foreign public sector entities;

(d) the obligor of the underlying exposure is not -

(i) a financial firm; or

(ii) a member of a group of companies, or a member of a group of connected corporates that the institution consolidates for its risk management purposes, of which the guarantor or protection seller is also a member.

(4) An authorized institution shall take into account the credit risk mitigating effect of relevant credit protection under the double default framework by -

(a) dividing the EAD of the exposure to which the relevant credit protection under double default framework relates into -

(i) the portion covered by the relevant credit protection under the double default framework ("hedged exposure"); and

(ii) the portion not covered by the relevant credit protection under the double default framework ("unhedged exposure");

(b) calculating the risk-weighted amount of the hedged exposure by using the risk-weight function set out in *Formula 1B*;

(c) calculating the risk-weighted amount of the unhedged exposure in the same way as its other exposures to the obligor of the underlying exposure.

[**89. Provision not used.]**

[**90. Provision not used.]**

91. Capital treatment of recognized guarantees and recognized credit derivative contracts in respect of purchased receivables

(1) Subject to *subsections (3)* to *(7)*, an authorized institution may take into account the credit risk mitigating effect of recognized guarantees or recognized credit derivative contracts for its exposures to purchased receivables -

(a) in accordance with *sections 81* to *88*; and

(b) without regard to whether the recognized guarantee or recognized credit derivative contract, as the case may be, covers default risk, dilution risk, or both default risk and dilution risk.

[(2) Provision not used.]

(3) Where an authorized institution holds a recognized guarantee as a beneficiary or has entered into a recognized credit derivative contract as protection buyer in respect of its exposure to purchased receivables, and the guarantee or contract, as the case may be, covers both default risk and dilution risk for a purchased receivable or portfolio of purchased receivables, then the institution shall, in calculating the risk-weighted amount of the purchased receivable or portfolio of purchased receivables, as the case may be, substitute the risk-weight of a comparable direct exposure to the guarantor or protection seller for the sum of the risk-weights for default risk and dilution risk of the purchased receivable or the purchased receivables in the portfolio, as the case may be.

(4) Where a recognized guarantee or recognized credit derivative contract covers only default risk or dilution risk, but not both, of a purchased receivable or portfolio of purchased receivables of an authorized institution, then the institution shall,

for the purposes of calculating the risk-weighted amount for default risk and dilution risk for the purchased receivable or portfolio of purchased receivables, as the case may be -

(a) substitute the risk-weight of a comparable direct exposure to the guarantor or protection seller for the risk-weight of the purchased receivable or purchased receivables in the portfolio, as the case may be, for the corresponding risk component (being default risk or dilution risk) for the purpose of calculating the risk-weighted amount in respect of the corresponding risk component for the purchased receivable or the purchased receivables in the portfolio, as the case may be;

(b) calculate the risk-weighted amount in respect of the institution's exposures to the other risk component (being default risk or dilution risk) for the purchased receivable or the purchased receivables in the portfolio, as the case may be, in accordance with *section 67(b)*; and

(c) aggregate the risk-weighted amount referred to in *paragraph (a)* with the risk-weighted amount referred to in *paragraph (b)*.

(5) Where a recognized guarantee or recognized credit derivative contract covers only a portion of the default risk or dilution risk in respect of a purchased receivable or portfolio of purchased receivables of an authorized institution, the institution shall, for the purposes of calculating the risk-weighted amount for default risk and dilution risk for the purchased receivable or portfolio of purchased receivables, as the case may be -

(a) divide the exposure into a covered portion and an uncovered portion for the default risk and dilution risk in accordance with *section 86(d)*;

(b) calculate the risk-weighted amount in respect of the uncovered portion of the exposure for the default risk and dilution risk in accordance with *section 67(b)*,

(c) calculate the risk-weighted amount in respect of the covered portion of the exposure for the default risk and dilution risk in accordance with *subsection (3)*;

(d) aggregate the risk-weighted amount referred to in *paragraph (b)* with the risk-weighted amount referred to in *paragraph (c)*.

(6) Subject to *subsection (7)*, where a guarantee or credit derivative contract covers only the dilution risk in respect of an exposure of an authorized institution in purchased receivables and which constitutes a recognized guarantee or recognized credit derivative contract under the double default framework, the institution may take into account the credit risk mitigating effect of the recognized guarantee or recognized credit derivative contract, as the case may be, under the double default framework for the hedged exposure.

(7) For the purposes of *subsection (6)*, the risk-weighted amount of an exposure falling within that subsection shall be calculated -

(a) using the risk-weight function specified in *Formula 1B*;

(b) with -

(i) PD_o equal to the estimate of the EL;

(ii) LGD_g equal to 100%; and

(iii) M_{os} set in accordance with *section 41A*.

[92. Provision not used.]

[93. Provision not used .]

Division 12A - Treatment of expected losses and eligible provisions

94. EL - EP calculation for corporate sovereign, bank and retail exposures

(1) An authorized institution -

(a) shall compare the total EL amount and the total EP, as calculated in accordance with *subsections (2)* to *(5)* and *section 95*; and

(b) if the total EL amount exceeds the total EP, shall deduct the difference from the institution's capital base in accordance with *section [..]*;

(c) if the total EL amount is less than the total EP, may, in accordance with *section [..]*, include the difference in its supplementary capital up to a maximum of 0.6% of the institution's credit risk-weighted amount determined under this Part.

(2) An authorized institution -

(a) shall calculate the EL as the PD x LGD for its corporate, sovereign, bank and retail exposures which are not in default;

(b) subject to *paragraph (c)*, shall determine and use its best estimate of the EL for each of its corporate, sovereign, bank and retail exposures which are in default based on current economic circumstances and the exposure's default status;

(c) may, if it uses the FIRB and has the prior consent of the Monetary Authority to do so, use the supervisory estimate for the LGD as the

EL for its corporate, sovereign and bank exposures that are in default.

(3) Subject to *subsection (4)*, where an authorized institution uses the supervisory slotting criteria approach for its specialized lending, the institution shall determine the EL of the specialized lending by multiplying the risk-weighted amount of the specialized lending by 8%.

(4) Subject to *subsection (5)*, an authorized institution shall, for the purposes of *subsection (3)*, determine the risk-weight to be used in the calculation of the risk-weighted amount of an exposure (being the EAD x risk-weight) in accordance with *Table 8* by reference to the relevant supervisory slotting category to which the exposure has been mapped.

Table 8

Risk-weight to be used for specialized lending

Strong	Good	Satisfactory	Weak	Default
5%	10%	35%	100%	625%

(5) Where an authorized institution has under *section 29(3)* the prior consent of the Monetary Authority to assign preferential risk-weights to its specialized lending falling into the strong and good categories, then, in the calculation of the risk-weighted amount of the specialized lending, the institution may assign preferential risk-weights of 0% and 5% to the specialized lending falling into the strong and good categories respectively in calculating the EL.

95. Determination of EP for calculation of total EP

Where an authorized institution which uses the IRB also uses the STC or BSA, or both the STC and BSA, to calculate its credit risk for a portion of its corporate, sovereign, bank and retail exposures, then the institution shall exclude from the calculation of the total EP in accordance with *section [..]* those EP that are attributable to that portion of its exposures subject to the STC or BSA, or both the STC and BSA, as the case requires.

96. Equity exposures - market-based approach

An authorized institution which uses the market-based approach in respect of its equity exposures shall deem the EL amount to be zero for the equity exposures.

97. Equity exposures - PD/LGD approach

(1) Subject to *subsection (2)*, an authorized institution which uses the PD/LGD approach for its equity exposures shall deduct the EL amount for the equity exposures from its capital base in accordance with *section [..]*.

(2) For the purposes of *subsection (1)*, an authorized institution shall -

(a) in determining the EL amount for its equity exposures that are not in default, calculate the EL as the PD x LGD if the risk-weighted amount of the equity exposure concerned is not calculated using the risk-weights set out in *section 63(1)(f)*, *(g)* and *(i)*;

(b) if the minimum risk-weights set out in *section 63(1)(f)* and *(g)*, or the maximum risk-weights set out in *section 63(1)(i)(i)*, are applied in respect of its equity exposures that are not in default, deem the EL amount of the equity exposures to be zero;

(c) in the case of its equity exposures that are in default, determine and use its best estimate of the EL for each of the exposures based on current economic circumstances and the exposure's default status.

Division 12B - Scaling factor

98A. Application of scaling factor

An authorized institution shall multiply the risk-weighted amount of -

(a) the institution's non-securitization exposures as calculated in accordance with *sections 10* to *92*; and

(b) the institution's securitization exposures as calculated in accordance with *Part 7* insofar as that Part relates to the use of the IRBS,

by a scaling factor of 1.06 to arrive at the institution's credit risk-weighted amount under the use of the IRB and IRBS.

Division 13 - Capital floor

98. Application

(1) Subject to *subsection (2)*, this Division shall apply to an authorized institution until the 3rd anniversary of the date on which it commenced using the IRB to calculate its credit risk for all or any parts of the period.

(2) Where an authorized institution fails to fully comply with the sections of this Part that are applicable to it, the Monetary Authority may, for the purposes of mitigating the effect of that failure, by notice in writing given to the authorized institution -

(a) extend the period for which the institution shall be subject to this Division; or

(b) again apply this Division to the institution,

for such period, or until the occurrence of such event, as is specified in the notice, and may in that notice specify an adjustment factor which shall be used by the institution for those purposes.

99. Calculation of capital floor

(1) An authorized institution shall -

(a) calculate the difference between -

(i) the floor amount calculated under *subsections (2)* to *(6)*; and

(ii) the actual amount calculated under *subsection (7)*;

(b) if the floor amount referred to in *paragraph (a)*(i) is larger than the actual amount referred to in *paragraph (a)(ii)*, the institution shall multiply the difference by 12.5 and add the resulting figure to its total risk-weighted assets and risk-weighted exposures for the computation of its capital adequacy ratio.

(2) An authorized institution which starts to use the IRB during the transitional period shall, for the purposes of *subsection (1)*, calculate the floor amount by multiplying the amount determined under *subsection (3)* in respect of the institution by an adjustment factor determined under *subsection (6)*.

(3) An authorized institution shall arrive at the relevant amount for the purposes of *subsection (2)* by -

(a) determining its total risk-weighted amount for credit risk by using –

(i) the BSA or, with the prior consent of the Monetary Authority, the STC for non-securitization exposures; and

(ii) the STS for securitization exposures;

(b) determining its total risk-weighted amount for market risk by using the calculation approach currently used by the institution for market risk;

(c) aggregating the amounts determined under *paragraphs (a)* and *(b)*; and

(d) taking 8% of the aggregated amount and -

(i) adding to it all the deductions made from the institution's capital base; and

(ii) subtracting from it the amount of regulatory reserve for general banking risks and collective provisions that are recognized in the institution's supplementary capital.

(4) An authorized institution which starts to use the IRB after the transitional period shall, for the purposes of *subsection (1)*, calculate the floor amount by multiplying the amount determined under *subsection (5)* in respect of the institution by an adjustment factor determined under *subsection (6)*.

(5) An authorized institution shall arrive at the relevant amount for the purposes of *subsection (4)* by -

(a) determining its total risk-weighted amount for credit risk by using the STC for non-securitization exposures and the STS for securitization exposures;

(b) determining its total risk-weighted amount for market risk by using the calculation approach currently used by the institution for market risk;

(c) determining its total risk-weighted amount for operational risk by using the calculation approach currently used by the institution for operational risk;

(d) aggregating the amounts determined under *paragraphs (a)*, *(b)* and *(c)*; and

(e) taking 8% of that aggregate amount and -

(i) adding to it all the deductions made from the institution's capital base; and

(ii) subtracting from it the amount of regulatory reserve for general banking risks and collective provisions that are recognized in the institution's supplementary capital.

(6) Subject to *section 98(2)*, an authorized institution which uses the IRB (whether during or after the transitional period) shall use the adjustment factors specified in *Table 9*.

Table 9

Adjustment factors

Date of IRB implementation	1st year of implementation	2nd year of implementation	3rd year of implementation
Within transitional period	95%	90%	80%

After transitional period	90%	80%	70%

(7) An authorized institution shall, for the purposes of *subsection (1)*, calculate the actual amount by -

(a) determining its total risk-weighted amount for credit risk by using the calculation approach currently used by the institution for credit risk;

(b) determining its total risk-weighted amount for market risk by using the calculation approach currently used by the institution for market risk;

(c) determining its total risk-weighted amount for operational risk by using the calculation approach currently used by the institution for operational risk;

(d) aggregating the amounts determined under *paragraphs (a)*, *(b)* and *(c)*; and

(e) taking 8% of that aggregate amount and -

(i) either subtracting from it the surplus amount recognized in the institution's supplementary capital under *section [..]* if the institution's total EP exceeds the total EL amount as specified in *section 94(1)(c)* or adding to it any shortfall amount deducted from the institution's supplementary

capital under *section [..]* if the institution's total EP is below the total EL amount as described in *section 94(1)(b)*;

(ii) adding to it all other deductions made from the institution's capital base; and

(iii) subtracting from it the amount of regulatory reserve for general banking risks and collective provisions that are recognized in the institution's supplementary capital if the institution uses the BSA or STC for any portion of its non-securitization exposures or the STS for any portion of its securitization exposures.

SCHEDULE 1

[*s. 14(2)*]

Supervisory slotting criteria for specialized lending

[This Schedule is temporarily vacant]

Explanatory Note

[IRB only]

Part 5

Internal Ratings-Based Approach to Calculation of Credit Risk

Division 1 - Application

1. *Section 10* specifies that *Part 5* applies to authorized institutions which use the internal ratings-based approach ("IRB") to calculate their credit risk for non-securitization exposures. (See the definition of "non-securitization exposure" in *section 2(1)*).

Division 2 - Calculation of credit risk, assets and exposures to be covered in calculation and classification of assets and exposures

2. *Section 11(1)* specifies how an authorized institution shall calculate the risk-weighted amount of the institution's exposure to credit risk using the IRB. *Section 11(2)* permits, for the purposes of that calculation, an authorized institution to reduce the risk-weighted amount of a credit exposure by taking into account the effect of any credit protection provided for the exposure. *Section 12* specifies the credit exposures which an authorized institution is required to take into account and risk-weight. *Section 13* requires an authorized institution to, first,

classify all of those credit exposures into one only of the 6 IRB classes of exposures specified in *Table 2* in that section and then, second, further classify the credit exposures into one only of the 25 IRB subclasses of exposures specified in that table. This classification, however, is subject to the requirements of *sections 14* to *17*.

3. *Section 14(1)* specifies how an authorized institution shall classify its corporate exposures (see the definition of "corporate exposure" in *section 2(1)*) into the 6 IRB subclasses available for corporate exposures. The supervisory slotting approach to corporate exposures consisting of specialized lending should, in particular, be noted. (See the definitions of "specialized lending" and "supervisory slotting criteria approach" in *section 2(1)*). *Section 15* specifies how an authorized institution shall classify its retail exposures into the 5 IRB subclasses available for retail exposures. *Section 16* specifies, inter alia, how an authorized institution shall determine whether an exposure of the institution should be classified as an equity exposure, and empowers the MA to require an authorized institution to treat certain debt holdings of the institution as equity exposures. *Section 17* requires an authorized institution to classify as the IRB class other exposures all of its on-balance sheet assets and off-balance sheet exposures that have not been classified into any other IRB class.

Division 3 - IRB calculation approaches

4. *Section 18* requires an authorized institution to select, for the purposes of calculating the risk-weighted amount of its on-balance sheet assets and off-balance sheet exposures, from amongst the IRB calculation approaches set out in *Table 3* [in that section] applicable to the 6 IRB classes. It should be noted that -

   (a) for corporate exposures of an authorized institution, the institution may select the FIRB, the AIRB or the supervisory slotting criteria approach (see the definitions of "FIRB", "AIRB" and "supervisory slotting criteria approach" in *section 2(1)*);

   (b) for sovereign or bank exposures of an authorized institution, the institution may select the FIRB or the AIRB;

   (c) for retail exposures of an authorized institution, the institution has no choice amongst IRB calculation approaches because all the provisions of *Division 8* of *Part 5* apply to its retail exposures;

   (d) for equity exposures of an authorized institution, the institution may select the market-based approach (with a further selection within that approach of the simple risk-weight method or the internal models method) or the PD/LGD approach (see the definitions of "internal models method", "loss given default", "LGD", "probability of default", "PD" and "PD/LGD approach" in *section 2(1)*); and

(e) for other exposures of an authorized institution, the institution has, again, no choice, because all the provisions of *Division 10* of *Part 5* apply to its other exposures.

Division 4 - Risk-weighting framework under IRB

5. *Section 19* imposes requirements on an authorized institution relating to its making estimates, in its implementation of the IRB, of the probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD") in respect of its exposures. (See the definitions of "probability of default", "loss given default" and "exposure at default" in *section 2(1)*). *Section 20* specifies what constitutes, for the purposes of *Part 5*, a default with respect to the obligor under an exposure of an authorized institution.

Division 5 - Specific requirements for corporate, sovereign and bank exposures

6. *Sections 21* to *26* set out the requirements applicable to and in relation to an authorized institution's rating system in so far as the rating system relates to the institution's corporate, sovereign and bank exposures (see the definition of "rating system" in *section 2(1)*). *Section 27* specifies how an authorized institution shall calculate the risk-weighted amount of the institution's corporate, sovereign and bank exposures depending upon whether it uses the FIRB, the AIRB or the supervisory slotting criteria approach. *Sections 28* to *41A* contain specific

requirements applicable to that calculation, whether because of the type of exposure concerned, the nature of the estimate to be made, or the approach taken to make that calculation.

[*Divisions 6* and *7* - *Divisions* not used]

Division 8 **- Specific requirement for retail exposures**

7. *Sections 42* to *47* set out the requirements applicable to and in relation to an authorized institution's rating system in so far as the rating system relates to the institution's retail exposures. *Section 48* specifies how an authorized institution shall calculate the risk-weighted amount of the institution's retail exposures. *Sections 49* to *52A* contain specific requirements applicable to the estimates of the PD, LGD and EAD in so far as that calculation is concerned.

Division 9 **- Specific requirement for equity exposures**

8. *Section 53* requires an authorized institution to use the market-based approach or the PD/LGD approach to calculate the risk-weighted amount of the institution's equity exposures. Under the market-based approach, an authorized institution may use the simple risk-weight method (*sections 54(1)(a)* and *55*), the internal models method (*sections 54(1)(b)* and *56*) or, subject to *section 54(3)*, a combination of the simple risk-weight method and the internal models method

(*section 54(1)(c)*). *Sections 57* to *62* set out the requirements, under the PD/LGD approach, applicable to and in relation to an authorized institution's rating system in so far as the rating system relates to the institution's equity exposures. *Section 63* specifies how an authorized institution shall calculate the risk-weighted amount of the institution's equity exposures under the PD/LGD approach.

Division 10 - Specific requirements for other exposures

9. *Section 65* requires an authorized institution to calculate the risk-weighted amount of its cash items falling within the IRB class of other exposures by multiplying the EAD of each item by the relevant risk-weight set out in *Table 7* under that section (see the definition of "cash item" in *section 2(1)*). *Section 66* requires an authorized institution to allocate a risk-weight of 100% to the assets and exposures specified in *section 66(1)* unless the MA requires a higher risk-weight to be allocated.

Division 11 - Special requirements for certain portfolios of exposures

10. *Division 11* contains requirements applicable to the calculation of the risk-weighted amount for purchased receivables (*sections 67* to *71*), leasing arrangements (*section 72*) and repo-style transactions (*section 73*).

Division 12 - Credit risk mitigation

11. *Section 74* permits an authorized institution to take into account the effect of recognized credit risk mitigation in calculating its risk-weighted assets and exposures (including recognized collateral, recognized netting, recognized guarantees and recognized credit derivative contracts). *Sections 74A* to *79* specify what constitutes recognized collateral. *Section 80* specifies what constitutes recognized netting. *Sections 81* to *91* specify what constitutes recognized guarantees and recognized credit derivative contracts, and specifies 2 methodologies - the substitution approach or the double default framework - which may be used to take into account the credit risk mitigating effect of a recognized guarantee or credit derivative contract in calculating the risk-weighted amount of an exposure of the institution the subject of that guarantee or contract. (See the definitions of "substitution approach" and "double default framework" in *section 2(1)*).

Division 12A - Treatment of expected loses and eligible provisions

12. *Section 94(1)* specifies the capital treatment an authorized institution shall accord the difference between the total expected loses amount and the total eligible provisions amount calculated under *section 95*. If the total expected loses amount exceeds the total eligible provisions, then the institution is required to deduct the difference from its capital base. In the opposite case, the institution may include the difference in its supplementary capital up to a maximum of 0.6% of the institutions credit risk-weighted amount determined under *Part 5*. *Section 95* makes it clear that, in the case of an authorized institution which also uses the STC or BSA in addition to the IRB, eligible provisions that are attributable to that portion of its exposures subject to the STC or BSA (or both) shall be excluded from the calculation of its total eligible provisions under *section [..]*. *Sections 96* and *97* specify what shall be the expected loss for its equity exposures subject to the market-based approach or the PD/LGD approach respectively.

Division 12B - Scaling factor

12A. *Section 98A* requires an authorized institution to multiply the risk-weighted amount of its credit exposures subject to *Part 5* and *Part 7* by a scaling factor to arrive at the institution's credit risk-weighted amount under the use of the IRB and IRBS.

Division 13 - Capital floor

13. *Section 98* requires an authorized institution to have a capital floor for 3 years, although the MA may extend that period, or reimpose the capital floor, if the MA is satisfied that it is necessary to do so in order to mitigate the effect of the institution's failure to comply with the Rules. *Section 99* specifies how an authorized institution shall calculate the capital floor.