HONG KONG MONETARY AUTHORITY
香港金融管理局

Our Ref.: B1/15C
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31 December 2014

The Chief Executive
All Authorized Institutions

Dear Sir / Madam,

Implementation guidance on Banking (Capital) Rules and Banking (Disclosure) Rules

Following the implementation of Basel II in 2007, the HKMA has issued guidance in the form of questions and answers ("Q&As") on a number of areas in the Banking (Capital) Rules ("BCR"). Such Q&As were included:

(a) with a circular letter of 25 May 2007 on "Implementation guidance on Banking (Capital) Rules" covering[1]:

   (i) the calculation of credit risk for non-securitization exposures under the IRB approach;
   (ii) the calculation of credit risk for securitization exposures;
   (iii) the calculation of market risk; and

(b) with a circular letter of 4 September 2013 on "Basel III implementation – Frequently Asked Questions ("FAQs")", covering the counterparty credit risk framework[2].

The recent assessment by the Basel Committee of Hong Kong's compliance with the Basel 2/2.5/3 standards under the Committee's Regulatory Consistency Assessment Programme has observed that additional supervisory guidance, including in the form of Q&As, might be beneficial in securing consistent implementation of certain requirements under the BCR and the Banking (Disclosure) Rules ("BDR"). Furthermore, some existing Q&As require some updating to reflect the passage of time and the implementation of revised or new Basel capital standards. I therefore enclose revised Q&As relating to the BCR as well as the BDR covering:

- revisions or updates to the Q&As on capital calculation approaches mentioned under item (a) above (please refer to **Annex 1**). The major changes relate to –

[1] See http://www.hkma.gov.hk/eng/key-information/guidelines-and-circulars/circulars/2007/20070525-1.shtml
[2] See http://www.hkma.gov.hk/eng/key-functions/banking-stability/basel-3.shtml

- the IRB capital floor requirements, reflecting the amendments set out in the HKMA's circular letter of 20 December 2013;

- the treatment of default within a connected group, to elaborate on the application of relevant provisions under the IRB approach;

- the IRB top-down approach to calculate the risk-weighted amount for default risk of purchased receivables, to provide further guidance on the use of this approach; and

- the factors for considering whether a foreign exchange position of an authorized institution would qualify as a "structural position" for the purposes of market risk calculation.

- a new Q&A to be included into those mentioned in item (b) above to provide guidance on the calculation of the delta-adjusted notional amount of an eligible instrument for hedging CVA risk (i.e. in the form of an option on a credit default swap) as requested by the industry during the consultation on the Banking (Capital) (Amendment) Rules 2013 (please refer to **Annex 2**).

- some new Q&As in respect of (i) the calculation of credit risk for non-securitization exposures under the Standardised Approach and (ii) the general disclosures for credit risk to facilitate the consistent understanding of certain provisions of the BCR and the BDR (please refer to **Annex 2**).

The Q&As have been drafted, as far as possible, in simple non-legal language to facilitate consistent interpretation and application of the capital or disclosure requirements. They are however explanatory and supplementary in nature and do not seek to replace (and should not be read as replacing) any requirements in the BCR or the BDR. Also, the Q&As are inevitably general in scope and do not take into account the particular circumstances of individual authorized institutions. As such, the reading of the Q&As is no substitute for the reading of the BCR and the BDR themselves or for obtaining, where necessary, legal and other professional advice on particular aspects of the BCR and the BDR.

We intend to amalgamate the enclosed Q&As with those on the HKMA public website in order to provide access through a single document link.

Yours faithfully,

Karen Kemp
Executive Director (Banking Policy)

Encl.

c.c. The Chairman, The Hong Kong Association of Banks
The Chairman, The DTC Association
FSTB (Attn: Mr Jackie Liu)

Questions and Answers on
Banking (Capital) Rules

Contents

MARKET RISK December 2014

Note: The Contents listed above should be read in conjunction with the Introduction, which describes the scope and purpose of these Questions and Answers and explains how they can be used in general. If reading on-line, please click on the blue underlined headings to activate hyperlinks to the relevant subjects.

INTRODUCTION

1. These questions and answers ("Q&As") relate to the Banking (Capital) Rules ("the Rules"), which came into effect on 1 January 2007. The Rules were made by the Monetary Authority under section 97C of the Banking Ordinance (Cap. 155) as amended by the Banking (Amendment) Ordinance 2012 (L.N. 158 of 2012) for the purpose of implementing revised capital adequacy requirements based on the Basel II framework promulgated by the Basel Committee on Banking Supervision ("the BCBS"). The Rules are subsidiary legislation and have been subject to negative vetting by the Legislative Council.

2. These Q&As are designed to assist authorized institutions in understanding the approach being taken by the Monetary Authority to the implementation of certain sections of the Rules. They are not intended to provide a comprehensive summary of the Rules (or of the aspects of the Rules to which they refer). The answers given are general in their scope and do not take into account the particular circumstances of any individual authorized institution. Certain sections of the Rules contain exceptions or qualifications which, although not covered in these Q&As, may still apply to particular authorized institutions. In the case of any discrepancy between these Q&As and the Rules, the Rules prevail. As such, reading these Q&As is no substitute for reading the Rules themselves.

3. These Q&As should not be regarded as, or be considered a substitute for obtaining, legal advice. Indeed, the explanations contained in the answers employ simple, non-legal language so as to make them as user-friendly as possible. Authorized institutions should consider obtaining legal and other professional advice before taking any action on any of the matters covered by the Q&As, particularly if they have any doubt as to how any aspect of the Rules might apply to them.

4. The matters covered by these Q&As include information and issues arising during the consultation and rule-making processes undertaken in respect of the Rules; the Monetary Authority's responses to some common enquiries raised by authorized institutions; ongoing developments in respect of the Basel capital framework (e.g. Basel II / 2.5 / III); and relevant explanatory guidance provided by the BCBS relating to the framework. The Monetary Authority will keep under review the practical implementation of the Rules by authorized institutions and changes to the Basel capital standards as promulgated by the BCBS from time to time, and will revise these Q&As as appropriate in the circumstances.

5. Q&As that have been rendered irrelevant (in whole or in part) by the passage of time or by intervening changes in the Basel capital framework or the

HKMA's regulatory policies are still retained in this document for reference or record purposes, but with a marker indicating that they are no longer relevant.

6. These Q&As are organised by subject as set out in the Contents section. If reading on-line, please click on the blue underlined headings to activate hyperlinks to the relevant subjects.

7. Unless stated to the contrary (or as otherwise made clear by the context), the terms and acronyms used in the Q&As have the same meaning as in the Rules, and the parts, divisions, sections, schedules, tables or formulae referred to are references to those in the Rules.

IRB APPROACH

1. This part contains a set of Q&As relating to specific requirements set out in Part 2 and Part 6 of, and Schedule 2 to, the Rules in relation to the IRB approach.

2. These Q&As cover subjects in which authorized institutions[1] implementing the IRB approach have demonstrated a keen interest. Please read this part in conjunction with the Contents, where a list of subjects covered under this part is shown, and the Introduction, which describes the scope and purpose of these Q&As and explains how they can be used in general.

3. If reading on-line, please click on the blue underlined headings to activate hyperlinks to the relevant subjects.

Subject :	**Capital floor**
Section :	**225 and 226**

Background: *Section 225(1) specifies that an authorized institution will be subject to a capital floor for the first 3 years of using the IRB approach to calculate its credit risk. Pursuant to section 225(4A) and (6)[2], the HKMA issued the circular "Internal Ratings-based Approach: Revised Capital Floor Requirements" ("Capital Floor Circular") on 20 December 2013 to implement the BCBS decision to extend the capital floor beyond end-2009 as announced in the BCBS press release of 13 July 2009. As a result, authorized institutions are, and will continue to be, subject to the capital floor beyond the third year of their adoption of the IRB approach. Also, the Monetary Authority may under section 225(5)(c), based on prudential grounds set out in section 225(2), (3) or (4), require the authorized institution concerned to use a different adjustment factor (i.e. different from that applicable to it under section 226 but not exceeding 100%) to calculate the capital floor.*

The amount of an authorized institution's capital floor is derived by applying an adjustment factor specified in Table 23 in section 226(6) (subject to the amendments stated in page 3 of the Capital Floor Circular) to an amount calculated in accordance with –

[1] Unless the context otherwise requires, a reference to an authorized institution in this part is a reference to an authorized institution that uses the IRB approach to calculate its credit risk for non-securitization exposures.

[2] These provisions empower the Monetary Authority, if satisfied that the prevailing capital standards issued by the BCBS require a capital floor to continue to be applied to entities using the IRB approach after the third year of their adopting this approach, to require authorized institutions to extend or re-apply the capital floor, or revise the method of calculating capital floor (including the adjustment factor) set out in section 226 applicable to those institutions.

(a) (if the institution starts to use the IRB approach during the transitional period[3]) section 226(3) or (3A); or
(b) (if the institution starts to use the IRB approach after the transitional period) section 226(5).

An authorized institution is required under section 226(1) to compare the amount of its capital floor to the amount of its actual capital calculated under section 226(7) and, if the former is larger than the latter, multiply the difference by 12.5 and add the resulting figure to its total risk-weighted amount for the calculation of its capital adequacy ratio.

Q.1 Why should there be a capital floor to restrict the level of capital savings an authorized institution may potentially derive from using the IRB approach?

A.1 An authorized institution's use of the IRB approach is subject to the application of a capital floor because it is a prudential measure laid down by the BCBS in the Basel II framework. The measure was originally aimed at preventing a sudden fall in banks' regulatory capital requirements immediately upon the use of the IRB approach and providing time for supervisors to ensure that individual banks have implemented the IRB approach in a sound and prudent manner. In the light of lessons drawn from the global financial crisis of 2007/2008, the BCBS announced in a press release in July 2009 that it "agreed to keep in place the Basel I capital floors beyond the end of 2009". The imposition of a continuing capital floor reflects the ongoing need to mitigate model risk and measurement error stemming from the use of internally-modelled approaches. To further enhance the capital floor framework, the BCBS is currently working on a permanent capital floor (based on the revised standardized approaches for credit, market and operational risk currently under consultation) to replace the existing floor. The HKMA's application of a capital floor on an ongoing basis is consistent with the approach being taken by other supervisors.

Q.2 [*This question is no longer relevant after issuance of the Capital Floor Circular*] **Is the capital floor applicable only to authorized institutions which start to use the IRB approach during the transitional period (i.e. the period from 1 January 2007 to 31 December 2009)?**

A.2 No. To ensure a level-playing field, every authorized institution which starts to use the IRB approach, whether during or after the transitional period, will be subject to a capital floor during the first 3 years it uses that approach. In other words, an authorized institution cannot avoid the capital floor requirement or shorten the period it is subject to the capital floor, by deferring its timetable for implementing the IRB approach.

[3] The transitional period was from 2007 to 2009.

Q.3 [*This question is no longer relevant after issuance of the Capital Floor Circular*] **Will an authorized institution be subject to the capital floor again when it migrates from the foundation IRB approach to the advanced IRB approach to calculate its credit risk for corporate, sovereign and bank exposures?**

A.3 As a general principle, an authorized institution which migrates from the foundation IRB approach to the advanced IRB approach will not be subject to the capital floor again if it has already been subject to the capital floor for a period of 3 years since its adoption of the foundation IRB approach. However, an authorized institution which migrates to the advanced IRB approach within the first 3 years of using the foundation IRB approach will still be subject to the capital floor until the end of the third year. For example, an authorized institution moving to the advanced IRB approach after using the foundation IRB approach for 2 years should continue to apply the capital floor in the third year.

Q.4 [*This question is superseded by Q.4A below*] **Where IRB implementation issues have emerged during the 3-year period in which an authorized institution has applied the capital floor, what measures would possibly be taken by the Monetary Authority in respect of the institution to address those issues?**

A.4 If the issues identified reflect an authorized institution's failure to fully comply with the requirements under Part 6 applicable to the use of the IRB approach, the Monetary Authority will consider taking appropriate measures to address those issues based on the circumstances of each case. Such measures may include extending the capital floor requirement beyond the 3-year period under section 225(2) if this will mitigate the effect of that failure.

Q.4A If an authorized institution falls within the circumstances described in section 225(2), (3) or (4), what measures might be taken by the Monetary Authority?

A.4A The Monetary Authority will most likely consider requiring the authorized institution concerned to apply a higher adjustment factor (i.e. higher than that applicable to the institution under section 226 but not exceeding 100%) in the calculation of its capital floor. (Following the issuance of the Capital Floor Circular, the exercise of power under section 225(5)(a) or (b) to extend or re-apply the capital floor period is no longer relevant.) Depending on the circumstances of each case, other supervisory measures may also be taken by the Monetary Authority as appropriate to address the particular concerns identified.

Q.5 [*This question is no longer relevant as the transitional period has ended*] **Under the Basel II framework, the calculation of the capital floor for the years from 2007 to 2009 is based on application of the 1988 Accord. However, section 226(3) requires that the BSC approach (instead of the 1988 Accord) be used to calculate the capital floor during the transitional period. What is**

the reason for this difference in treatment?

A.5 The BSC approach is essentially a modification of the OECD-based risk-weighting framework under the 1988 Accord (or the Third Schedule to the Banking Ordinance which was repealed when the Rules took effect on 1 January 2007). This approach is intended: (a) for smaller authorized institutions with relatively simple and straight-forward operations; and (b) as an interim approach for authorized institutions planning to use the IRB approach within the transitional period.

Given that the BSC approach does not differ significantly from the 1988 Accord, it would be more practical for authorized institutions which have implemented the IRB approach, especially for those falling within item (b) above, to use the BSC approach rather than reverting to the 1988 Accord to calculate the capital floor.

Q.6 Under what circumstances would the Monetary Authority give an authorized institution which starts to use the IRB approach during the transitional period his prior consent under section 226(3)(a)(i) or (3A)(a)(i), as the case may be, to use the STC approach (instead of the BSC approach) to calculate the capital floor?

A.6 Such prior consent will usually only be given under section 226(3)(a)(i) to an authorized institution which has used the STC approach to calculate its credit risk prior to it implementing the IRB approach during the transitional period. Authorized institutions may choose the STC approach as an interim approach if they prefer to adopt a more risk-sensitive approach to calculate their credit risk before migrating to the IRB approach. Such prior consent will similarly be given under section 226(3A)(a)(i) (which mirrors section 226(3)(a)(i)) to an authorized institution (with prior consent under section 226(3)(a)(i)) to continue to use the STC approach for capital floor calculations after the transitional period.

Q.7 Why is the method of calculating the capital floor for authorized institutions which start to use the IRB approach <u>after</u> the transitional period (as set out in section 226(5), (5A) and (6)) different from that for authorized institutions which start to use the IRB approach <u>during</u> the transitional period (as set out in section 226(3), (3A) and (6))?

A.7 The BCBS recognises that calculation of the capital floor based on the 1988 Accord will become increasingly impractical over time, and believes that supervisors should have the flexibility of developing appropriate capital floors for banks based on the approach they were using prior to adopting the IRB approach. In the light of this, from the outset of implementation of Basel II in Hong Kong, the Monetary Authority has required authorized institutions which start to use the IRB approach after the transitional period to apply a revised

method to calculate the capital floor, which (a) replaces the BSC approach with the STC approach as the basis for determining the risk-weighted amount for credit risk under the capital floor; and (b) includes the determination of the risk-weighted amount for operational risk in the calculation. With the implementation of Basel III since 2013, the determination of risk-weighted amount for credit risk under (a) has been expanded to capture new types of risk-weighted amounts introduced (e.g. the CVA risk-weighted amount). To account for the impact of changes arising from (b), lower adjustment factors (see Table 23 in section 226(6)) were originally prescribed for authorized institutions subject to the revised method. However, with the issuance of the Capital Floor Circular, the adjustment factors applicable to those institutions are no longer lower than those under the Basel requirement (see also A.8 below).

Q.8 If one authorized institution started to use the IRB approach on 1 January 2008 and another authorized institution started to use the IRB approach on 1 July 2014, what adjustment factors should they be using in their floor calculations?

A.8 Table 23 in section 226(6), as read with the Capital Floor Circular, provides 2 sets of adjustment factors for the purposes of calculating the capital floor, i.e. –

(a) 95%, 90% and 80% respectively for the first, second and third year onwards of implementing the IRB approach if the date of such implementation is during the transitional period; and

(b) 90% and 80% respectively for the first and second year onwards of implementing the IRB approach if the date of such implementation is after the transitional period.

An authorized institution which started to use the IRB approach on 1 January 2008 (i.e. during the transitional period) should use the first set of adjustment factors (i.e. 95%, 90% and 80%) to calculate its capital floor. Such calculation, in accordance with section 226(3) or (3A), as the case may be, does not require the inclusion of the institution's risk-weighted amount for operational risk. As the transitional period ended more than 3 years ago, all such authorized institutions should now be using an adjustment factor of 80% for floor calculation.

An authorized institution which started to use the IRB approach on 1 July 2014 (i.e. after the transitional period) should be subject to the second set of adjustment factors in its calculation of capital floor (i.e. 90% from July 2014 to June 2015 and 80% from July 2015 onwards). Although this set of adjustment factors is lower than the first in respect of the first 2 years of implementation, the institution is required, under section 226(5), to include new types of risk-weighted amounts introduced from and after Basel II in the calculation. See also A.7 above.

In determining which set of adjustment factors should be used, therefore, the key consideration is when the institution starts to use the IRB approach, i.e. during or after the transitional period.

Q.9 Is there any flexibility for the Monetary Authority to relax the capital floor requirement, for example by shortening the application period for an authorized institution or lowering the adjustment factors to be used by the institution in calculating its capital floor?

A.9 No. The Monetary Authority has no discretion to reduce the application period of the capital floor requirement, or to lower the adjustment factors applicable to an authorized institution in its floor calculation, under the Rules as read with the Capital Floor Circular. On the contrary, the Monetary Authority has the discretion under section 225(2), (3) and (4) to tighten the way in which the capital floor requirement is calculated by an authorized institution (e.g. by increasing the adjustment factor applicable to the institution) under specified circumstances (see also A.4A above).

Subject :	**Classification of exposures**
Section :	**142 – 146**

Background: *An authorized institution using the IRB approach to calculate its credit risk for non-securitization exposures is required under section 142 to classify, in accordance with sections 143 to 146, each of its exposures which fall within section 141 into one of the 6 IRB classes (viz. corporate, sovereign, bank, retail, equity and other exposures), and then into one of the 25 IRB subclasses, as specified in Table 16.*

Corporate exposures – specialized lending

Q.1 Under which IRB subclass should an authorized institution classify its specialized lending if the institution is able to estimate the credit risk components of such specialized lending for the purpose of using the foundation IRB approach or the advanced IRB approach?

A.1 In this situation, an authorized institution should classify its specialized lending under either the IRB subclass of *small-and-medium sized corporates*, if the criteria in section 143(3) are met, or the IRB subclass of *other corporates*, if the criteria in section 143(5) are met. The other 4 IRB subclasses in the IRB class of corporate exposures, being the IRB sub-classes of *specialized lending under supervisory slotting criteria approach (project finance / object finance / commodities finance / income-producing real estate)*, can only be used if the institution applies the supervisory slotting criteria approach to the institution's specialized lending by reason of its inability to provide its own estimates of the credit risk components of such lending for the purpose of using either the foundation IRB approach or the advanced IRB approach.

Q.2 What types of transactions are generally regarded as project finance?

A.2 Project finance refers to a form of lending in which the lender looks primarily to the revenue generated by a single project funded by the lending, both as the source of repayment of, and as collateral for, the lending. This type of lending is usually for large, complex and expensive installations that include, for example, power plants, chemical processing plants, mines, transportation infrastructure, and telecommunication infrastructure. Project finance may be used to finance the construction of a new capital installation, or refinance an existing installation, with or without improvements. The borrower in a project finance transaction is usually a special purpose vehicle which is established solely to develop, own and operate the installation. This arrangement ensures that the repayment of the loan depends primarily on the cash flows generated by the installation (e.g. the electricity sold by a power plant or the toll income collected from a tunnel) or the collateral value of the installation. In contrast, if the repayment of the loan depends primarily on the revenue generated by other business activities of, or the value of other assets owned by, a corporate, the loan should be treated as a collateralized corporate exposure rather than as specialized lending.

Q.3 What types of transactions are generally regarded as object finance?

A.3 Object finance refers to a form of lending in which the lender finances a borrower to enable the borrower to acquire physical assets (e.g. satellites, ships, aircraft, buses and taxis) and the repayment of the loan is dependent on the cash flows generated by the assets that have been financed and pledged or assigned to the lender. The primary source of these cash flows may be rental or lease contracts which the borrower has entered into with third parties. In contrast, if the borrower can repay the loan without undue reliance on the cash flows generated by the assets acquired, the loan should be treated as a collateralized corporate exposure rather than as specialized lending.

Q.4 What types of transactions are generally regarded as commodities finance?

A.4 Commodities finance refers to a form of structured short-term lending to finance reserves, inventories or receivables of exchange-traded commodities (e.g. precious metals, base metals, crude oil and agricultural products) where the loan will be repaid from the proceeds of the sale of the commodities and the borrower has no independent capacity to repay the loan. This would be the case when the borrower has no other business activities and no other material assets on its balance sheet. The structured nature of commodities finance (e.g. through the use of self-liquidating provisions) aims to compensate for the weak credit quality of the borrower. In contrast, if a loan is granted to finance reserves, inventories or receivables of exchange-traded commodities of a borrower which has well-diversified business activities, the loan should be treated as a collateralized corporate exposure rather than as specialized lending.

Q.5 What types of transactions are generally regarded as income-producing real estate?

A.5 Income-producing real estate refers to a form of lending to finance the acquisition of real estate (e.g. office buildings, retail shops, residential buildings, industrial or warehouse premises, and hotels) where the prospects of both repayment of the loan and recovery of the loan amount in the event of default, depend primarily on the cash flows generated by the real estate acquired. The primary source of these cash flows will generally be lease or rental payments or the sale proceeds of the real estate. The characteristic distinguishing income-producing real estate from other corporate exposures that are collateralized by real estate, is the strong positive correlation between the prospects for repayment of the loan and the prospects for recovery of the loan amount in the event of default. Both depend primarily on the cash flows generated by the real estate.

Q.6 If an authorized institution finances a corporate, say, to construct a tunnel primarily based on a guarantee given by a credit protection provider (e.g. the holding company of the borrower) rather than the toll income to be generated from that tunnel, under which IRB subclass should the institution classify such lending?

A.6 Such type of lending does not fall within the definition of specialized lending because the institution's decision to grant the loan is based primarily on –

(a) the guarantor's obligation and capacity to repay the loan in the event of the borrower defaulting; or

(b) the guarantor's capacity to inject funds into the borrower to avoid the occurrence of any event which will trigger the institution filing a claim under the guarantee.

This would be the case when the institution is unable to form a view as to whether the project to be financed can generate sufficient income to repay the loan as expected. As such, the institution should not in these cases regard the income generated by the project as the primary source of repayment. Generally, an authorized institution should classify such lending under the IRB subclass of *other corporates* and apply the substitution framework set out in sections 215, 216 and 217 to take into account the credit risk mitigating effect of the recognized guarantee.

Corporate exposures – small-and-medium sized corporates

Q.7 Is an authorized institution required to classify its corporate exposures under the IRB subclass of *small-and-medium sized corporates* if such exposures fulfill the conditions specified under section 143(3)?

A.7 This is optional. If an authorized institution chooses not to distinguish its exposures to small-and-medium sized corporates from its corporate exposures generally for the sake of simplicity, the institution can instead classify all of its corporate exposures (except those falling within the IRB subclasses of *specialized lending under supervisory slotting criteria approach*) under the IRB subclass of *other corporates*. Similar flexibility is also available to the institution in respect of its corporate exposures which may be classified under the IRB subclass of *small business retail exposures* by reason of the conditions specified in section 144(1) and (2) being satisfied. In these circumstances, the institution has the option of either classifying such exposures under the IRB subclass of *small business retail exposures*, or classifying such exposures under the IRB subclass of *other corporates*.

Q.8 Is an authorized institution allowed to use a threshold other than that specified in section 143(3) ($500 million) to distinguish small-and-medium sized corporates from its corporate customers?

A.8 Yes. An authorized institution may choose to use any threshold which is **less** than $500 million (e.g. $100 million) if the institution considers that this is more consistent with its risk management practice. It cannot, however, choose a threshold which is more than $500 million.

Q.9 In determining whether an exposure to a corporate can be classified under the IRB subclass of *small-and-medium sized corporates*, must an authorized institution refer to the corporate's total annual revenue figure reported in its audited financial statements?

A.9 In general, authorized institutions are expected to use the latest audited annual financial statements of their corporate borrowers for this purpose. This is, however, not applicable to those borrowers which are not subject to statutory audit (such as sole proprietorships). Authorized institutions should obtain the relevant figures from the latest available management accounts of such borrowers and make any adjustment (e.g. elimination of intra-group transactions) where necessary.

Q.10 Under what circumstances will the Monetary Authority give his prior consent to an authorized institution to substitute a corporate's total assets for total annual revenue in determining whether the institution's exposure to that corporate falls within the IRB subclass of *small-and-medium sized corporates*?

A.10 The Monetary Authority may only give such consent to an authorized institution if the institution demonstrates to the satisfaction of the Monetary Authority that the annual revenue of a corporate is not a meaningful indicator of that corporate's scale of business. This might be the case if the corporate's annual revenue includes a significant amount generated by an exceptional,

non-recurring transaction, or includes a significant amount of off-shore revenue which has been booked through the corporate for tax planning purposes.

Retail exposures

Q.11 How should an authorized institution classify a loan to an individual (say, a high net worth individual) which is not managed on a pooled or portfolio basis?

A.11 As required under section 144(6), such loans should be treated as corporate exposures because they are not managed on a pooled or portfolio basis and therefore do not qualify as retail exposures under section 144(1).

Q.12 Will the Monetary Authority specify the minimum number of exposures within a pool or portfolio of retail exposures?

A.12 It is not the Monetary Authority's intention to prescribe the minimum number of exposures needed to be included in a pool, in order for the exposures within that pool to be classified as retail exposures.

Q.13 Is there any limit on the size of an exposure which can qualify as a retail exposure?

A.13 Size limits are specified in section 144(2) for the IRB subclass of *small business retail exposures* and section 144(4)(c) for the IRB subclass of *qualifying revolving retail exposures*. There is no size limit, however, for an exposure to qualify for inclusion in the other IRB subclasses for retail exposures.

Q.14 Where a retail borrower has a credit card facility and a revolving personal overdraft facility with an authorized institution, does the institution need to add them together for the purpose of determining whether the aggregate amount of the 2 facilities is within the limit of $1 million as specified in section 144(4)(c) such that both facilities can be classified under the IRB subclass of *qualifying revolving retail exposures*?

A.14 No. In determining whether an exposure falls within the IRB subclass of *qualifying revolving retail exposures*, an authorized institution is only expected to apply the $1 million limit mentioned above on a facility basis, rather than on an obligor basis.

Subject :	**Default of obligor**
Section :	**149**

Background: *Consistent identification of "default" is fundamental to the effective operation of an internal rating system used by an authorized institution. Set out in section 149 are –*

(a) the prescribed default criteria that an authorized institution should use in determining whether a default of the obligor has occurred in respect of an exposure of the institution;
(b) the requirements for applying the prescribed default criteria to a retail exposure or overdraft of an authorized institution; and
(c) other requirements, such as those for using the default criteria set by the relevant banking supervisory authority of an authorized institution's parent bank and for treatment of default of an obligor within a connected group under section 149(5A) to (5D).

Q.1 In what circumstances might an authorized institution consider that an obligor is unlikely to pay in full its credit obligations to the institution as prescribed in section 149(1)(a)?

A.1 The following examples, which are by no means exhaustive, illustrate some of the situations in which an authorized institution may regard an obligor as being unlikely to pay in full its credit obligations to the institution –

(a) the institution makes a charge-off or specific provision in respect of all or any of the obligor's credit obligations;

(b) the institution sells one or more of the obligor's credit obligations at a material loss due to a deterioration in credit quality of the obligor;

(c) the institution consents to a restructuring of one or more of the distressed credit obligations of the obligor in circumstances where this is likely to result in a diminution in the financial value of such obligations by reason of material forgiveness, or postponement, of the payment of principal, interest or (where relevant) fees[4];

(d) the institution has filed for the obligor's bankruptcy or a similar order in respect of one or more of the obligor's credit obligations;

(e) the obligor has sought or has been placed in bankruptcy or is subject to similar proceedings which would lead to the avoidance of or delay in repayment of any credit obligation owed by the obligor to the institution.

[4] Including, in the case of equity holdings assessed under the PD/LGD approach, such distressed restructuring of the equity itself.

Q.2 Where an obligor has a credit obligation which has been past due for more than 90 days, should an authorized institution treat all other credit obligations of the same obligor as being in default?

A.2 In such a case, an authorized institution is required to treat all other credit obligations of the same obligor as being in default if –

(a) pursuant to section 149(1)(a), the institution considers that, by reason of the obligor being past due for more than 90 days in respect of the credit obligation in question, the obligor is unlikely to pay in full all its other credit obligations to the institution (or to any member of the consolidation group of the institution); or

(b) pursuant to section 149(1)(b), the amount in respect of which the obligor is past due for more than 90 days represents a material portion of all of the obligor's outstanding credit obligations to the institution (or to any member of the consolidation group of the institution). This is however subject to certain situations in which the materiality test in section 149(1)(b) will not apply (see A.3 below).

Q.3 How should an authorized institution interpret the meaning of "material portion" set out in section 149(1)(b)?

A.3 The "materiality" threshold in section 149(1)(b) will vary from case to case. As such, an authorized institution should set a "materiality" threshold which is appropriate to its own circumstances. However, the Monetary Authority will usually require an authorized institution to justify why it does not treat all of an obligor's credit obligations to the institution as being in default if the obligor is past due for more than 90 days in respect of 5% or more of its total outstanding credit obligations to the institution (or to any member of the consolidation group of the institution).

It should be noted that an authorized institution does not have to apply the materiality test in section 149(1)(b) in the following situations –

(a) if the institution chooses not to set any "materiality" threshold for the sake of simplicity. In this situation, if the obligor is past due for more than 90 days in respect of a credit obligation it has to the institution, and this leads the institution to consider that the obligor is unlikely to pay in full all its other credit obligations to the institution (or to any member of the consolidation group of the institution), then the institution should treat all credit obligations of that obligor as being in default pursuant to section 149(1)(a) (see A.2 above); or

(b) if the obligor is past due for more than 90 days in respect of a payment relating to a retail exposure. In this situation, pursuant to section

149(2)(a)(i), the institution is only required to treat that particular retail exposure as being in default and does not have to treat its other exposures to the same obligor as being in default. However, under section 149(2)(a)(ii), the institution may alternatively elect to treat all other exposures to the same obligor as being in default in such circumstances. It should be noted that, although the adoption of section 149(2)(a)(ii) is optional for authorized institutions, it is nevertheless a good practice for authorized institutions to set out, in their internal policy, under what circumstances all their exposures to the same obligor, including the retail exposure in question, would be treated as in default in the context of section 149(2)(a)(ii), and apply the policy consistently.

Section 149(2)(a) will not apply if the same obligor is also past due for more than 90 days in respect of any payment owing to the institution in respect of an exposure which is not a retail exposure (re: section 149(2)(b)).

Q.4 Is it possible for an authorized institution to use a set of default criteria (not being those prescribed in section 149(1)) for a particular IRB class or IRB subclass?

A.4 This is only possible for an authorized institution which is owned by a foreign banking group. The Monetary Authority may give his prior consent under section 149(4) to an authorized institution to use the default criteria used by its parent bank if –

(a) the default criteria to be used for a particular IRB class or IRB subclass is set by the relevant banking supervisory authority of the institution's parent bank; and

(b) as required under section 149(5), the institution demonstrates to the satisfaction of the Monetary Authority that the differences between the default criteria referred to in item (a) above and those prescribed in section 149(1) will not materially affect the accuracy of the estimates generated by the institution's rating system.

In practice, the Monetary Authority is unlikely to be satisfied as to item (b) above if an authorized institution uses a different past due trigger (i.e. other than 90 days as specified in section 149(1)(b)) in respect of the institution's exposures, apart from in relation to its retail exposures or exposures to public sector entities. Even in the case of such retail exposures and exposures to public sector entities, however, the Monetary Authority is unlikely to be satisfied as to item (b) above if the past due trigger is more than 180 days.

Q.5 Is an authorized institution required to treat an "automatic" realization of an obligor's collateral in respect of certain facility types (e.g. share margin financing) as an event of default where the realization of collateral is not due to the deterioration in the obligor's creditworthiness but to a fall in the value of the collateral?

A.5 The definition of "default" may not apply in cases where the realization of collateral is not triggered by deterioration in an obligor's creditworthiness but by a fall in the value of the obligor's collateral (say, the shares pledged). In such cases, an authorized institution will not be required to record a default of the obligor if the following 2 characteristics exist –

(a) the facility is granted to finance the obligor's position in a financial instrument which qualifies as recognized financial collateral under the IRB framework; and

(b) the collateral is realized to restore an agreed collateral coverage ratio after a fall in the value of the obligor's collateral, as a standard practice for such type of facility and where such practice has been disclosed to the obligor in writing at the inception of the facility.

Q.6 What is meant by a "connected group" as referred to in section 149(5A), (5B), (5C) and (5D)?

A.6 The term "connected group" in these subsections should reflect the definition used by an authorized institution for the purposes of section 154(d)(ii). Where an authorized institution adopts a "group support" policy in rating assignment in accordance with section 154(c) and (d), the institution is required to determine and define (among other things) what constitutes a "connected group" of its obligors in that context. Please refer to A.4 under the subject "Rating system design and operations" below for further guidance.

Q.7 Why is an authorized institution required to treat its exposures to all individual obligors in a connected group as being in default in the circumstances described in section 149(5A)? Are there exceptions to the rule?

A.7 To the extent that members of a connected group are treated on a group basis by an authorized institution for the purposes of rating assignment pursuant to section 154(c) and (d) and have, as a result, been assigned more favourable ratings (based on the available group support) than if they were rated on a standalone basis, it is prudent and logical that such group members be treated consistently on the same group basis for the purposes of the recognition of default within the group as provided for under section 149(5A). That is, authorized institutions that adopt a group support policy in rating assignment should accept both: (i) the benefit of more favourable ratings being assigned to

members of a connected group on the strength of available group support pursuant to section 154(c) and (d); and (ii) the adverse impact on members' ratings when section 149(5A) becomes applicable. It would amount to cherry-picking if authorized institutions were initially allowed to rate members of a connected group favourably on a group basis when there is no default among the members but, once the group support so recognised actually fails to prevent the default of a group member, were subsequently allowed to revert to rating other group members on a standalone basis. To do so would essentially ignore the interdependencies between the group members that had been recognised and relied upon pre-default.

Recognising however that the form and structure of conglomerates vary widely, the Monetary Authority does not intend to mandate authorized institutions to automatically regard the default of any one member of a connected group as a default of all the group members in all circumstances, and has therefore set out in section 149(5B), (5C) and (5D) the circumstances under which section 149(5A) will not apply.

Q.8 Is the "limited exemption" from section 149(1)(b) under section 149(2)(a) in respect of the default of a retail exposure similarly available in relation to a default by virtue of section 149(5A)?

A.8 Yes. The operation of section 149(5A) is subject to subsection (5B), under which the "limited exemption" under section 149(2)(a) is replicated and made available in the context of default of members of a connected group under section 149(5A).

Subject :	**Estimation of credit risk components**
Section :	**148, 159 – 169, 177 – 182, 194, 195 – 202A and 203 – 219**

Background: *"Credit risk components" means the estimates of PD, LGD, EAD, EL and M which constitute inputs into the IRB risk-weight functions to determine the risk-weighted amount of an exposure. General requirements for the estimation of credit risk components are set out in section 148 while specific requirements for the estimation of such components are set out in sections 159 to 169 in respect of corporate, sovereign and bank exposures, sections 177 to 182 in respect of retail exposures, and section 194 in respect of equity exposures under the PD/LGD approach. Sections 195 to 202A set out the specific requirements for certain portfolios of exposures, whilst sections 203 to 219 prescribe the credit risk mitigation framework (the application of which would affect the use of certain credit risk components, e.g. EAD, PD and LGD).*

Q.1 What data source(s) should an authorized institution use in its estimation of PD and, where relevant, LGD and EAD?

A.1 In general, an authorized institution can use internal data, external data, or both,

for the institution's estimation of PD and, where relevant, LGD and EAD, provided that the data it uses are –

(a) representative of its long run default experience and long run loss experience (i.e. covering at least one economic cycle which captures a reasonable mix of high-default and low-default years) (re: section 148(d)(i));

(b) relevant to current and foreseeable economic or market conditions (re: section 148(d)(ii));

(c) consistent with the prescribed default criteria specified in section 149;

(d) in compliance with the specific requirements set out in –

(i) section 159(1)(d) for the estimation of PD under the foundation IRB approach, the advanced IRB approach or the PD/LGD approach;
(ii) section 161(1)(e) for the estimation of LGD under the advanced IRB approach;
(iii) section 164(4)(f) for the estimation of EAD under the advanced IRB approach;
(iv) section 177(1)(e) and (2) for the estimation of PD under the retail IRB approach;
(v) section 178(1)(g) for the estimation of LGD under the retail IRB approach; and
(vi) section 180(3)(b) for the estimation of EAD under the retail IRB approach.

Q.2 How can an authorized institution deal with the problem of limited default data in estimating the credit risk components of a low-default portfolio ("LDP")?

A.2 An LDP is a portfolio of exposures which, for whatever reason, has a relatively low number of defaults. In practice, the following portfolios may be regarded as LDPs –

(a) portfolios that historically have experienced low numbers of defaults and are generally considered to be low risk (e.g. exposures to sovereigns, banks, insurance companies and highly rated corporates);

(b) portfolios that are relatively small in size either for the banking sector as a whole or at an individual bank level (e.g. project finance and shipping loans);

(c) portfolios for which a bank is a recent market entrant; and

(d) portfolios that have not incurred recent losses but historical experience or other analysis suggests that there is a greater likelihood of losses than is captured in recent data.

Historical incidents, particularly the global financial crisis of 2007/2008 and the subsequent European sovereign debt crisis, illustrate that although an LDP may hitherto have been characterized by its low number of defaults, this does not necessarily mean that it can inevitably also be characterized as low risk. There are a number of data-enhancing techniques and statistical or benchmarking tools an authorized institution may wish to use in order to increase the reliability of the credit risk components relating to exposures falling within an LDP. For further details, see section 10 of the module CA-G-4 "*Validating Risk Rating Systems under the IRB Approaches*" (February 2006) issued by the HKMA under the Supervisory Policy Manual, and the explanatory guidance entitled "*Validation of low-default portfolios in the Basel II Framework*" issued by the BCBS in its Newsletter No. 6 (September 2005).

Q.3 How can an authorized institution ensure that the LGD estimate of each of its facility types (in the case of section 161(1)(a)), or the LGD estimate of each pool of its retail exposures (in the case of section 178(1)(a)) reflects economic downturn conditions?

A.3 The Monetary Authority expects every authorized institution using the IRB approach to adhere to the principles set out in the explanatory guidance entitled "*Guidance on Paragraph 468 of the Framework Document*" (July 2005) issued by the BCBS in the process of identifying economic downturn conditions for incorporation into their LGD estimates where appropriate. These principles, as they relate to authorized institutions, include the following –

(a) an authorized institution must have a rigorous and well-documented process for assessing the effects, if any, of economic downturn conditions on recovery rates* and for producing LGD estimates consistent with these conditions. The process must consist of the following integrated components –

(i) the identification of appropriate downturn conditions in each jurisdiction to which the institution's recovery rates in respect of exposures within a particular IRB class are sensitive;
(ii) the identification of adverse dependencies, if any, between default rates and recovery rates; and
(iii) the incorporation of adverse dependencies, if identified, between default rates and recovery rates so as to produce LGD parameters for the institution's exposures consistent with identified downturn conditions; and

(b) for the estimation of LGD, measures of recovery rates should reflect the

cost of holding defaulted exposures over the workout period, including an appropriate risk premium.

** Recovery rate means, for a defaulted exposure, the present discounted value at the default date of recoveries received net of material direct and indirect costs associated with collecting on the exposure, divided by the EAD of the exposure.*

Q.4 Generally, the estimation of PD, LGD and EAD requires the data source, among other things, to cover at least one economic cycle (see A.1 above). What does an "economic cycle" mean?

A.4 There is no universally accepted definition of the term "economic cycle". However, an "economic cycle" typically consists of a sequence of 4 distinct phases as described below –

(a) economic downturn (or economic contraction) which depicts a trend of slowdown in the level of economic activity in terms of real GDP and other macroeconomic variables;

(b) economic trough which describes the bottom of an economic cycle where an economic downturn turns into an economic upturn;

(c) economic upturn (or economic expansion) which depicts a trend of acceleration in the level of economic activity in terms of real GDP and other macroeconomic variables; and

(d) economic peak which describes the peak of an economic cycle where an economic upturn turns into an economic downturn.

Q.5 Why is the estimate of the LGD of a retail exposure which falls within the IRB subclass of residential mortgages to individuals or residential mortgages to property-holding shell companies subject to a floor of 10% (initially during the transitional period but subsequently extended to become an ongoing requirement) (see section 178(1)(c))?

A.5 Initially the floor was imposed due to concerns that the data observation period required for the estimate of the LGD of a pool of retail exposures in section 178(1)(g) (i.e. at least 5 years) may not be long enough to cover a full cycle in property prices which could last for many years. It was therefore considered necessary to introduce the floor during the initial implementation of the revised capital adequacy requirements for the sake of prudence. Subsequently, in view of the volatility observed in respect of some mortgage loan portfolios during the global financial crisis of 2007/2008, the BCBS agreed in December 2009 to maintain the transitional LGD floor of 10% for claims secured by residential mortgages as a permanent feature of the Basel capital framework.

Q.6 Are there any special considerations relevant to the use by authorized institutions of the top-down approach to estimate PD and LGD (or, if applicable, EL) for the calculation of the risk-weighted amount for default risk of purchased receivables (as referred to in sections 198 and 200)?

A.6 For the purposes of using the top-down approach to calculate the risk-weighted amount for default risk of purchased receivables, authorized institutions are expected to be, and should ensure that they are, operationally capable of managing various risks associated with the pool of purchased receivables and their advances against those receivables, as described in Basel II paragraphs 493 to 499. The requisite systems, policies and controls are, in many aspects, akin to those applicable to the recognition of financial receivables for credit risk mitigation purposes under the IRB approach set out in section 205(1) *(re: Basel II paragraphs 512 to 520)*, or are reflective of general credit risk management principles set out in the HKMA's supervisory guidelines. The overarching objective is to ensure that authorized institutions' use of the top-down approach is supported by prudent risk management of the purchased receivables designed to safeguard their claims on those receivables from potential loss.

Key elements of systems, policies and controls relevant to the risk management of purchased receivables are:

(a) *Legal certainty:* to ensure that, through the proper structuring of the contractual terms of the relevant facility and through the verification of payments where applicable, there is effective ownership and control of the purchased receivables and the associated cash receipts or remittances, including in cases where the seller or servicer of the receivables is in financial distress or bankruptcy *(re: Basel II paragraph 494)*;

(b) *Effective monitoring and work-out systems:* including measures to ensure the effective monitoring of both the quality of the purchased receivables and the financial condition of the relevant sellers and servicers. These would cover: (i) assessment of correlation between these two factors and safeguards against related contingencies; (ii) assessment of eligibility of the sellers and servicers and their credit risk management and collection systems; (iii) assessment and monitoring of the risk characteristics (including concentration risk) of the receivables; (iv) monitoring compliance with established policies, procedures and limits in respect of exposures to receivables; (v) monitoring and handling of problem credits; and (vi) related management reporting and documentation requirements *(re: Basel II paragraphs 495-496)*;

(c) *Effective controls over purchased receivables, credit availability and cash:* including having clear and effective policies and procedures to govern key aspects of the receivables purchase programme ("RPP"), including collateral requirements and controls, advancement of funds and receipt of

cash (*re: Basel II paragraph 497)*; and

(d) *Compliance with internal policies and procedures:* including an effective internal process to assess compliance with critical policies and procedures through: (i) regular internal and/or external audits of all critical phases of the RPP; (ii) verification of separation of duties between business and risk management functions; and (iii) adequacy of back-office operations *(re: Basel II paragraphs 498-499)*.

Q.7 Under what circumstances would the Monetary Authority consider it not practicable for an authorized institution to conduct periodic inspection of physical collateral as required under section 207(j)?

A.7 An authorized institution that has not conducted periodic inspection of physical collateral on practicality grounds under section 207(j) should, if requested by the HKMA, be able to explain, and substantiate with objective and reliable evidence, why it has not been possible or feasible for the institution to conduct a physical inspection. The institution's justification will be assessed on a case-by-case basis, taking into account the circumstances of the institution at the material time. Physical inspection might, for example, be hindered by events such as -

(a) the institution concerned was subject to some form of severe bank-wide distress or crisis, rendering it imprudent to divert resources to some routine operations, such as scheduled inspections of physical collateral;

(b) the physical collateral to be inspected was contaminated (e.g. by chemical spills), rendering it hazardous for staff of the institution to conduct the inspection;

(c) the physical collateral to be inspected was located in an area where there was a severe natural disaster (e.g. earthquake).

The above examples are provided for illustrative purposes only and it should be noted that strong justifications will be required to support claims of impracticability of inspection. The HKMA would not concur that it was not practicable for an authorized institution to conduct periodic inspection of physical collateral as required under section 207(j) if the institution clearly had the ability, and was in a position, to do so without incurring significant cost or effort. Therefore, a general principle is that if a "hindering" event is outside the control or influence of the institution concerned, the HKMA would be more inclined to accept it as an acceptable justification for the purposes of section 207(j).

Subject :	**IRB calculation approaches**
Section :	**147**

Background: *Under the IRB framework, an authorized institution using the IRB approach to calculate its credit risk for non-securitization exposures is required under section 147 to select IRB calculation approaches from a range of IRB calculation approaches set out in Table 17 available for each of the 6 IRB classes.*

Q.1 [*This question is no longer relevant after the end of 2007*] **Is it possible for an authorized institution to use the advanced IRB approach to calculate its credit risk for corporate, sovereign and bank exposures during 2007?**

A.1 To align with the international timetable for Basel II implementation, the Monetary Authority will only approve authorized institutions to use the advanced IRB approach from 1 January 2008.

Q.2 Is there any expectation that an authorized institution currently using the foundation IRB approach to calculate its credit risk for corporate, sovereign and bank exposures will migrate to the advanced IRB approach over time?

A.2 No. The Monetary Authority does not intend to make it mandatory for an authorized institution to use any particular IRB calculation approach. Each authorized institution should select an approach which is appropriate for its exposures and commensurate with the sophistication of its internal risk management functions. As such, an authorized institution currently using the foundation IRB approach to calculate its credit risk for corporate, sovereign and bank exposures can choose to remain on that approach.

However, if an authorized institution intends to move onto the advanced IRB approach after having implemented the foundation IRB approach for some time, the institution should seek the prior consent of the Monetary Authority, under section 147(3), before doing so. To start with, the institution should discuss and agree its migration plan (including timetable) with the Monetary Authority. The migration can be in phases but should not be prolonged or patchy. In general, the whole migration process is expected to be completed within 3 years. The Monetary Authority will only give his consent to an authorized institution if the institution can demonstrate to his satisfaction that it meets the more stringent qualifying requirements for using the advanced IRB approach.

Q.3 Can an authorized institution currently using the advanced IRB approach to calculate its credit risk for corporate, sovereign and bank exposures switch back to the foundation IRB approach?

A.3 A return to a less sophisticated IRB calculation approach requires the prior consent of the Monetary Authority under section 147(3). This will be permitted

only in exceptional circumstances (e.g. where an authorized institution's business has been downsized to a level which does not justify the institution maintaining a highly sophisticated risk management system).

Q.4 Can an authorized institution choose to use the supervisory slotting criteria approach to calculate the risk-weighted amount of its specialized lending even though the institution is able to estimate the credit risk components of such lending?

A.4 No. According to section 143(2), an authorized institution can only use the supervisory slotting criteria approach to calculate the risk-weighted amount of its specialized lending when the institution is not able to estimate the credit risk components of such lending for the use of the foundation IRB approach or the advanced IRB approach.

Subject :	**IRB use test**
Schedule :	**2 sections 1(b)(v) and (vi) and 2(b)**

Background: *An authorized institution which makes an application to the Monetary Authority under section 8(1) for approval to use the IRB approach is required to demonstrate to the satisfaction of the Monetary Authority that it meets the minimum requirements set out in Schedule 2 relating to the use of the institution's rating system. In particular, under Schedule 2 section 1(b)(v) and (vi)(A), the institution must demonstrate to the satisfaction of the Monetary Authority that its rating system plays an essential role in its ongoing credit approval, risk management and corporate governance functions and, subject to Schedule 2 section 1(b)(vi)(B), its ongoing internal capital adequacy assessment. The institution is further required under Schedule 2 section 2(b) to demonstrate to the satisfaction of the Monetary Authority that it has been using an IRB-compliant rating system, and estimates of credit risk components generated by that rating system, in the above-mentioned functions and, where Schedule 2 section 1(b)(vi)(A) is applicable, in its internal capital adequacy assessment, prior to it using the IRB approach for such period as the Monetary Authority considers reasonable in all the circumstances of the case.*

The above-mentioned requirements are collectively referred to as the "IRB use test" in the Q&As set out below.

Q.1 What is the rationale behind the IRB use test?

A.1 Under the Basel II framework, the IRB use test is based on the concept that supervisors can take additional comfort in the credit risk components generated by a bank's rating system where such components play an essential role in how the bank measures and manages risk in its businesses. If a bank were to use the credit risk components generated by its rating system solely for regulatory capital purposes, this could create an incentive for the bank to minimise its

capital requirements artificially, rather than produce an accurate measurement of those components. Moreover a bank would have less incentive to keep the credit risk components accurate and up-to-date, whereas if those components are employed in the bank's internal decision-making processes, this will automatically create an incentive for the bank to ensure the quality and robustness of the rating system generating such components.

In such circumstances, the Monetary Authority considers that the IRB use test plays a key role in ensuring and promoting the accuracy, robustness and timeliness of the credit risk components generated by an authorized institution's rating system, confirms the institution's confidence in those components and allows the Monetary Authority to place more reliance on the institution's rating system and thus on the adequacy of its regulatory capital.

Q.2 For what period of time will the Monetary Authority expect an authorized institution to have been using its rating system prior to the institution adopting the IRB approach for regulatory capital purposes?

A.2 The Monetary Authority will take into account all relevant circumstances in deciding for what period of time an authorized institution should use its rating system, prior to it adopting the IRB approach. To provide some guidance to authorized institutions in this area, the Monetary Authority's general policy is set out below.

Under the Basel II framework, a bank must have a credible track record of at least 3 years in using its rating system prior to the bank becoming qualified to use the IRB approach. The rating system used should be broadly consistent with the minimum requirements set out in the Basel II framework relating to the use of the IRB approach.

General policy before 31 December 2014

In order to encourage more authorized institutions to transition to the IRB approach over time, the Monetary Authority considered it reasonable to introduce a less stringent threshold for the IRB use test in the early years of Basel II implementation, whereby authorized institutions were generally expected to have used their rating systems for 2 years, prior to their using the IRB approach to calculate their regulatory capital requirements. This transitional 2-year period could be further shortened to 1 year for authorized institutions applying to use the foundation IRB approach during the transitional period.

General policy on and after 31 December 2014

Since the implementation of Basel II in 2007, authorized institutions have had time to build up the requisite systems and data for the purposes of using the IRB approach. As such, the Monetary Authority now considers it reasonable to

adopt the Basel minimum 3-year use test period. Any authorized institution that seeks to use the IRB approach (foundation or advanced) from and after 31 December 2014 is required to have a credible track record of at least 3 years in using its rating system prior to the institution becoming qualified to use the relevant IRB approach.

Q.3 If an authorized institution's rating system has been developed by its parent bank and used at the group level for a certain period of time, will the institution be allowed to observe a shorter use test period than would otherwise be required?

A.3 As indicated in the last paragraph of A.2 above, an authorized institution is now required to satisfy the IRB use test in Hong Kong for a minimum period of 3 years. The transitional IRB use test arrangements implemented previously will no longer be adopted. Hence, even if an authorized institution's rating system developed by its parent bank has been used at the group level for some time, the Monetary Authority would still expect the institution to be able to meet the 3-year use test requirement in Hong Kong.

Q.4 If an authorized institution refines or modifies its rating system during the use test period, does the use test period have to start again from the date of the refinement or modification?

A.4 Generally, refinements or modifications to an authorized institution's rating system will not render the institution non-compliant with the IRB use test. The use test period will usually only have to start again if the refinements or modifications involve a significant change in the design or operation of an authorized institution's rating system that substantially alters the ways the institution uses the internal ratings and default and loss estimates generated by the rating system.

Q.5 Where an authorized institution maintains more than one rating model for the same portfolio of exposures (e.g. one for its regulatory capital calculation and another for benchmarking), how will the Monetary Authority assess the institution's compliance with the IRB use test?

A.5 In assessing whether or not an authorized institution's rating system has satisfied the IRB use test, the Monetary Authority will consider the extent of the institution's use of the rating system as a whole, rather than applying the use test to individual models separately.

Q.6 If an authorized institution intends to start using its rating system for different portfolios (or segments) of exposures on different dates (i.e. implement a phased rollout), on what date does the use test period start?

A.6 The Monetary Authority would consider it reasonable for an authorized

institution to treat the use test period for its rating system as starting on the date the rating system is used for a substantial portion (say, at least 50%) of the exposures in respect of which it intends to adopt the IRB approach.

Q.7 What is the meaning of the term "essential role" in Schedule 2 section 1(b)(v) and (vi)?

A.7 "Essential role" means that the information generated from an authorized institution's rating system should be used in such a way as to exert a direct and observable influence on the institution's internal decision-making processes. Where internal ratings and default and loss estimates generated by the rating system are only used by an authorized institution as auxiliary or reference information, the rating system will not normally be considered as playing an "essential role" for the purposes of Schedule 2 section 1(b)(v) and (vi).

Q.8 What are the specific functions or areas in which an authorized institution is expected to use the internal ratings and default and loss estimates generated by its rating system for internal decision-making purposes (see also A.9 below)?

A.8 Under the Basel II framework, internal ratings and default and loss estimates generated by the rating system of a bank using the IRB approach must play an essential role in the credit approval, risk management, internal capital allocation and corporate governance functions of the bank.

To elaborate on this principle-based requirement, the Monetary Authority has, in section 5.4.2 of the module CA-G-4 "*Validating Risk Rating Systems under the IRB Approaches*" (February 2006) issued under the Supervisory Policy Manual, set out a list of specific areas or functions in which internal ratings and default and loss estimates generated by an authorized institution's rating system are expected to be used. These areas or functions include –

(a) credit approval;

(b) pricing;

(c) setting of limits for individual exposures and portfolios;

(d) credit monitoring (e.g., more frequent rating review for riskier obligors);

(e) analysis and reporting of credit risk information, including that used in the exercise of oversight by the board of directors and senior management;

(f) determining provisioning;

(g) modelling and management of economic capital;

(h) assessment of internal capital adequacy in respect of credit risk;

(i) assessment of risk appetite;

(j) formulating business strategies (e.g. acquisition strategy for new exposures and collection strategy in respect of problem loans);

(k) setting of, and assessment against, profitability and performance targets;

(l) determining performance-related remuneration (e.g. for staff responsible for rating assignment and approval); and

(m) other aspects of risk management (e.g., information technology systems, skills and resources, and organisational structure).

Q.9 Will an authorized institution be required to use its rating system in all the areas or functions specified in A.8 above?

A.9 To satisfy the IRB use test, an authorized institution will generally be required to demonstrate that it has been using the internal ratings and default and loss estimates generated by its rating system for internal decision-making purposes for at least 3 years in the majority of the areas or functions set out in A.8 above, which should include (a) credit approval, (b) credit monitoring, and (c) reporting of credit risk information to the institution's board of directors and senior management.

Q.10 Is an authorized institution required to use exactly the same default and loss estimates generated by its rating system for both its regulatory capital calculation and all internal purposes?

A.10 Compliance with the IRB use test does not necessarily mean that an authorized institution will have to use exactly the same default and loss estimates for both its regulatory capital calculation and all internal purposes. For example, pricing models are likely to use a PD relevant to the life of an asset, instead of using a PD with a 1-year horizon. As such, the BCBS requires that where such differences exist, a bank must document them and demonstrate their reasonableness (e.g. to reflect legitimate risk management needs) to its supervisor.

Based on this guiding principle, an authorized institution is expected to –

(a) justify any differences in, and otherwise demonstrate consistency between, the internal ratings and default and loss estimates used for regulatory capital calculation purposes and those used for the institution's internal decision-making purposes. Such comparison should cover both inputs (including rating criteria and risk factors) to, and outputs (such as ratings

and risk estimates) from, the institution's rating system;

(b) provide qualitative and quantitative analysis of the logic and rationale for the differences; and

(c) have its credit risk control unit review, and its senior management approve, the justifications for the differences.

Q.11 What evidence will the Monetary Authority require from authorized institutions regarding the use of their rating systems?

A.11 Authorized institutions will need to demonstrate to the satisfaction of the Monetary Authority that they satisfy the IRB use test. Whilst the use of internal ratings and default and loss estimates for internal decision-making purposes may vary from institution to institution and by portfolio type, the Monetary Authority will normally expect an authorized institution applying to use, or using, the IRB approach to have the following evidence to demonstrate it satisfies the IRB use test –

(a) the use of internal ratings and default and loss estimates should be articulated in the policies relating to given areas or functions as referred to in A.8 and A.9 above as approved by the institution's board of directors or senior management;

(b) for each area (or function) of use, there should be a clear indication that the information generated by the institution's rating system plays an essential role in its internal decision-making process and that there is a clear relationship between the information generated from the rating system and the decisions made or actions taken (such indication should be able to facilitate the internal audit review as required in item (d) below);

(c) users should be able to articulate how the information generated by the institution's rating system is used, or the role played by the information, in the institution's internal decision-making process; and

(d) regular internal audit reviews should be conducted to verify whether or not the use of the information generated by the institution's rating system complies with the institution's approved policies referred to in item (a) above.

Any documentation of internal challenges to the accuracy, robustness and timeliness of internal ratings and default and loss estimates generated by an authorized institution's rating system during the internal decision-making process, together with any follow-up actions taken, will also be regarded as evidence which demonstrates the institution's commitment to the validity of its rating system for internal use purposes.

Subject :	**Minimum IRB coverage ratio / Exemption for exposures**
Section :	**11, 12 and 13**

Background: *Section 11 requires an authorized institution which uses the IRB approach to have an IRB coverage ratio of not less than 85% (or 75% if the institution adopts a phased rollout under section 14(4)), unless a different IRB coverage ratio is agreed in writing between the institution and the Monetary Authority. Section 12 sets out the grounds on which the Monetary Authority will grant an application made by the institution to exempt certain of its exposures from the IRB calculation whilst section 13 sets out the actions the Monetary Authority may take when the reason for exemption (under section 12) is no longer valid. The purpose of these requirements is to ensure that a significant portion of the institution's risk-weighted amount for credit risk is calculated under the IRB approach and the calculation of its regulatory capital for credit risk is not materially prejudiced by any exemption made under section 12.*

Minimum IRB coverage ratio

Q.1 Why is it mandatory for an authorized institution using the IRB approach to comply with a minimum IRB coverage ratio?

A.1 Under the Basel II framework, a bank which adopts the IRB approach is expected to use the IRB approach across all of its material asset classes and business units and across the entire banking group simultaneously at the time that approach is implemented. This is to prevent banks from adopting the IRB approach when they are not fully ready to do so or from selectively applying a given calculation approach - the STC approach or the IRB approach - to certain exposures with the intention of minimising their capital requirements (i.e. regulatory capital arbitrage).

With the same objectives in mind, the Monetary Authority expects an authorized institution adopting the IRB approach to apply that approach to a critical mass of the institution's exposures and across its entire banking group when the institution starts using that approach for regulatory capital calculation. The Monetary Authority recognises, however, that it may not always be practical or cost-effective for every authorized institution to implement the IRB approach in one go or extend the use of the IRB approach to cover exposure classes or business units that are immaterial in terms of size and perceived risk profile. Based on these considerations, an authorized institution is only required to attain a certain level of IRB coverage as a prerequisite to using the IRB approach to calculate its credit risk. In particular, the institution is required, on both a solo (or solo-consolidated) and consolidated basis, to meet an IRB coverage ratio of not less than 85% (or 75% if the institution adopts a phased rollout under section 14(4)). An authorized institution should also ensure compliance with the minimum IRB coverage ratio applicable to the institution not only at the outset of adopting the IRB approach but on a continuing basis.

Q.2 Is an authorized institution required to take into account the scaling factor of 1.06 in the calculation of the IRB coverage ratio?

A.2 Yes. As defined in section 4, an authorized institution's IRB coverage ratio is calculated as follows –

$$\text{IRB coverage ratio} = \frac{\text{(Risk-weighted amount for credit risk of the institution's non-securitization exposures calculated under the IRB approach) + (Risk-weighted amount for credit risk of the institution's securitization exposures calculated under the IRB(S) approach)}}{\text{(Total risk-weighted amount for credit risk of the institution) – (Risk-weighted amount for credit risk for the institution's exposures to CCPs)}}$$

The scaling factor of 1.06 should be applied to the calculation of the IRB coverage ratio by virtue of section 224, which requires an authorized institution to: (a) multiply both the risk-weighted amount of its non-securitization exposures calculated under the IRB approach and the risk-weighted amount of its securitization exposures calculated under the IRB(S) approach (but excluding the credit valuation adjustment ("CVA") risk-weighted amount) by (b) the scaling factor (see also the subject of "*Scaling factor*") to arrive at (c) the risk-weighted amount for credit risk calculated under the IRB approach and IRB(S) approach. The risk-weighted amount under (c) is essentially the numerator in the above equation, and also forms part of the denominator (i.e. the institution's total risk-weighted amount for credit risk). The risk-weighted amount for credit risk for authorized institutions' exposures to central counterparties ("CCPs"), as calculated in accordance with Division 4 of Part 6A of the Rules, is excluded from both the numerator and denominator of the IRB coverage ratio.

Q.3 Under what circumstances will the Monetary Authority agree with an authorized institution an IRB coverage ratio which is less than that specified in section 11(1), i.e. 85% or (in the case of a phased roll-out) 75%?

A.3 The Monetary Authority would not normally expect to have to agree a lower IRB coverage ratio, even for a temporary period, with an authorized institution unless this is warranted by very exceptional and unforeseen circumstances which are beyond the institution's control.

Q.4 What are the measures the Monetary Authority may take against an authorized institution which fails to comply with the minimum IRB coverage ratio?

A.4 Where an authorized institution fails to comply with the minimum IRB coverage ratio, the Monetary Authority will consider taking one or more of the measures set out in section 10(5). Under normal circumstances, the Monetary Authority is most likely to exercise his power under section 10(5)(b) by requiring the institution to submit a remedial plan and to implement that plan within a period which is reasonable in all the circumstances of the case. This would be particularly appropriate in situations where a temporary non-compliance with the minimum IRB coverage ratio might be tolerated. Such a situation might arise where an institution has acquired another institution which is not using the IRB approach, or where a previously immaterial portfolio which was exempted from the IRB calculation has subsequently become significant in size due to business expansion. In these cases, the institution will need to demonstrate its ability to achieve IRB compliance for the operations concerned within the suggested timeframe. Failure to submit and satisfactorily implement a remedial plan will lead the Monetary Authority to re-consider the institution's eligibility for the use of the IRB approach.

During the period of non-compliance with the minimum IRB coverage ratio, the Monetary Authority may, depending on the circumstances of each case, consider whether it is necessary to take other measures specified in section 10(5) as well to mitigate the effect of non-compliance. For example, the Monetary Authority may consider –

(a) exercising his power under section 97F of the Banking Ordinance to vary any capital requirement rule applicable to the institution, including by increasing all or any of the institution's CET1 capital ratio, Tier 1 capital ratio and Total capital ratio; or

(b) taking other measures (such as subjecting the institution to a more rigorous capital floor or requiring the institution to reduce its credit exposures) as appropriate.

Exemption for exposures and revocation of such exemption

Q.5 What factors will the Monetary Authority consider in determining an authorized institution's application under section 12 to have such of the institution's exposures in an IRB class (or, in the case of retail exposures, an IRB subclass) or within a business unit exempted from inclusion under the IRB approach?

A.5 In determining such an application from an authorized institution, the Monetary Authority will consider the following factors –

(a) Practicality (re: section 12(2)(a)(iii)) – whether the institution has genuine difficulty in applying the IRB approach to the exposures which are the subject of the application, due to practical reasons (e.g. lack of data). The Monetary Authority has no intention of exempting any exposures if the institution clearly has the ability to apply the IRB approach to such exposures without incurring significant cost or effort;

(b) Regulatory capital arbitrage (re: section 12(2)(a)(iv)) – whether the exemption will materially prejudice the calculation of the institution's regulatory capital for credit risk (e.g. because the institution's regulatory capital is artificially lowered by the institution selectively choosing a certain approach or method for certain of its exposures);

(c) IRB coverage (re: section 12(4)(a)) – whether the exemption would cause the institution to fail to comply with the minimum IRB coverage ratio applicable to the institution (see also A.6 below); and

(d) Materiality (re: section 12(4)(b)) – whether the aggregate risk-weighted amount of the institution's non-equity exposures, or the average aggregate EAD over the past 12 months of the institution's equity exposures, to which the exemption would relate exceeds the relevant limits specified in section 12(4)(b).

Q.6 Is there a cap on the amount of an authorized institution's exposures which can be exempted by the Monetary Authority under section 12(2)(a) from inclusion under the IRB approach?

A.6 The maximum level of exemption under section 12(2)(a) is capped at 15% (or 25% in the case of a phased rollout) of an authorized institution's total risk-weighted amount for credit risk (excluding the risk-weighted amount for the institution's exposures to CCPs), given that under section 12(4)(a), the aggregate risk-weighted amount of an authorized institution's exposures that can be exempted from the IRB calculation should not cause the institution to fail to comply with the minimum IRB coverage ratio applicable to the institution. In other words, the maximum level of exemption available to, and the minimum IRB coverage ratio applicable to, the institution should add up to 100%. Nevertheless, this maximum exemption limit should not be seen by authorized institutions as a target level of exemption to work towards.

Q.7 Will the Monetary Authority approve an authorized institution to exclude from the IRB calculation only some exposures in an IRB class (or, in the case of retail exposures, in an IRB subclass) or within a business unit?

A.7 No. As a general rule, the Monetary Authority will only exempt exposures in an IRB class (or, in the case of retail exposures, an IRB subclass) or within a business unit from the IRB calculation, in their entirety. When an authorized

institution uses the IRB approach in respect of an IRB class (or, in the case of retail exposures, an IRB subclass) or a particular business unit, the institution should apply the IRB approach to all exposures falling within that class (or subclass) or business unit.

Q.8 How does the Monetary Authority interpret the term "business unit"?

A.8 The Monetary Authority does not intend to prescribe how the term "business unit" should be interpreted. Individual authorized institutions are expected to define the boundaries of their business units in a manner that is consistent with their business and management structure. Examples of a business unit may include a subsidiary, an overseas branch, or a division of an authorized institution.

Q.9 Which of the non-IRB approaches can an authorized institution apply to its exposures which are exempted from the IRB calculation?

A.9 Generally, an authorized institution should, as required under section 12(3)(a), apply the STC approach to the exposures to which the exemption relates. [*The following part of this clarification is no longer relevant given the transitional period has ended.*] However, under section 12(3)(b), an authorized institution may, during the transitional period, apply the BSC approach to such exempted exposures, provided that –

(a) the institution has been granted approval by the Monetary Authority under section 6(2)(a) to use the BSC approach to calculate its credit risk pending its implementation of the IRB approach; and

(b) the institution will apply the STC approach to the exposures concerned not later than the end of the transitional period.

Q.10 Is an exemption granted by the Monetary Authority under section 12 a permanent one?

A.10 No. An exemption under section 12 will only be granted in respect of an exposure class (or subclass in the case of retail exposures) or a business unit of an authorized institution that is immaterial in terms of size and perceived risk profile (see A.5 above for the factors relevant to the determination of a section 12 application). When the exemption of an exposure class / subclass or business unit under section 12 is no longer supported by valid reason(s), the Monetary Authority may take one or more of the actions set out in section 13(2), including revocation of an exemption granted under section 12. For example, if it has now become practicable for the institution to capture an exempted IRB class into its IRB calculations, or the growth in the institution's (exempted) equity exposures has caused it to breach the materiality thresholds stipulated in section 12(4)(b)(ii).

Subject :	**Parallel calculations**
Schedule :	**2 sections 2(a) and 3**

Background: *An authorized institution which makes an application to the Monetary Authority under section 8(1) for approval to use the IRB approach is required to satisfy the minimum requirements set out in Schedule 2, one of which relates to the carrying out of parallel calculations by the institution prior to the use of the IRB approach for capital adequacy purposes to demonstrate the suitability and capability of its rating system for the calculation of credit risk as stipulated in Schedule 2 section 2(a).*

"Parallel calculations", as defined in Schedule 2 section 3, means 2 sets of calculations, where one set consists of those calculations derived from the approach an authorized institution actually uses during the period covered by the parallel calculations to calculate its credit risk, and the other consists of those calculations derived from the IRB approach the subject of the institution's application made under section 8(1).

Q.1 What is the period of time for which the Monetary Authority requires an authorized institution to carry out parallel calculations for the purpose of demonstrating the suitability and capability of its rating system for using the IRB approach?

A.1 The Monetary Authority would normally expect an authorized institution to carry out parallel calculations for a period of 4 consecutive calendar quarters (i.e. 1 year) before using the IRB approach for capital calculation. For example, an authorized institution adopting the foundation IRB approach on 1 January 2007 would have been required to carry out parallel calculations based on the risk-weighting framework set out in the Third Schedule (now repealed) to the Banking Ordinance and the foundation IRB approach for the year 2006, covering the calendar quarter end dates of 31 March, 30 June, 30 September and 31 December. Similarly, an authorized institution adopting the advanced IRB approach on 1 January 2008 would be required to carry out parallel calculations based on the BSC approach or STC approach, as the case may be, and the advanced IRB approach for the year 2007, covering the calendar quarter end dates of 31 March, 30 June, 30 September and 31 December.

The Monetary Authority may, however, consider extending the period of an authorized institution's parallel calculations if the quality of the institution's parallel calculations is not satisfactory, any subsequent slippage is identified in the institution's implementation efforts, or any serious weaknesses are found in the institution's rating system.

Q.2 Is an authorized institution which currently uses the foundation IRB approach to calculate its credit risk for corporate, sovereign and bank exposures expected to carry out parallel calculations, say, for a period of 4 consecutive calendar quarters again when it applies to use the advanced IRB approach?

A.2 Yes. The purpose of parallel calculations is to enable an authorized institution to demonstrate to the Monetary Authority's satisfaction the suitability and capability of its rating system for the calculation of the institution's credit risk and to familiarise itself with the use of its rating system prior to it implementing the IRB approach. As using the advanced IRB approach will require an authorized institution to have a more sophisticated system for generating its own estimates of LGD and EAD and for calculating M for its corporate, sovereign and bank exposures, it is both prudent and reasonable to require the institution to provide similar parallel calculations to the Monetary Authority to prove its readiness to migrate to a more advanced approach. In such a situation, the parallel calculations will consist of one set of calculations using the foundation IRB approach (i.e. the current approach used by the institution) and the other using the advanced IRB approach (i.e. the approach the institution is seeking the Monetary Authority's prior consent to use).

To be consistent with the time period referred to in A.1 above, the Monetary Authority would expect an authorized institution to carry out parallel calculations for a period of 4 consecutive calendar quarters (i.e. 1 year) before migrating from the foundation IRB approach to the advanced IRB approach for regulatory capital calculation. However, the Monetary Authority may, on an exceptional basis, agree with an authorized institution a shorter timeframe (unlikely to be less than 2 consecutive calendar quarters) if the Monetary Authority is of the view that the institution's corporate, sovereign and bank exposures do not constitute a significant portion of its total risk-weighted amount for credit risk.

Q.3 In what form, and using what type of data, should an authorized institution provide its parallel calculations to the Monetary Authority?

A.3 Generally, an authorized institution should provide 2 sets of calculations to the Monetary Authority, one based on the approach it currently adopts and the other based on the IRB approach it is applying to use, using the new *Return of Capital Adequacy Ratio of an Authorized Institution Incorporated in Hong Kong** ("the CAR return"). As regards the calculations derived from the IRB approach, the institution should complete Part IIIc of the CAR return** and other relevant items relating to the use of that IRB approach under other parts of the CAR return (e.g. Division B of Part I for the calculation of the capital floor and various items in Part IIId for the calculation of the risk-weighted amount for securitization exposures under the IRB(S) approach). If an authorized institution encounters any practical difficulties in completing the CAR return for parallel calculation purposes, it should consult with the Monetary Authority to discuss any alternative arrangement.

[*This note is no longer relevant after implementation of Basel II in Hong Kong*]*
If the approach an authorized institution currently adopts is the risk-weighting

framework set out in the Third Schedule (now repealed) to the Banking Ordinance, the institution should report the relevant calculations using the previous version of the CAR return.

*** If an authorized institution using the foundation IRB approach applies to use the advanced IRB approach, the institution should, in addition to providing the calculations derived from the foundation IRB approach in Part IIIc of the CAR return, give its own estimates of LGD, CCF and M for corporate, sovereign and bank exposures in the relevant worksheets and columns.*

Q.4 Is an authorized institution required to achieve a certain level of IRB coverage ratio for parallel calculation purposes?

A.4 In order to enable a meaningful analysis of parallel calculations, any authorized institution planning to use the IRB approach is expected to have a substantial portion of its credit exposures subject to the IRB approach (e.g. with an IRB coverage ratio of 85%) at the start of the parallel calculations. Whilst an authorized institution may apply for the Monetary Authority to accept a lower IRB coverage ratio for the first 2 calendar quarters of parallel calculations, it is unlikely that the Monetary Authority will agree to a lower ratio (and in any event not lower than 75%) without reasonable justifications and assurance that the target IRB coverage ratio can be reached within an agreed timeframe.

Subject :	**Phased rollout**
Section :	**11(1) and (2), and 14(4) and (5)**

Background*: Section 14(4) provides for an authorized institution to use the IRB approach, with the Monetary Authority's prior consent, to calculate its credit risk for non-securitization exposures in phases (i.e. phased rollout) during the transitional period if the criteria set out in section 14(5) are satisfied. Where an authorized institution is adopting a phased rollout, the institution's IRB coverage ratio should not be less than 75%, which should be increased to not less than 85% at the end of the rollout, as required in section 11(1) and (2).*

Q.1 [*This question is no longer relevant as the transitional period has ended.*] **Under what circumstances would the Monetary Authority consent to an authorized institution adopting a phased rollout of the IRB approach during the transitional period?**

A.1 The Monetary Authority would generally give such consent to an authorized institution applying to use the IRB approach (whether advanced or foundation) if the institution demonstrates to the satisfaction of the Monetary Authority that it has, and will implement, a plan for the phased rollout –

(a) which is realistically achievable having regard to the nature of the

institution's business. In particular, the Monetary Authority should be satisfied that the institution is capable of achieving an IRB coverage ratio of not less than 75% and increasing that ratio to not less than 85% by the end of the rollout; and

(b) which has been developed in good faith for the purposes of introducing a method of calculating the institution's regulatory capital and not for the purposes of regulatory capital arbitrage. In this respect, the Monetary Authority will consider whether the institution has any practical difficulty in achieving the minimum IRB coverage ratio of 85% at the outset, i.e. on the date the institution intends to start using the IRB approach.

Q.2 Why is the option of phased rollout not available to authorized institutions planning to implement the IRB approach after the transitional period?

A.2 The purpose of providing the option of a phased rollout is to give flexibility to authorized institutions which act as pioneers in using the IRB approach during the transitional period. Such an option is not considered to be necessary for authorized institutions which plan to use the IRB approach after the transitional period because they will have a longer time for preparation (i.e. more than 3 years) than those using the IRB approach during the transitional period in terms of developing their internal rating systems and compiling the relevant data for implementing the IRB approach.

Subject :	**Rating system design and operations**
Section :	**150 – 155, 170 – 175 and 188 – 193**

Background*: Requirements on rating system design (including rating dimensions, rating structure, rating criteria and rating assignment horizon) and rating system operations (including rating coverage and integrity of rating process) are set out in sections 150 to 155 in respect of corporate, sovereign and bank exposures, sections 170 to 175 in respect of retail exposures and sections 188 to 193 in respect of equity exposures under the PD/LGD approach.*

Q.1 Is an authorized institution required to assign to the same obligor grade, separate exposures which it has to the same obligor?

A.1 Yes. Separate exposures to the same obligor should be assigned the same obligor grade, irrespective of differences in the transaction-specific factors (e.g., collateral, seniority of repayment, tenor and product type) of those exposures. However, an authorized institution may do otherwise if the institution demonstrates to the satisfaction of the Monetary Authority that the risk of default by a particular obligor is different in respect of different exposures the institution has to that obligor. Below are 2 typical examples where this might be the case –

(a) To reflect country transfer risk*, an authorized institution may assign to different obligor grades, different exposures which it has to the same obligor, if some of the exposures are denominated in local currency and others are denominated in foreign currency.

(b) Under the foundation or advanced IRB approach, an authorized institution may reflect the credit risk mitigating effect of a recognized guarantee or recognized credit derivative contract in respect of an exposure through adjusting the PD of the obligor in respect of that exposure.

** Country transfer risk is the risk that the obligor may not be able to secure foreign currency to service its external credit obligations due to adverse changes in foreign exchange rates or when the country in which it is operating suffers economic, political or social problems.*

Q.2 Is it possible for an authorized institution to have more than one obligor grade or pool to which exposures to obligors who are in default can be assigned?

A.2 Yes, provided that the rating definitions and criteria of these obligor grades or pools are clear and specific.

Q.3 Under what circumstances will the Monetary Authority regard an authorized institution's process for assigning its exposures to obligor grades, as leading to excessive concentration on a particular obligor grade?

A.3 Generally, if an institution's process of assignment leads to more than 30% of its exposures being assigned to a particular obligor grade, this will be regarded as a sign of excessive concentration. Significant concentration on a particular obligor grade should be justified by convincing empirical evidence that the obligor grade concerned covers a reasonably narrow PD range and the default risk posed by all obligors in respect of exposures assigned to that grade falls within that PD range.

Q.4 What are the key factors that an authorized institution should address if it wishes to apply the concept of "group support" in rating individual obligors in a connected group in accordance with section 154(c) and (d)?

A.4 Some key considerations which authorized institutions may take into account in formulating the policy referred to in section 154(d) on the assignment of obligor grades to individual obligors in a connected group are set out below. (Please note this list is not intended to be exhaustive, and authorized institutions should take into account their specific circumstances in their effort to comply with section 154(c) and (d).)

(a) Authorized institutions should define what constitutes a connected group for the purposes of section 154(c) and (d), with strong justification and clear documentation on the grouping criteria.

(b) Authorized institutions should establish and justify the "recognition" criteria for taking into account certain support provided by member(s) of a connected group, and the extent to which such support is reflected, in the determination of the obligor grades of individual obligors within the connected group, by assessing all relevant factors, which include, but are not limited to, the following –

(i) the source, nature, form and availability of support to obligors in a connected group;

(ii) the identification of, and justification for, those obligors within a connected group in respect of which the obligor grades will be adjusted to reflect the strength of support provided by the group;

(iii) the extent to which the group support is actually available to individual obligors within the connected group;

(iv) the willingness, ability and past behaviour of the support provider in honouring assurances to the relevant obligor or comparable commitments to similar beneficiaries, in both normal and stressed times;

(v) any material specific wrong-way risk and interconnectedness between the obligor and the support provider;

(vi) the potential obligations, whether contractual or not, of the "beneficiary" obligors in question to lend support, in turn, to other group members; and

(vii) the ability of, and the effectiveness with which, the authorized institution is able to validate or benchmark its process, methodology and data for incorporating group support into the ratings of individual obligors in a connected group, and the resulting adjustments made to the stand-alone rating of such obligors.

(c) Authorized institutions may also draw reference to analogous requirements in the credit risk mitigation frameworks set out in the Rules (e.g. section 77 and Division 10 of Part 6) or in modules such as CR-G-7 "*Collateral and guarantees*" under the Supervisory Policy Manual.

(d) In cases where the support provider and the beneficiary obligor fall under the purview of different regulators and/or are located in different

jurisdictions, any cross-sector and cross-border restrictions and country risk (e.g. exchange controls, liquidity constraints, supervisory ring-fencing measures) that may hinder the availability of the support should be taken into account.

(e) Authorized institutions should exercise prudence, conservatism and consistency in quantifying the extent of group support for the purposes of rating individual obligors, in order not to under-estimate the default risk arising from exposures to the individual obligors in the connected group.

(f) There should not be any double-counting of the credit risk mitigating benefits incorporated into the internal ratings of obligors in a connected group pursuant to section 154(c) and (d) and those recognized under the credit risk mitigation frameworks of the Rules.

(g) As in the case of other established policies and rating systems of authorized institutions, the group support framework should be subject to proper approval procedures, regular independent reviews and validations, and regular and timely updates.

Q.5 Section 155(a) requires that the rating process of an authorized institution be "independent" of the staff and management responsible for originating such exposures. What are the factors for assessing whether this "independence" criterion is met?

A.5 The concept of "independence" is a fundamental risk management principle and is commonly deployed in numerous prudential supervisory standards and risk management literature. Consistent with its interpretation in a generic sense, the following scenarios would generally indicate that a member of the staff or management of an authorized institution is "independent" of the credit origination process for an exposure for the purposes of section 155(a):

(a) the person does not directly stand to benefit from the extension of credit (e.g. in the form of bonus or other type of monetary or non-monetary compensation the availability and size of which are primarily linked to the origination of credit exposures);

(b) the person is independent from the institution's risk-taking functions, in terms of decision-making, reporting structure and resourcing (i.e. the risk-taking functions do not control the compensation package of the person concerned, or the budget or financing of the organizational unit to which that person belongs); and

(c) the person is free from potential conflict of interest in relation to the credit origination process in general and the exposures being rated or reviewed in particular (e.g. that person is not a connected person (as defined by

relevant regulatory and supervisory requirements applicable to the institution) in respect of the obligor of the exposure concerned).

Subject :	**Scaling factor**
Section :	**224**

Background: *An authorized institution is required under section 224 to multiply the risk-weighted amount of its non-securitization exposures calculated under the IRB approach and that for its securitization exposures calculated under the IRB(S) approach (but excluding the CVA risk-weighted amount) by a scaling factor of 1.06 to arrive at its risk-weighted amount for credit risk calculated under the IRB approach and IRB(S) approach which will then be used to derive its capital adequacy ratio.*

Q.1 What is the basis for applying the scaling factor of 1.06 as specified in section 224?

A.1 The application of a scaling factor is prescribed by the BCBS as a means to broadly maintain the aggregate level of minimum capital requirements across banks, while also providing incentives for them to adopt the more advanced risk-sensitive approaches (i.e. the IRB approach) under the Basel II framework. The BCBS has determined that the current best estimate of the scaling factor is 1.06, which is based on its review of the calibration of the Basel II Framework using the results of 2 quantitative impact studies (i.e. QIS 4 and QIS 5) conducted in a number of jurisdictions.

Q.2 Under what circumstances would the Monetary Authority envisage a change in the scaling factor?

A.2 Generally speaking, the Monetary Authority would not propose to revise the scaling factor unless –

(a) the BCBS provides a new estimate taking into account national experiences with the Basel capital framework; or

(b) there are sufficient grounds for the Monetary Authority to believe that the scaling factor provided by the BCBS may not reflect the Hong Kong situation in respect of the aggregate level of minimum capital required for authorized institutions using the IRB approach, having regard to their risk profiles and other jurisdictions' experiences.

Subject :	**Stress-testing**
Schedule :	**2 section 1(h)**

Background: *An authorized institution which makes an application to the Monetary Authority under section 8(1) for approval to use the IRB approach is required to demonstrate to the satisfaction of the Monetary Authority that it meets the minimum requirements set out in Schedule 2, one of which relates to the use of stress tests. Under Schedule 2 section 1(h), the institution is required to have a comprehensive stress-testing programme conducted regularly for the assessment of the adequacy of –*

(a) its regulatory capital and, where applicable, its internal capital for credit risk; and
(b) its ability to withstand any future events or changes in economic conditions which may have adverse effects on credit quality of its exposures.

Q.1 What types of stress tests should be conducted by an authorized institution for the purpose of Schedule 2 section 1(h)?

A.1 An authorized institution using the IRB approach is expected to conduct general stress tests which involve possible events or future changes in economic conditions that could have unfavourable effects on the institution's credit exposures. Examples of stress scenarios that may be used include economic or industry downturns, market risk events (such as currency, stock or bond market crises) and liquidity squeezes.

At a minimum, a specific stress test should be conducted to assess the effect of a mild recession on the institution's estimates of credit risk components. In devising the stress scenario for this specific stress test, the institution may have regard to the conditions experienced in any 2 or more consecutive quarters of negative GDP growth occurring in Hong Kong during the period from 2001 to 2003 and/or occurring during other financial crises relevant to the institution, e.g. the global financial crisis in 2007/2008 or the subsequent European sovereign debt crisis. The impact of the stress scenario should be assessed based on a 1-year time horizon and take into account the lag effect of the recession on the institution's credit exposures. The purpose of this specific stress test is to assess whether the assumptions and data used in the institution's rating system are prudent enough to ensure that its regulatory capital calculated under the IRB approach is sufficient to cover any potential loss arising in a period of mild recession. The Monetary Authority would expect to be consulted by the institution on the choice of the stress scenario to be used for this specific stress test.

For more details about the use of stress tests, see section 12 of the module CA-G-4 "*Validating Risk Rating Systems under the IRB Approaches*" (February 2006) and module IC-5 "*Stress-testing*" (May 2012) issued by the HKMA under the Supervisory Policy Manual.

Q.2 How frequently should an authorized institution conduct its stress tests for the purpose of Schedule 2 section 1(h)?

A.2 Generally, an authorized institution is expected to conduct its stress tests referred to in A.1 above at least on a quarterly basis.

Q.3 What would be the consequences for an authorized institution which fails to address any shortfall in its regulatory capital identified by the specific stress test referred to in A.1 above?

A.3 The 2 most likely consequences are that –

(a) the Monetary Authority may refuse to grant an approval to, or may withdraw an approval from, an authorized institution for the use of the IRB approach if he is satisfied that the institution fails to operate its rating system in a prudent and consistently effective manner as required under Schedule 2 section 1(b)(iii); and

(b) the Monetary Authority may consider exercising his power under section 97F of the Banking Ordinance to vary any capital requirement rule applicable to an authorized institution, including by increasing all or any of the institution's CET1 capital ratio, Tier 1 capital ratio and Total capital ratio (see item B6.2 in Annex B of the module CA-G-5 "*Supervisory review process*" (December 2012) issued by the Monetary Authority under the Supervisory Policy Manual).

[*This section is no longer relevant as the transitional period has ended*]

Subject : Transitional data requirements
Section : 14(1) – (3)

Background: *Under section 14(1) and (2), an authorized institution which starts to use the IRB approach during the period from 1 January 2007 to 31 December 2011 may observe a minimum data period which is shorter than the 5 years required for estimating PD under the foundation IRB approach and the PD/LGD approach and for estimating PD, LGD and EAD under the retail IRB approach.*

Q.1 Why is there a transitional data arrangement for authorized institutions which start to use the IRB approach (except for the advanced IRB approach as explained in A.2 below) during the first few years of implementing the revised capital adequacy requirements?

A.1 According to the BCBS, national supervisors have the discretion to relax the minimum data observation period for the use of the IRB approach to a minimum of 2 years of data upon the implementation of Basel II in their jurisdictions and to increase this requirement by one year for each of the first 3 years after Basel II implementation.

Recognizing that authorized institutions intending to use the IRB approach may need an extended period of time to develop or enhance their rating systems and to build up the required data for estimating PD, LGD and EAD, the Monetary Authority has decided to provide a similar relaxation to these authorized institutions during the initial stage of implementing the revised capital adequacy requirements in Hong Kong. To avoid authorized institutions rushing into using the IRB approach in the first year of implementation, however, any authorized institution which intends to start using the IRB approach during the transitional period has to comply with a 2-year minimum data requirement. In other words, an authorized institution which starts to use the IRB approach during 2008 or 2009 will be entitled to the same relaxation as an authorized institution which intends to start using the IRB approach during 2007. This 2-year minimum data requirement will only increase by one year for each of the 3 years after the end of 2009 (i.e. to reach 5 years in 2012).

Q.2 Is an authorized institution applying to use the advanced IRB approach for its corporate, sovereign and bank exposures entitled to use the transitional data arrangement as provided under section 14(1) and (2)?

A.2 No. Under the Basel II framework, there is no national discretion for supervisors to relax the minimum data requirement for banks using the advanced IRB approach for their corporate, sovereign and bank exposures (i.e. a minimum of 5 years of data is required for estimating PD and a minimum of 7 years of data is required for estimating LGD and EAD).

Furthermore, the Monetary Authority is of the view that since the use of the advanced IRB approach allows an authorized institution to make more extensive use of its own default and loss estimates in regulatory capital calculation, it is necessary for the institution to have enough data history to demonstrate its readiness to use such a sophisticated approach. If an authorized institution does not have sufficient data history to support its rating system for the use of the advanced IRB approach, it may be more appropriate for the institution initially to adopt the foundation IRB approach.

Q.3 Does an authorized institution intending to apply the transitional data arrangement need to meet any qualifying requirements?

A.3 Yes. Under section 14(3), an authorized institution which applies the transitional data arrangement under section 14(2) is required to demonstrate to the satisfaction of the Monetary Authority that –

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

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

(c) the rating system used by the institution fully enables it to comply with items (a) and (b) above.

These requirements are aimed at reducing the likelihood of an authorized institution understating its regulatory capital requirements, given that a 2-year data observation period may not be long enough to capture default and loss data during a full credit cycle. Authorized institutions are therefore expected to be conservative in their estimation and rating processes (e.g. by making any necessary adjustment to reflect the higher default and loss rates under economic downturn conditions) and to document how this has been achieved. In addition, authorized institutions which apply the transitional data arrangement to their retail exposures under the retail IRB approach are still required under section 178(1)(a) to estimate the LGD of each pool of retail exposures by taking account of the effect on loss severity of economic downturn conditions where credit losses are expected to be substantially higher than average.

Q.4 Is there any flexibility for the Monetary Authority to further relax the data requirements for the estimation of PD, LGD and EAD during the transitional period in the case of individual authorized institutions?

A.4 No. The Monetary Authority has no such discretionary power under the Rules.

Subject :	**Treatment of expected losses and eligible provisions**
Section :	**42, 43 and 220 - 223**

Background: *Under section 220(1), an authorized institution is required to compare its total eligible provisions and its total EL amount as calculated under the IRB approach to determine whether there is any excess of eligible provisions which may be included in the institution's Tier 2 capital in accordance with section 42(3)(c) or any shortfall in eligible provisions which should be deducted from the institution's CET1 capital in accordance with section 43(1)(i).*

Q.1 Why is an authorized institution required to compare its total eligible provisions and its total EL amount as calculated under the IRB approach for the computation of its capital base?

A.1 The IRB approach is based on measures of unexpected losses and expected losses. For capital adequacy purposes, an authorized institution should cover its expected losses by making adequate provisions and cover its unexpected losses by setting aside sufficient regulatory capital. The formulae used (e.g. Formula 16) to calculate the risk-weighted amount of an exposure produce a capital requirement for the exposure which covers unexpected loss only. Each authorized institution is thus required to separately calculate the total EL amount of its exposures subject to the IRB approach and compare the amount so

calculated with the total eligible provisions which are attributable to these exposures. Any excess of, or shortfall in, an authorized institution's eligible provisions should then be reflected in the institution's capital base, as if the institution had reduced, or increased, its provisions to a level that would fully cover its expected losses.

Q.2 Why is an authorized institution not required to calculate its EL amount for its equity exposures under the market-based approach (i.e. simple risk-weight method or internal models method) and for its other exposures under the specific risk-weight approach?

A.2 Strictly speaking, the market-based approach and the specific risk-weight approach are not IRB-style calculation approaches because neither of them requires an authorized institution to use an internal rating system or to calculate the risk-weighted amount of an exposure based on any formula calibrated by the BCBS for a particular IRB class or IRB subclass under the IRB framework. As such, the concept of making a distinction between expected losses* and unexpected losses as described in A.1 above does not apply.

Similarly, an authorized institution using the PD/LGD approach for its equity exposures is not required to calculate the EL amount for its equity exposures which are subject to the minimum risk-weight set out in section 194(1)(e) or (f), or the risk-weight set out in section 194(1)(g), as stated in section 223(2)(b).

** An authorized institution is either not required to calculate the EL amount of these exposures or is simply required to deem the EL amount of these exposures as zero.*

Q.3 How should an authorized institution apportion its total regulatory reserve for general banking risks and collective provisions for the purpose of section 221 if the institution uses a combination of approaches, say the IRB approach and STC approach, to calculate its credit risk?

A.3 The method of apportionment is set out in section 42(2)(a). In general, an authorized institution should apportion its total regulatory reserve for general banking risks and collective provisions between the approaches it uses to calculate its credit risk (i.e. the STC approach, the BSC approach, the IRB approach, the STC(S) approach and the IRB(S) approach) on a pro-rata basis. The apportionment should be made in accordance with the proportions of the institution's risk-weighted amount for credit risk which have been calculated using the different approaches.

However, if an authorized institution has obtained the Monetary Authority's prior consent under section 42(2)(b), the institution may use its own method to apportion its total regulatory reserve for general banking risks and collective provisions between the various approaches used, if the institution can justify that

there is a valid reason for using such method. For example, the institution may wish to use a different method of apportionment to that stated in section 42(2)(a) if it calculates its collective provisions in accordance with accounting policies that are based on the fair value (i.e. instead of the risk-weighted amount) of its exposures.

Q.4 Should the CVA risk-weighted amount be included in the risk-weighted amount for credit risk "calculated" by using the IRB approach for the purposes of apportionment of total regulatory reserve for general banking risks and collective provisions (under section 42(2)(a)) and for recognition of excess of total eligible provisions over total EL amount as Tier 2 capital (under section 42(3)(c))?

A.4 No, Conceptually, the issue of whether the CVA risk-weighted amount should be included in the risk-weighted amount for credit risk calculated using the IRB approach, for the purposes of determination of Tier 2 capital or apportionment of an authorized institution's total regulatory reserve, should reflect the nature of the risk that the CVA capital charge is designed to address. As the CVA capital charge is held against the risk of potential mark-to-market losses that arise from possible future changes in the credit spread of counterparties, the CVA risk is considered more akin to market risk than to credit risk, and as being somewhat different in nature to loan loss provisions. The association of the CVA capital charge with market risk is further illustrated by the fact that the availability of the advanced CVA method is linked to an authorized institution's supervisory approval to use the internal models approach for market risk to model specific risk for interest rate exposures. Also, the CVA risk-weighted amount is not "calculated" using the IRB approach in the sense that the applicable calculation methodologies are separately prescribed in (Division 3 of) Part 6A of the Rules. Logically it follows that the CVA risk-weighted amount should not be included in the calculation of the risk-weighted amount for credit risk "calculated" using the IRB approach for the purposes of section 42.

[*This section is no longer relevant as the transitional period has ended.*]

Subject : Use of non-IRB approaches
Section : 5, 6 and 7

Background: *Section 5 requires an authorized institution to use the STC approach to calculate its credit risk for non-securitization exposures unless it has obtained the Monetary Authority's approval to use the BSC approach under section 6(2)(a) or the IRB approach under section 8(2)(a). Any authorized institution applying to use the BSC approach as an interim approach prior to its implementation of the IRB approach should fulfil the minimum requirements set out in section 7(b).*

Q.1 Which of the non-IRB approaches can an authorized institution apply to its exposures prior to its implementation of the IRB approach?

A.1 Any authorized institution seeking to use the IRB approach can apply the STC approach (i.e. the default option) to its exposures prior to its implementation of the IRB approach. No prior approval from the Monetary Authority is required for an authorized institution to use the STC approach. The use of this default option may however require an authorized institution to expend significant time and effort in developing an STC-compliant system which may only be used for a short period of time and will be of no value when the institution starts to use the IRB approach. The Rules, therefore, provide a less costly option to individual authorized institutions by allowing them, where appropriate and with the prior consent of the Monetary Authority, to use the BSC approach (i.e. a simple approach which is basically a modified version of the OECD-based risk-weighting framework under the 1988 Accord) to calculate their credit risk during the transitional period. To qualify for this, an authorized institution should demonstrate to the satisfaction of the Monetary Authority that it has a precise and realistic plan to implement the IRB approach and has the capability to meet the minimum requirements set out in Schedule 2 for using the IRB approach as planned within the transitional period. The Monetary Authority will also have regard to any other relevant circumstances of the institution.

SECURITIZATION

1. This part contains a set of Q&As covering specific requirements set out in Part 2 and Part 7 of, and Schedule 9 and Schedule 10 to the Rules in relation to the calculation of credit risk for securitization exposures.

2. This part should be read in conjunction with the Contents, where a list of subjects covered under this part is shown, and the Introduction, which describes the scope and purpose of these Q&As and explains how they can be used in general.

3. If reading on-line, please click on the blue underlined headings to activate hyperlinks to the relevant subjects.

Subject :	**Credit enhancement**
Section :	**227(1), 234 and 235, 260 and 261, and 268 and 269**

Background: *"Credit enhancement" is defined in section 227(1) as a contractual arrangement whereby a person (a) retains or assumes credit risk in respect of a securitization exposure under a securitization transaction and (b) provides, in substance, some degree of credit protection to one or more than one other party to the transaction.*

An authorized institution's provision of credit enhancement will give rise to a securitization exposure, the risk-weighted amount of which is calculated in accordance with the relevant provisions set out in sections 234 and 235 (for the STC(S) approach), sections 260 and 261 (for the ratings-based method under the IRB(S) approach), and sections 268 and 269 (for the supervisory formula method under the IRB(S) approach).

Q.1 Please give some examples of credit enhancement.

A.1 Credit enhancement involves the provision of credit protection to any party to a securitization transaction. By way of example, credit enhancement may be in the form of an excess spread, over-collateralization, a guarantee or an indemnity.

Q.2 If the amount of credit enhancement provided by an authorized institution to a party or parties to a securitization transaction cannot be readily ascertained (e.g. the exposure is not limited to a specified amount), how should the institution calculate its regulatory capital in

respect of the credit enhancement?

A.2 In such a case, an authorized institution should calculate its regulatory capital in respect of the credit enhancement as if the credit enhancement covers the full value of the securitization exposures which are the subject of such credit enhancement. If an authorized institution providing such credit enhancement is not an originating institution, the institution should calculate its regulatory capital in respect of the credit enhancement as if it were an investor in the securitization exposures.

Subject :	**Implicit support**
Section :	**227(1) and 230**

Background: *"Implicit support" is defined in section 227(1) as any direct or indirect support which the originating institution provides (or has provided) to investors in a securitization transaction in excess of the institution's predetermined contractual obligations, with a view to reducing potential or actual losses that the investors may suffer. Section 230(1) prohibits an originating institution in a securitization transaction which falls within section 229(1) from providing implicit support to investors in the transaction. If such originating institution contravenes section 230(1), the Monetary Authority may, after having regard to the materiality of the contravention, take one or more of the supervisory measures set out in section 230(2).*

Q.1 Please give some examples of implicit support which is prohibited under section 230(1).

A.1 The Monetary Authority will determine whether there is implicit support based on the specific circumstances of each case (see also A.2 below). For illustrative purposes only, the Monetary Authority may consider the following situations as examples of an originating institution providing implicit support in a securitization transaction –

(a) the purchase of securitization issues or the repurchase of underlying exposures in the transaction by the originating institution for an amount above their fair market value (e.g. if the originating institution has repurchased deteriorating underlying exposures at par when the fair market value of those exposures is less than par) (see also the third paragraph of A.1 under the subject of "*Significant credit risk transfer*");

(b) the sale by the originating institution of discounted credit exposures

into the pool of underlying exposures;

(c) an increase in the first loss tranche taken up by the originating institution by reason of the deterioration in the credit quality of the underlying exposures;

(d) where the transaction contains a clean-up call, the exercise of that clean-up call by the originating institution which has the effect of providing credit enhancement to the transaction (re: section 230(4));

(e) the substitution or replenishment of exposures by the originating institution with the intention of improving the credit quality of the pool of underlying exposures;

(f) the existence of a contractual term which gives an investor in the transaction the option of requiring the originating institution to add further assets (including cash) to the securitization structure, unless such option has been fully accounted for in the institution's books on the basis that it will be exercised;

(g) the waiver by the originating institution of its contractual rights to receive future income (e.g. excess spread) generated from the transaction, unless such rights have not been recognized in the institution's books; and

(h) the renegotiation of any annual fee for any liquidity facility provided by the originating institution at below market rates, unless such fee income has not been recognized in the institution's books.

The above list of examples is by no means exhaustive. It should also be noted that implicit support may be provided indirectly through other means (e.g. the use of SPEs). Moreover, the Monetary Authority may consider that implicit support is being provided if the originating institution seeks to make use of contractual obligations, such as those which may arise under any representation or warranty given or under a derivative agreement, with the intention of providing implicit support. Payments made by the institution under the guise of fulfilling such contractual obligations may constitute implicit support if the payments made exceed those which the institution is contractually obliged to make.

Q.2 When an originating institution provides support (contractual or otherwise) in a securitization transaction, what factors might suggest that such support does not amount to implicit support?

A.2 The factors to be considered by the Monetary Authority in this regard will vary depending on the terms and structure and other circumstances of a securitization transaction. In general, however, the Monetary Authority will have regard to whether –

(a) the support that the originating institution may give is expressly set out in the contractual and marketing documentation for the transaction;

(b) the nature of support that the originating institution may give is precisely described in the documentation referred to in item (a) above;

(c) the maximum degree of support that can be given can be ascertained at the time of securitization by the originating institution or by any person who refers to the information given in the marketing documentation for the transaction;

(d) the assessment of whether there has been significant credit risk transfer under the transaction, for the purposes of the requirement specified in Schedule 9(a) or Schedule 10(1)(a), assumes that the originating institution will be providing support to the maximum degree referred to in item (c) above; and

(e) the originating institution's regulatory capital for credit risk is adjusted at the time of securitization to reflect the effect of giving the maximum degree of support referred to in item (c) above at once, whether by an immediate deduction from capital or otherwise.

Subject :	**Gain-on-sale**
Section :	**227(1), 236A(1) and 251A(1)**

Background: *"Gain-on-sale" is defined under section 227(1) of the Rules as any increase in the CET1 capital of the originating institution resulting from the sale of underlying exposures in a securitization transaction. An authorized institution is required under section 236A(1) (for the STC(S) approach) and section 251A(1) (for the IRB(S) approach) to deduct from its CET1 capital any gain-on-sale arising from a securitization transaction where the institution is the originating institution.*

Q.1 Should the amount of capital deduction in respect of a gain-on-sale for a securitization transaction be the amount recorded for such

gain-on-sale in the originating institution's books for the current year, or the "accumulated" amount recorded for such gain-on-sale in the originating institution's books (i.e. including the amount recorded for such gain-on-sale in previous years)?

A.1 It is the "accumulated" amount recorded for the gain-on-sale in the originating institution's books that should be deducted because such an amount represents the total amount of increase in the institution's CET1 capital from the sale of underlying exposures in a securitization transaction.

Subject :	**Prescribed calculation methods under IRB(S) approach**
Section :	**16**

Background: *Section 16 sets out the calculation methods an authorized institution adopting the IRB(S) approach must use to calculate its credit risk for securitization exposures, including the ratings-based method for rated securitization exposures and the supervisory formula method for unrated securitization exposures.*

Q.1 Why is the internal assessment approach ("IAA") not made available to authorized institutions using the IRB(S) approach?

A.1 Under the Basel II securitization framework, a bank adopting the internal ratings-based approach for securitization exposures may seek supervisory approval for using the IAA to calculate its credit risk for certain unrated securitization exposures (e.g. liquidity facilities or credit enhancements) which the bank has extended to ABCP programmes, subject to meeting a number of operational requirements. The Monetary Authority, however, considers that it is not cost-effective to implement the IAA in Hong Kong at this stage, having regard to the following factors –

(a) the local banking sector is still generally in the early phase of developing securitization activities;

(b) authorized institutions' demand for using the IAA is not high given that they have no or insignificant exposure to ABCP programmes; and

(c) the effect of not implementing the IAA is thus limited.

The Monetary Authority will continue to monitor the state of development

of the local securitization market and whether or not authorized institutions need and are ready to use the IAA, and will determine the appropriate timing for making the IAA available in future.

Subject :	**Requirements for applying section 229(1) treatment**
Schedule :	**9 and 10**

Background: *An originating institution in a securitization transaction seeking the Monetary Authority's prior consent for applying the treatment set out in section 229(1) to the underlying exposures in the transaction is required to demonstrate to the satisfaction of the Monetary Authority that all the requirements of Schedule 9 (in the case of a traditional securitization transaction) or Schedule 10 (in the case of a synthetic securitization transaction) applicable to or in relation to the originating institution and the transaction have been met. See also the subject of "Treatment to be accorded to securitization transaction by originating institution".*

Set out below are some Q&As relating to specific requirements of Schedule 9 and Schedule 10.

Subject :	**Effective control over underlying exposures**
Schedule :	**9 (b)**

Background: *Schedule 9(b) requires an originating institution in a traditional securitization transaction to demonstrate to the satisfaction of the Monetary Authority that it does not maintain effective control, directly or indirectly, over the underlying exposures in the transaction.*

Q.1 Please confirm whether or not the following constitute the maintenance of effective control by an originating institution over the underlying exposures in a securitization transaction: (a) if the originating institution has the right to repurchase the underlying exposures, or is otherwise in a position to bring about the repurchase of the underlying exposures, or (b) if the originating institution retains servicing rights in respect of the underlying exposures.

A.1 For the purposes of Schedule 9(b), an originating institution in a traditional securitization transaction will be considered to have maintained effective control over the underlying exposures in the transaction if the institution has the right to repurchase the underlying exposures, or is otherwise in a position to bring about the repurchase of the underlying

exposures, without such repurchase being made on an arm's length basis. However, the originating institution's retention of servicing rights in respect of the underlying exposures does not of itself constitute effective control of the underlying exposures.

Subject :	**Significant credit risk transfer**
Schedule :	**9(a) and 10(1)(a)**

Background*: Schedule 9(a) and Schedule 10(1)(a) require an originating institution to demonstrate to the satisfaction of the Monetary Authority that significant credit risk associated with the underlying exposures in the securitization transaction has been transferred from the originating institution to third parties.*

Q.1 What approach will the Monetary Authority adopt in determining whether significant credit risk has been transferred for the purposes of Schedule 9(a) or Schedule 10(1)(a)? Please explain the criteria or considerations that the Monetary Authority will take into account.

A.1 In determining whether or not significant credit risk has been transferred to third parties, the Monetary Authority will assess various factors relevant to the circumstances of each securitization transaction. These factors include, but are not limited to, the following –

(a) the terms and structure of the securitization transaction, including –

(i) any special features such as call options, materiality thresholds, replenishment mechanisms, loss allocation mechanisms and workout agreements; and

(ii) any recourse, warranty, credit enhancement or liquidity facility provided by the originating institution;

(b) the quality of the pool of underlying exposures relative to the risks inherent in and potential losses arising from any retained securitization positions held by and any support, contractual or otherwise, provided by the originating institution;

(c) the parties involved in the transaction (e.g. the originator, servicer, SPE, liquidity provider, credit protection provider or investor) and their respective roles, obligations and rights;

(d) the effectiveness and legal enforceability of the credit risk transfer, and other legal and documentation issues that may arise from the transaction; and

(e) the level of reduction in regulatory capital achieved through securitizing the underlying exposures relative to the level of credit risk retained by the originating institution.

In particular, the Monetary Authority will focus on the substance of the securitization transaction, as credit risk involved in many securitization activities may not always be obvious. In certain types of securitization transactions, an originating institution may actually be exposed to the same level of credit risk to which it would have been exposed had there been no securitization, even though the particular transaction might appear to have isolated the institution from any credit exposure (e.g. the credit risk associated with a pool of underlying exposures may be concentrated within the partial, first loss securitization positions retained by the originating institution which cover the full amount of expected losses arising from those exposures). In the case of synthetic securitization transactions, the Monetary Authority will pay special attention to whether such transactions exhibit the characteristics of "high-cost credit protection" transactions[5] which may call into question the degree of credit risk transfer or mitigation achieved by such transactions. Besides, the provision of implicit support to investors in the securitization issues may understate the originating institution's actual credit exposure. In all such cases, excluding an exposure from the calculation of regulatory capital will not be justified where there is no commensurate reduction in the credit risk of the originating institution.

In order to ascertain whether or not the level of credit risk transfer is overstated, the Monetary Authority will pay special attention to the terms and structure of securitization transactions which involve, for instance, an originating institution retaining any partial, first loss securitization positions, extending credit enhancement or liquidity facilities in connection with the securitization transaction, or providing credit protection to investors through excess yield, spread accounts or other structural provisions of the transaction. Moreover, the Monetary

[5] "High-cost credit protection" refers generally to situations where credit protection transactions (including securitization transactions) are structured in such a way as to enable the protection buyer to receive favourable risk-based capital treatment in the short term and defer the recognition of losses and costs of protection in earnings over an extended period (see the HKMA's circular on "Basel Guidance on High-cost Credit Protection" issued on 21 February 2012 and Annex G of the Supervisory Policy Manual module CA-G-5 "Supervisory Review Process" for more details).

Authority may have regard to the substance of the securitization agreement, other relevant documents, informal commitments and understandings, or subsequent actions of the parties to the transaction. It should be noted, in particular, that the subsequent purchase of securitization issues by an originating institution or the subsequent repurchase of any of the underlying exposures in a securitization transaction by an originating institution, where there appears to be no legitimate or commercially sound reason* to support such action, may raise the issue of whether or not the institution is thereby providing implicit support and hence call into question whether significant credit risk transfer has actually been achieved.

If the Monetary Authority becomes aware of any fact, finding or concern subsequent to the commencement of the securitization transaction that may cast doubt on the actual level of credit risk transferred, the Monetary Authority may trigger a review of whether the transaction continues to satisfy the requirement on significant credit risk transfer.

* *Examples of where the repurchase of underlying exposures may be for legitimate or sound commercial reasons might include the following: where there is an obligation for an originating institution to repurchase underlying exposures due to breach of a representation or warranty given by the institution (i.e. the circumstance allowed for under Schedule 9(g)(ii)(A)); where the institution repurchases underlying exposures to enable the institution to provide further advances to borrowers, the exposures to whom are included in the underlying exposures in the securitization transaction; or to facilitate a more cost-effective workout of those underlying exposures that have defaulted. It should be noted, however, that for section 229(1) treatment to be available in respect of a traditional securitization transaction, the transaction documentation cannot contain any clause that obliges the institution to repurchase the underlying exposures, at any time, except for an obligation which arises from a representation or warranty as to the status of the underlying exposures as referred to in Schedule 9(g)(ii)(A).*

Subject :	**Securitization transaction**
Section :	**227(1)**

Background: *As defined in section 227(1), "securitization transaction" means a transaction involving the tranching of credit risk associated with a pool of underlying exposures and in respect of which (a) there are not less than two different tranches, (b) payments to investors or other parties to the transaction depend on the performance of the underlying exposures, and (c) the subordination of tranches determines the distribution of losses during the life of the transaction.*

Q.1 How should one determine whether a transaction involving the issue of asset-backed securities has at least two different tranches for the purpose of qualifying as a securitization transaction?

A.1 To qualify as a securitization transaction, the asset-backed securities should, among other things, have at least two different tranches of credit risk associated with the underlying exposures where the junior tranche absorbs credit losses first in order to reduce the likelihood of interrupting contractual payments to investors in securities in the more senior tranche(s).

Where the asset-backed securities are issued in different classes with different returns and maturities, but none of the classes absorbs credit losses before the others (i.e. the classes rank equally in terms of repayment priority), the transaction is regarded as having a single-tranche structure and hence not falling within the definition of a securitization transaction for regulatory capital calculation purposes.

Q.2 What is the capital treatment for an exposure held by an authorized institution in respect of a transaction with a single-tranche securitization structure (i.e. a structure which involves no tranching or segmentation of credit risk of the underlying exposures before or after the securitization) which does not fall within the definition of a securitization transaction?

A.2 A transaction which has a single-tranche securitization structure does not qualify as a "securitization transaction" for the purpose of the Rules. Consequently, any exposure that an authorized institution has in respect of a single-tranche securitization structure, is a non-securitization exposure for the purpose of the Rules, and the institution should not use Part 7 of the Rules to calculate its credit risk for that exposure. Instead, the approach the institution should use to calculate its credit risk for such an exposure (whether as an originating institution or an investing institution) is the approach it uses to calculate its credit risk for non-securitization exposures (i.e. the BSC, STC or IRB approach). In this regard, the institution can, in the case of a synthetic securitization with a single-tranche structure, take into account any credit risk mitigation used to transfer the credit risk of the underlying exposures to other parties in the securitization, provided such credit risk mitigation satisfies the requirements of the particular calculation approach used.

Where the underlying exposures in a traditional securitization with a single-tranche structure are not recognized on the originating institution's

financial statements/accounts in accordance with prevailing accounting standards, the institution may exclude such exposures from the calculation of the risk-weighted amount of its credit exposures under the Rules, on the basis that such exposures may be regarded as no longer being exposures of the institution.

Subject :	**Senior position under ratings-based method**
Section :	**262(2), 262(12) and 262(13)**

Background: *Section 262(2) provides that if an authorized institution has a rated securitization exposure arising from a securitization position it holds in a given tranche of a securitization transaction, being a tranche that is effectively backed or secured by a first legal claim on the entire amount outstanding in respect of the underlying exposures in the transaction, then that position should be treated as a senior position for the purpose of risk-weight allocation using the ratings-based method under the IRB(S) approach. In the case of a re-securitization exposure that is not a liquidity facility and a securitization exposure that is a liquidity facility, section 262(12) and section 262(13) respectively provide further criteria for such exposure to be regarded as a senior position.*

Q.1 Please illustrate with a few examples how an authorized institution should determine which of the securitization positions it holds in a securitization transaction can be regarded as senior positions for the purpose of determining the appropriate risk-weight to be allocated to the securitization exposures arising from those positions using the ratings-based method under the IRB(S) approach.

A.1 (a) In a typical synthetic securitization transaction, securitization positions in the "super senior" tranche would be treated as senior positions, provided that all of the conditions for inferring a rating from a lower tranche are fulfilled (see section 263).

(b) In a traditional securitization transaction where all the tranches above the first loss tranche are rated, securitization positions in the tranche with the highest rating would be treated as senior positions. However, if there are several tranches that share the same rating, only securitization positions in the most senior tranche in the waterfall* would be treated as senior.

(c) A liquidity facility supporting an ABCP programme is usually the most senior position in the waterfall if it is structured to support all the commercial paper issued under the ABCP programme and is not

capable of being drawn after all credit enhancements from which the facility would benefit have been exhausted (referred to as a "programme-wide liquidity facility"). However, if a liquidity facility is structured to support only certain pools of the underlying exposures within the programme, it will absorb losses on the underlying exposures prior to the programme-wide liquidity facility and therefore cannot be treated as a senior position.

** A waterfall refers to a cascade of cash flows in a securitization transaction from the most senior to the most subordinated tranche.*

Subject :	**Treatment to be accorded to securitization transaction by originating institution**
Section :	**229**

Background*: Subject to the Monetary Authority's prior consent, an originating institution in a securitization transaction which meets the requirements specified in Schedule 9 (in the case of a traditional securitization transaction) and Schedule 10 (in the case of a synthetic securitization transaction) may apply the treatment set out in section 229(1) in respect of the underlying exposures in the transaction when calculating the risk-weighted amount of its credit exposures (i.e. in the case of a traditional securitization transaction, by excluding the underlying exposures from that calculation, or in the case of a synthetic securitization transaction calculating the risk-weighted amount of the underlying exposures by taking into account the effect of any credit risk mitigation used for transferring the credit risk of the underlying exposures).*

See also the subject of "Requirements for applying section 229(1) treatment".

Q.1 Can an originating institution in a securitization transaction simply calculate its credit risk for the underlying exposures in the transaction as if they had not been securitized (i.e. without resorting to the treatment set out in section 229(1))?

A.1 Yes. Whether or not an originating institution in a securitization transaction applies for consent to use the treatment set out in section 229(1) is entirely a matter of discretion for the institution. If the institution –

(a) chooses not to apply for such consent;

(b) does not satisfy one or more of the requirements specified in Schedule 9 or 10; or

(c) applies for such consent but the application is refused,

then the institution will be required to calculate its credit risk for the underlying exposures in the transaction as if they had not been securitized. In other words, in the case of a traditional securitization transaction, the institution will have to comply with the requirements in section 229(3) and (4); and in the case of a synthetic securitization transaction, the institution will have to comply with the requirements in section 229(5). These requirements are explained in A.2 below.

Q.2 What should be the capital treatment for a securitization transaction in respect of which the originating institution does not have the Monetary Authority's consent to apply section 229(1)?

A.2 In the case of a traditional securitization transaction, the originating institution should, in accordance with section 229(3) and (4), treat the underlying exposures of the transaction as if they had not been securitized. In particular, it should be noted that section 229(4) requires the institution to exclude from its capital base any gain-on-sale arising from the securitization transaction.

In the case of a synthetic securitization transaction, the originating institution should, in accordance with section 229(5), risk-weight the underlying exposures in accordance with the same approach the institution uses to calculate its credit risk for non-securitization exposures or for securitization exposures (if the underlying exposures include securitization exposures), save that it should not take into account the effect of any credit protection used in the transaction to transfer the credit risk of the underlying exposures.

Q.3 How should authorized institutions treat those securitization schemes originated by them in respect of which they had obtained the Monetary Authority's approval prior to 1 January 2007 to exclude the exposures concerned from their balance sheet for regulatory capital calculation purposes based on the Guideline on "*Supervisory treatment of asset securitization and mortgage-backed securities*" issued in August 1997? Would the Monetary Authority's approval be grandfathered under the revised capital adequacy requirements?

A.3 For any transaction which has taken place prior to the effective date of the Rules (i.e. 1 January 2007) and which falls within the definition of "securitization transaction" under the Rules, Part 7 of the Rules applies

instead of the requirements set out in the August 1997 Guideline on "*Supervisory treatment of asset securitization and mortgage-backed securities*". Accordingly, the Monetary Authority's approval based on the August 1997 guideline will not be grandfathered under the revised capital adequacy requirements, and an authorized institution in this position must obtain the prior consent of the Monetary Authority under section 229(1) and satisfy the requirements of Schedule 9 or Schedule 10, as the case requires, before being able to apply the treatment set out in section 229(1) to its transaction.

In the case of any securitization which the Monetary Authority had approved before 1 January 2007 and which does not fall within the definition of "securitization transaction" in the Rules, the approval no longer applies and the exposures which an institution has in respect of such securitization are non-securitization exposures for the purposes of the Rules. The institution should calculate its credit risk in respect of these exposures using the BSC, STC or IRB approach as appropriate (unless the exposures are not recognized as being on the institution's financial statements/accounts in accordance with prevailing accounting standards, in which case the institution may exclude them from the calculation of the risk-weighted amount of its credit exposures). See A.2 under the subject of "*Securitization transaction*" for further details.

Q.4 In general, what information or supporting documents would the Monetary Authority expect an originating institution seeking section 229(1) consent in respect of a particular securitization transaction to provide, for the purpose of demonstrating that the transaction meets the requirements of Schedule 9 or Schedule 10?

A.4 To facilitate the Monetary Authority's review, the originating institution is expected to provide the Monetary Authority with a self-assessment report demonstrating how each of the requirements of Schedule 9 or Schedule 10, as the case may be, applicable to or in relation to the institution and the securitization transaction concerned have been satisfied. Any relevant information or supporting documents evidencing compliance should be provided. These include relevant legal and tax opinions on credit risk transfer specified in Schedule 9(d) and (e) or Schedule 10(1)(d). The following information, where applicable, should also be provided to supplement the assessment –

(a) the terms and structure of the securitization transaction, including any special features (e.g. call options, materiality thresholds etc.) and any recourse, warranty, credit enhancement or liquidity facility

provided by the originating institution;

(b) the quality of the pool of underlying exposures relative to the risks and potential losses arising from any retained securitization positions held by, and any support, contractual or otherwise, provided by, the originating institution;

(c) the identity of the parties involved in the transaction (e.g. the originator, servicer, SPE, liquidity provider, credit protection provider or investor) and their respective roles, obligations and rights; and

(d) an analysis of the estimated level of reduction in regulatory capital as a result of the transaction relative to the level of credit risk retained by the institution.

Where necessary, the Monetary Authority may seek additional information from the originating institution or request that additional legal opinions or certifications from an independent auditor (re: item Schedule 9(e)) be provided.

Q.5 If there are subsequent changes (e.g. modification of terms or structure) to a securitization transaction which is the subject of a section 229(1) consent given by the Monetary Authority, how would such changes affect the consent given?

A.5 The Monetary Authority's consent under section 229(1) is given on the basis that the requirements of Schedule 9 or Schedule 10 applicable to or in relation to the originating institution and the securitization transaction concerned have been met. As these requirements have to be satisfied on a continuing basis, the originating institution should ensure that this is the case throughout the life of the securitization transaction. After the commencement of the securitization transaction, there could be changes affecting the securitization transaction (e.g. modification of its terms or structure) which may call into question whether the transaction is still eligible for section 229(1) treatment. The originating institution is expected to consult the Monetary Authority on such changes and, where necessary, demonstrate to the Monetary Authority's satisfaction that the institution and the securitization transaction continue to satisfy the relevant requirements of Schedule 9 or Schedule 10.

MARKET RISK

1. This part contains a set of Q&As covering specific requirements set out in Part 2 and Part 8 of, and Schedule 3 to, the Rules in relation to the calculation of market risk.

2. This part should be read in conjunction with the Contents, where a list of subjects covered under this part is shown, and the Introduction, which describes the scope and purpose of these Q&As and explains how they can be used in general.

3. If reading on-line, please click on the blue underlined headings to activate the hyperlinks to the relevant subjects.

Subject :	**Definition of trading book**
Section :	**2**

Background: *The definition of "trading book" in section 2(1) is used to determine which of an authorized institution's exposures in financial instruments and commodities are subject to the calculation of market risk for regulatory capital purposes. Such exposures fall within the trading book if: (a) the financial instruments and commodities concerned are held with the intention of trading or for hedging exposures in other financial instruments and commodities which are held with the intention of trading; (b) the financial instruments concerned are free of any restrictive covenants on tradability or the relevant exposures are able to be completely hedged; and (c) the exposures are frequently and accurately valued and actively managed.*

Q.1 Does an authorized institution only have to calculate its market risk for regulatory capital purposes for those positions it holds in its trading book?

A.1 No. The requirement to calculate the market risk of an authorized institution's positions for regulatory capital purposes applies not only to the institution's trading book positions, but also to the institution's banking book positions held in foreign exchange (including gold), exchange rate-related derivative contracts, commodities and commodity-related derivative contracts. See also section 283 (for the STM approach) and section 316 (for the IMM approach) regarding positions for which market risk must be calculated.

Q.2 What key considerations would the Monetary Authority expect an authorized institution to take into account in determining the scope of the institution's trading book for regulatory capital purposes?

A.2 The Monetary Authority would expect an authorized institution to have clearly defined policies and procedures for determining which of the institution's exposures should be included in its trading book for regulatory capital purposes. Such policies and procedures should address, at a minimum, the following considerations –

(a) the activities the institution considers to be of a trading nature (see also A.3 below) and as giving rise to exposures that would constitute part of its trading book for regulatory capital purposes;

(b) the extent to which an exposure can be marked-to-market daily (see also A.4 below and the module CA-S-10 "*Financial instrument fair value practices*" issued by the HKMA under the Supervisory Policy Manual) by reference to an active, liquid two-way market (i.e. with offer and bid prices);

(c) for an exposure that is marked-to-model, the extent to which the institution can –

  (i) identify the material risks in the exposure;
  (ii) hedge the material risks in the exposure (including the extent to which there is an active, liquid two-way market in such hedging instruments); and
  (iii) derive reliable estimates for the key assumptions and parameters used in the model;

(d) the extent to which the institution can, and is required to, generate valuations for an exposure that can be validated independently in a consistent manner;

(e) the extent to which legal restrictions or other operational requirements would impede the institution's ability to effect the immediate liquidation of an exposure;

(f) the extent to which the institution can, and is required to, actively manage the risk in an exposure within its trading operations (see also A.5 below); and

(g) the extent to which the institution may transfer exposures between the banking book and the trading book and the criteria for such transfers.

To avoid doubt, authorized institutions should note that open equity stakes in hedge funds, private equity investments, positions in a securitization warehouse and real estate holdings do not meet the definition of "trading book", owing to significant constraints on the ability of authorized institutions to liquidate these positions and value them reliably on a daily basis. This is consistent with the relevant requirement under the Basel II framework[6] (re: footnote 3 to paragraph

[6] This refers to the document entitled "*International Convergence of Capital Measurement and Capital Standards – A Revised Framework (Comprehensive Version)*" issued by the BCBS in June 2006.

16) as revised by Basel 2.5 (re: paragraph 14)[7].

Q.3 What are the criteria for determining whether an authorized institution's positions are held with the intention of trading?

A.3 In accordance with the Basel II framework, positions held by an authorized institution with the intention of trading are those held intentionally for short-term resale or with the intention of benefiting from actual or expected short-term price movements or to lock in arbitrage profits. For example, such positions may include proprietary positions, positions arising from client servicing (e.g. matched principal broking) and market making.

Q.4 How frequently should an authorized institution value its exposures if they are included in its trading book?

A.4 Generally, trading book exposures should be marked-to-market or marked-to-model on a daily basis. However, if an authorized institution can demonstrate that the value of an exposure does not change materially on a daily basis, the institution may value such exposure less frequently (e.g. on a weekly or monthly basis).

Q.5 What are the basic elements constituting active management of an authorized institution's market risk positions?

A.5 If an authorized institution is to be considered as actively managing its market risk positions, the institution should be able to demonstrate, at a minimum, that it has –

(a) a clearly documented trading strategy (which includes the expected holding horizon) for the positions, approved by the institution's board of directors or senior management;

(b) clearly defined policies and procedures for the active management of the positions, including the following –

(i) positions being managed on a trading desk;
(ii) position limits being set and monitored for appropriateness;
(iii) dealers having the autonomy to enter into, and manage, the positions within agreed limits and according to the agreed trading strategy;
(iv) positions being either marked-to-market at least daily or marked-to-model with the parameters being assessed on a daily basis unless the institution can justify valuing the positions less frequently;
(v) positions being reported to senior management as an integral part of

[7] This refers to the document entitled "*Revisions to the Basel II market risk framework*" (updated as of 31 December 2010) issued by the BCBS in February 2011.

the institution's risk management process; and

(vi) positions being actively monitored with reference to market information sources. Assessment should be made of the market liquidity of the positions or the ability to hedge the positions or the portfolio risk profiles. This includes assessing the quality and availability of market data inputs to the valuation process, the level of market turnover, the size of positions traded in the market, etc.; and

(c) clearly defined policies and procedures for monitoring the positions against the institution's trading strategy, including for the monitoring of turnover and stale positions booked in its trading book.

Subject :	**Exemption from calculation of market risk**
Section :	**22 and 23**

Background: *Under section 22(1), the Monetary Authority may, by notice in writing given to an authorized institution (other than an authorized institution which uses the IRB approach to calculate its credit risk), exempt the institution from the calculation of its market risk under section 17 if the institution demonstrates to the satisfaction of the Monetary Authority that the exemption criteria set out in section 22(1)(a) and (b) are met. Section 22(2) and (3) explains the approach for assessing an authorized institution's market risk positions against the exemption criteria, while section 22(4) sets out the requirements applicable to an authorized institution which is exempted under section 22(1), including the institution's obligation to notify the Monetary Authority of any increase in, or intention to increase, its market risk positions which may result in its failure to meet the exemption criteria.*

Section 23 empowers the Monetary Authority to revoke the exemption granted to an authorized institution under section 22(1) by reason of the institution no longer satisfying the exemption criteria, or the institution notifying the Monetary Authority under section 22(4)(b) that it has increased (or intends to increase) its market risk exposures which has caused or will cause the institution to cease to satisfy the exemption criteria.

Q.1 Why is an authorized institution which uses the IRB approach to calculate its credit risk not eligible to be exempted from the calculation of its market risk under section 22(1)?

A.1 An authorized institution which uses the IRB approach normally has a much more sophisticated business operation and complex risk profile than institutions which are expected to be exempted under section 22(1). As a result, institutions which use the IRB approach should be required to calculate their market risk for regulatory capital purposes and there is no justification for extending the exemption under section 22(1) to such institutions.

Q.2 Does an authorized institution need to submit an application to the Monetary Authority to seek exemption under section 22(1)?

A.2 No. The Monetary Authority will normally review whether each authorized institution (see A.3 below for a newly authorized institution), other than those which are exempted under section 22(1), is eligible for exemption under section 22(1) during February/March of each calendar year, based on the market risk positions reported by the institution in Part IV of the "*Return of Capital Adequacy Ratio of an Authorized Institution Incorporated in Hong Kong*" ("the CAR return") as at each of the 4 consecutive calendar quarter end dates (i.e. 31 March, 30 June, 30 September and 31 December) of the preceding calendar year (or any other dates specified by the Monetary Authority by notice in writing to the institution). As a general practice, the Monetary Authority will give a notice under section 22(1) to an authorized institution to exempt the institution from the calculation of its market risk under section 17 if its reported market risk positions are found to have met the exemption criteria set out in section 22(1)(a) and (b). The exemption notice given to the institution will remain valid until otherwise advised by the Monetary Authority. Where an authorized institution is found to no longer satisfy the above-mentioned exemption criteria, the Monetary Authority will issue a notice to the institution under section 23(1) to revoke the exemption previously granted to the institution under section 22(1).

Q.3 How will the Monetary Authority assess whether or not a newly authorized institution is entitled to an exemption under section 22(1)?

A.3 A newly authorized institution is required to report its market risk positions in the CAR return for a period covering 4 consecutive calendar quarters after its commencement of operation (or any other dates the Monetary Authority may specify under section 22(3)(b) or (c)), regardless of whether or not its market risk positions are significant. For example, if an authorized institution commences its operation in May 2007, the Monetary Authority will assess its market risk positions reported in the CAR return as at 30 June 2007, 30 September 2007, 31 December 2007 and 31 March 2008 against the exemption criteria to determine whether the institution is entitled to an exemption under section 22(1). In these circumstances, in accordance with section 22(3)(b) or (c), the Monetary Authority will notify the institution in writing of the calendar quarter end dates or other dates which he intends to use for the assessment.

Q.4 Can an authorized institution which is exempted from the calculation of market risk under section 22(1) choose to include its market risk in the calculation of its capital adequacy ratio[8]?

A.4 No. An exempted authorized institution may do this only if it has obtained the prior consent of the Monetary Authority under section 22(4)(a).

[8] This is defined as the CETI capital ratio, Tier 1 capital ratio and Total capital ratio under the Rules.

Q.5 An authorized institution's market risk positions are allowed to "sporadically" exceed 5% (but never exceed 6%) of its total on-balance sheet and off-balance sheet exposures and $50 million (but never exceed $60 million) under the exemption criteria specified in section 22(1)(a) and (b). What does the term "sporadically" mean in this context?

A.5 If an authorized institution's market risk positions have exceeded the limits specified in section 22(1)(a)(i) and (b)(i), but such excess was within the limits specified in section 22(1)(a)(ii) and (b)(ii), the Monetary Authority may regard the excess as "sporadic" if the institution can satisfy the Monetary Authority that the excess was temporary in nature and did not reflect a recurring trend.

Q.6 If an authorized institution which is exempted under section 22(1) has notified the Monetary Authority under section 22(4)(b) of an increase in, or an intention to increase, the institution's market risk positions, which might cause the exemption criteria to be breached, would the Monetary Authority instantly revoke the institution's exemption under section 23?

A.6 If an increase in an authorized institution's market risk positions has already led to the exemption criteria being breached, the Monetary Authority will revoke the institution's exemption under section 23 at the earliest opportunity. If the institution plans to increase its market risk positions, say, in 1 or 2 years' time, the Monetary Authority will monitor the increase in the institution's market risk positions on an ongoing basis, and any increase in the institution's market risk positions at a pace faster than that indicated in the institution's original plan may trigger the Monetary Authority to consider taking action under section 23.

Subject :	**IMM approach**
Section :	**18, 18A, 19 and 315 - 322**
Schedule :	**3**

Background: Under section 18(2)(a), the Monetary Authority may grant approval to an authorized institution to use the IMM approach to calculate its market risk if the relevant requirements specified in Schedule 3 are satisfied. Section 18A sets out the transitional arrangements to facilitate the migration of authorized institutions that use the IMM approach from the Basel II framework for market risk calculation to the enhanced framework under Basel 2.5. If an authorized institution using the IMM approach fails to satisfy the requirements in Schedule 3, the Monetary Authority may take one or more of the measures set out in section 19. Sections 315 to 322 set out the specific requirements relating to the use of the IMM approach for the calculation of market risk.

Q.1 Is an authorized institution allowed to use the IMM approach on a partial basis?

A.1 Yes. An authorized institution may do so subject to obtaining the Monetary

Authority's prior approval. Under section 18(5), the Monetary Authority may grant approval to an authorized institution to use the IMM approach to calculate its market risk in respect of general market risk or specific risk, or both, for such risk categories, or such local or overseas business of the institution, as specified in the approval. Any risk category or business of the institution which is not covered by the approval under section 18(5) should be subject to the STM approach for the calculation of market risk. For example, an authorized institution may have obtained the approval of the Monetary Authority to use the IMM approach to calculate its market risk in respect of general market risk for interest rate exposures only.

Q.2 Under what circumstances will an authorized institution using the IMM approach be allowed to switch to the STM approach for the calculation of market risk?

A.2 An authorized institution using the IMM approach is not allowed to switch to the STM approach for the calculation of market risk except with the Monetary Authority's prior consent under section 18(6). Such consent will only be given in exceptional circumstances, such as where the institution concerned has closed or significantly downsized its treasury operations in Hong Kong, making it no longer cost-effective for the institution to maintain internal models for the calculation of market risk.

Q.3 What approach will the Monetary Authority adopt in assessing whether or not an authorized institution complies with the requirements set out in Schedule 3 for using the IMM approach?

A.3 Authorized institutions may refer to the module CA-G-3 "*Use of Internal Models Approach to Calculate Market Risk*" issued by the HKMA under the Supervisory Policy Manual which explains how the Monetary Authority will assess whether or not an authorized institution is eligible to use the IMM approach to calculate its market risk for capital adequacy purposes. Additional guidance on specific requirements of Schedule 3 is also provided in the module.

Q.4 How does the Monetary Authority determine which of the measures specified in section 19(2) to take when an authorized institution using the IMM approach fails to satisfy the relevant requirements specified in Schedule 3?

A.4 The measures that the Monetary Authority may take under section 19 will vary depending on the circumstances of each case. In general, the Monetary Authority will have regard to the following considerations when determining the measures to be taken –

(a) the materiality of the non-compliance with Schedule 3;

(b) the estimated impact of the non-compliance on the institution's calculation of its regulatory capital for market risk;

(c) whether such non-compliance is likely to be rectified by the institution within a reasonable period of time, taking into account the institution's commitment and ability to do so; and

(d) the need for instituting measures, temporary or otherwise, to mitigate the effect of the non-compliance.

In normal circumstances, the Monetary Authority will most likely exercise his power under section 19(2)(b) to require the institution to submit a remedial plan and implement that plan within a reasonable period of time. Failure to submit and satisfactorily implement the plan will lead the Monetary Authority to re-consider the institution's eligibility to use the IMM approach. Where necessary, the Monetary Authority may also take such other measures as imposing a higher multiplication factor on the institution, requiring the institution to reduce its market risk exposures or advising the institution that he is considering exercising his power under section 97F of the Banking Ordinance to vary any capital requirement rule applicable to the institution, including by increasing all or any of the institution's CET1 capital ratio, Tier 1 capital ratio and Total capital ratio to mitigate the effect of non-compliance with Schedule 3. Where the non-compliance is serious and not likely to be rectified within a reasonable timeframe, the Monetary Authority may consider requiring the institution to use the STM approach instead of the IMM approach to calculate its market risk with immediate effect or within a short period of time.

Subject :	**Parent bank's approach**
Section :	**20 and 21**

Background: *An authorized institution may adopt the approach used by its parent bank to calculate its market risk if the institution has obtained the prior approval of the Monetary Authority under section 20(2)(a). The Monetary Authority may revoke such approval if section 21(1)(b) applies.*

Q.1 What does the term "parent bank" of an authorized institution refer to under section 20?

A.1 As defined in section 2, the parent bank of an authorized institution is any holding company of the institution which is authorized as a "bank" in the overseas jurisdiction in which the holding company is incorporated. In other words, the parent bank referred to in section 20 is confined to a holding company which is an overseas incorporated bank, be it the immediate,

intermediate or ultimate holding company of the institution.

Q.2 What criteria will the Monetary Authority use for assessing an authorized institution's application to adopt the approach used by its parent bank to calculate its market risk?

A.2 Unless an authorized institution satisfies the criteria in section 20(3)(a) and (b), the Monetary Authority shall refuse to grant it approval to use the approach used by its parent bank to calculate its market risk. The factors that the Monetary Authority will take into account in forming a view on whether or not an authorized institution satisfies these criteria include (without limitation) the following –

(a) whether or not the capital adequacy standards adopted by the relevant banking supervisory authority (being, in most cases, the home supervisor of the institution's parent bank) for calculating market risk for regulatory capital purposes are materially different from those set out in Part 8 of the Rules;

(b) whether there are any valid operational reasons for the institution to adopt the approach used by its parent bank (adoption for the purpose of regulatory capital arbitrage will not be considered a valid operational reason); and

(c) whether the relevant banking supervisory authority subscribes to the BCBS standards on the calculation of market risk for regulatory capital purposes.

Subject :	**STM approach – General**
Section :	**282 - 285**

Background: *Sections 282 to 285 cover the general requirements relating to the use of the STM approach. These requirements include, for example, which of an institution's positions are subject to the calculation of market risk and how the market risk capital charge calculated under the STM approach for each risk category is to be converted into the risk-weighted amount for market risk.*

Q.1 Why is an authorized institution not required under section 283(1) to separate the institution's foreign exchange exposures and commodity exposures into its trading book positions and banking book positions for the calculation of market risk?

A.1 Foreign exchange exposures and commodity exposures are 2 risk categories which are subject to the calculation of market risk, irrespective of whether the relevant exposures are booked in an authorized institution's trading book or

banking book (see also A.1 under the subject of "*Definition of trading book*"). The rationale for this is that the market risk in respect of an institution's foreign exchange exposures and commodity exposures (i.e. the risk of loss in the value of these exposures) arises primarily from changes in their underlying market risk factors (i.e. exchange rates and commodity prices respectively). This is the case whether such exposures are held in the institution's trading book with the intention of trading or in the institution's banking book for long-term investment purposes. By contrast, in the case of an institution's exposures in debt securities and equities held in its banking book, changes in underlying market risk factors (i.e. interest rates and equity prices respectively) will not expose the institution to market risk as the exposures will likely either be held to maturity (in the case of debt securities only) or held for long-term investment. As regards the counterparty credit risk arising from an authorized institution's trading book positions held in OTC exchange rate-related derivative contracts and OTC commodity-related derivative contracts, the institution is required separately to calculate the credit risk of these contracts, like other OTC derivative contracts booked in its trading book, under section 53(1)(b), 107(1)(b) or 141(1)(b).

Q.2 How should an authorized institution calculate the "effective notional amount" of an exposure?

A.2 An authorized institution should use the "effective notional amount" of an exposure to calculate the market risk capital charge for that exposure as required under section 284(3). The term "effective notional amount" usually refers to the notional amount of an exposure adjusted to take into account the effect of any leverage or enhancement provided by the structure of the exposure. For example, an interest rate swap with a notional amount of $1 million, but with 2 payments of $1 million each calculated at LIBOR, would have an effective notional amount of $2 million.

Q.3 Is the market risk capital charge factor used under the STM approach (re: section 287(1)(b)) for calculating the risk-weighted amount of an authorized institution's market risk exposure akin to the risk-weight of that exposure?

A.3 A market risk capital charge factor, after being multiplied by a value of 12.5*, is comparable to a risk-weight which can be applied to an exposure to arrive at the risk-weighted amount of that exposure. For example, a market risk capital charge factor of 12% equates to a risk-weight of 150%.

** The multiplier of 12.5 is a reciprocal of 8%, the minimum capital adequacy ratio required by the BCBS under the Basel II framework.*

Subject :	**STM approach – Interest rate exposures**
Section :	**286 - 290**

Background: *Sections 286 to 290 set out the specific requirements relating to the calculation of an authorized institution's market risk capital charge (for specific and general market risk) for its interest rate exposures held in the institution's trading book.*

Specific risk

Q.1 Why is an authorized institution not required under section 286(a) to calculate any market risk capital charge for specific risk in respect of its trading book positions held in interest rate derivative contracts?

A.1 This is because the changes in the value of an interest rate derivative contract are not associated with any specific factors relating to the issuer of a particular debt security or equity which give rise to specific risk. On the contrary, the changes in the value of an interest rate derivative contract depend on movements in market interest rates. The risk associated with movements in market interest rates is covered under general market risk.

Q.2 Why is an authorized institution required under section 287(3)(b) to use an ECAI issuer rating (instead of an ECAI issue specific rating) to determine the market risk capital charge factor for its trading book positions in debt securities issued by a sovereign?

A.2 It is rare to have ECAI issue specific ratings for debt securities issued by sovereigns. Most sovereigns will have ECAI issuer ratings for their debt issuance in domestic or foreign currency. It is therefore more practicable for an authorized institution to use the ECAI issuer rating of a sovereign to determine the market risk capital charge factor for its trading book positions in debt securities issued by that sovereign.

Q.3 Under what circumstances may an authorized institution assign a market risk capital charge factor of 0% to its trading book positions in debt securities issued by a sovereign?

A.3 An authorized institution may assign a market risk capital charge factor of 0% to its trading book positions in debt securities issued by a sovereign if –

(a) the ECAI issuer rating of that sovereign can be mapped to a credit quality grade of 1 as specified in Table A of Schedule 6 (re: Table 28 in section 287); or

(b) the ECAI issuer rating of that sovereign can be mapped to a credit quality grade of 2 or 3 as specified in Table A of Schedule 6, provided that those debt securities are denominated in the domestic currency of that sovereign

and funded by the institution in that currency (re: section 287(3)(f)).

General market risk

Q.4 Why is there a finer grid of time bands in Table 30 for low coupon instruments (i.e. instruments with a coupon of less than 3% per annum)?

A.4 This is because fixed rate instruments with low coupons have a higher sensitivity to changes in the yield curve than fixed rate instruments with high coupons, all other things being equal.

Q.5 In what circumstances will the Monetary Authority consider giving his consent under section 290(a) to an authorized institution to use a different methodology to calculate its positions to be included in the maturity ladder, to that prescribed in section 289?

A.5 The Monetary Authority may consider a different methodology acceptable, if an authorized institution can demonstrate to the satisfaction of the Monetary Authority that the methodology proposed by the institution is more appropriate for it to use than that specified in section 289, having regard to the risk characteristics of its interest rate exposures and the sophistication of its risk management systems. As an example, an authorized institution may be allowed to calculate its positions in a large portfolio of swap contracts by converting the payments required under the swap contracts to their present values, instead of decomposing each of the swap contracts into a combination of long and short positions. In such cases, each payment will be discounted using a zero coupon yield, and a single net figure representing the present value of these cash flows will then be entered into the appropriate time band in the maturity ladder. Other alternative methods which produce similar results could also be used.

Generally, the use of alternative methods, such as those mentioned above, will only be allowed in respect of authorized institutions with a large portfolio of swap contracts and where -

(a) the Monetary Authority is fully satisfied with the accuracy of the systems being used;

(b) the positions calculated fully reflect the sensitivity of the cash flows to interest rate changes and are entered into the appropriate time-bands; and

(c) the positions are denominated in the same currency.

Q.6 In what circumstances will the Monetary Authority consider giving his consent under section 290(b) to an authorized institution to use a different method (i.e. other than the maturity method set out in section 288) to calculate the market risk capital charge for general market risk for its

interest rate exposures?

A.6 The Monetary Authority may consider a different methodology acceptable if an authorized institution can demonstrate to the satisfaction of the Monetary Authority that the method proposed by the institution is more appropriate for it to use than the maturity method, having regard to the risk characteristics of its interest rate exposures and the sophistication of its risk management systems. For example, the Monetary Authority may allow an authorized institution to use the duration method set out in paragraph 718(vii) of the Basel II framework if the institution possesses the necessary capability to calculate the duration* and price sensitivity of each of its interest rate exposures separately.

** Duration is a measure of the average maturity of a bond's cash flows from both coupon payments and principal repayments. It is expressed in years and allows bonds with different coupons and maturities to be compared.*

Subject :	**STM approach – Equity exposures**
Section :	**291 - 294**

Background: *Sections 291 to 294 set out the specific requirements relating to the calculation of an authorized institution's market risk capital charge (for specific risk and general market risk) for its trading book positions in equities and equity-related derivative contracts.*

Q.1 Why is an authorized institution required to calculate the market risk capital charge for its trading book positions in equities and equity-related derivative contracts on an exchange-by-exchange basis?

A.1 This is because equities listed or traded on different national exchanges may have different risk profiles in terms of marketability, liquidity and concentration.

Subject :	**STM approach – Foreign exchange exposures**
Section :	**295 and 296**

Background: *Sections 295 and 296 set out the specific requirements relating to the calculation of an authorized institution's market risk capital charge (for specific risk and general market risk) for its positions in foreign exchange (including gold) and exchange rate-related derivative contracts.*

Q.1 Why is gold treated as a foreign exchange exposure rather than a commodity exposure?

A.1 This is because the price volatility of gold is more in line with that exhibited by

foreign currencies than that exhibited by commodities. Thus, most authorized institutions manage their gold positions in a manner similar to that in which they manage their foreign currency positions.

Q.2 Section 295(2) only allows an authorized institution to exclude its structural positions from the calculation of the market risk capital charge for its foreign exchange exposures, after consultation with the Monetary Authority. What is the meaning of "structural position" for this purpose and what criteria would the Monetary Authority use in assessing whether any foreign exchange positions held by an authorized institution qualify as structural positions that can be excluded for market risk calculation purposes?

A.2 "Structural position" is defined in section 295(3) as a position in foreign exchange held by an authorized institution with the intention of hedging any adverse effect of exchange rate movements on its capital adequacy ratio. When consulted by an authorized institution under section 295(2), the Monetary Authority will assess whether the following criteria (consistent with those set out in paragraph 718(xxxviii) under the Basel II framework) are met:

(a) such positions need to be of a "structural", i.e. of a non-dealing, nature. In this regard, the Monetary Authority would generally consider "structural" foreign exchange positions to be those that typically arise because of structural imbalances between assets and liabilities, are non-trading in nature and do not change rapidly. Examples of structural positions include those arising from –

(i) investment in fixed assets and premises;

(ii) equity investment in overseas subsidiaries and related companies;

(iii) endowment capital in overseas branches;

(iv) issue of capital instruments, such as subordinated debt and preference shares;

(v) booking of unremitted profits or remittance of profits from overseas branches;

(vi) an entrenched imbalance between the currency denomination of assets and liabilities; and

(vii) capital held in a currency different from that of assets;

(b) such positions (if excluded from market risk calculation) do no more than protect the institution's capital adequacy ratio. In this regard, it should be noted that a matched currency position will protect an authorized

institution against loss from movements in foreign exchange rates, but will not necessarily protect its capital adequacy ratio. Where an authorized institution has its capital denominated in its domestic currency and has a portfolio of assets and liabilities denominated in foreign currencies that are completely matched, its capital adequacy ratio will fall if the domestic currency depreciates relative to the foreign currencies. By running a short position in the domestic currency the institution can protect its capital adequacy ratio, although the position would lead to a loss if the domestic currency were to appreciate relative to the foreign currencies. Thus, any such positions deliberately taken by the institution in order to hedge partially or totally against the adverse effect of the exchange rate on its capital adequacy ratio may be considered for exclusion;

(c) any exclusion of such positions from market risk calculation will be applied consistently by the institution, with the treatment of the hedge remaining the same for the life of the assets or other items concerned.

Q.3 What is the rationale behind requiring an authorized institution to deduct under section 296(1)(a) its United States dollars ("USD") position against its Hong Kong dollars ("HKD") position from the sum of its net long or short positions in foreign exchange for the purpose of calculating the market risk capital charge for its foreign exchange exposures?

A.3 This is because the volatility of exchange rate movements between USD and HKD is insignificant due to the linked exchange rate system in Hong Kong.

Q.4 Under section 296(2)(a)(ii), an authorized institution is required to calculate its HKD position for the purpose of determining the sum of its net long or short positions in foreign exchange. How should an authorized institution calculate its HKD position?

A.4 The HKD position (being the reporting currency or base currency) of an authorized institution is the balancing position against the institution's positions in foreign currencies. The reason for calculating the HKD position is to ensure that the total amount of all net long positions for all currencies is the same as the total amount of all net short positions for all currencies for the purpose of calculating the institution's market risk capital charge for its foreign exchange exposures as required under section 296(1). For example, if the total amount of all net long positions for all foreign currencies is $100 million and the total amount of all net short positions for all foreign currencies is $40 million, the HKD position is then a net short position of $60 million.

Subject :	**STM approach – Commodity exposures**
Section :	**297 and 298**

Background: *Sections 297 and 298 set out the specific requirements relating to the calculation of an authorized institution's market risk capital charge (for specific and general market risk) for its positions in commodity and commodity-related derivative contracts.*

Q.1 Why does an authorized institution need to calculate the market risk capital charge for its net position as well as its gross position in each commodity as required under section 298?

A.1 In calculating the market risk capital charge for its commodity exposures, an authorized institution is required to provide 15% of its net position (i.e. long or short) in each commodity to cover the directional risk arising from changes in the spot price of the commodity and 3% of its gross position (i.e. long plus short) in each commodity to cover the following risks –

(a) basis risk (i.e. the risk that the relationship between the prices of similar commodities changes over time);

(b) interest rate risk (i.e. the risk of a change in the cost of carry for forward and option positions); and

(c) forward gap risk (i.e. the risk that the forward price may change for reasons other than a change in interest rates).

Subject :	**STM approach – Option exposures**
Section :	**299 - 305**

Background*: Section 299 sets out the approaches available for the calculation of an authorized institution's market risk capital charge for option exposures. Sections 300 and 301 set out the specific requirements relating to the simplified approach, and sections 302 to 305 set out the requirements relating to the more sophisticated delta-plus approach.*

Q.1 Under what circumstances can an authorized institution use the simplified approach to calculate the market risk capital charge for its option exposures?

A.1 The simplified approach can only be used by an authorized institution which either (a) only purchases option contracts or (b) purchases option contracts and only writes option contracts which are fully hedged by matched long positions in the same option contracts. As such, the simplified approach will normally only

be available to authorized institutions which do not actively trade option contracts.

Q.2 Please provide an example illustrating the calculation of the market risk capital charge for vega risk under section 305.

A.2 Assume the current volatility of the value of an underlying exposure of an option contract is 20%. A change of 25% in volatility means that the vega of the option contract is calculated on the basis of an increase in volatility of 5 percentage points from 20% to 25%. If the vega of the option contract is calculated as 1.68, i.e. a 1% increase in volatility increases the value of the option contract by 1.68, the change in volatility of 5 percentage points should increase the value of the option contract by 8.4 (1.68 x 5) which represents the market risk capital charge for vega risk for the option contract.

Q.3 In what circumstances will the Monetary Authority consider giving his consent under section 299(c) to an authorized institution to use an alternative approach to the simplified approach or the delta-plus approach, to calculate the market risk capital charge for its option exposures?

A.3 The Monetary Authority may consider a different calculation approach to be acceptable if an authorized institution can demonstrate to the satisfaction of the Monetary Authority that the approach proposed is more appropriate for calculating the market risk capital charge for its option exposures than the simplified approach or the delta-plus approach, having regard to the risk characteristics of such option exposures and the sophistication of its risk management systems. For example, the Monetary Authority may allow an authorized institution to use scenario analysis to calculate its market risk capital charge for general market risk in respect of a portfolio of option exposures if the institution demonstrates that it is capable of using simulation techniques effectively, and the requirements set out in paragraphs 718(Lxiii) to 718(Lxix) of the Basel II framework that are applicable to the "scenario approach" can be met.

[The Q&As in this section have been superseded and are no longer applicable because the relevant sections of the Rules have been repealed. Authorized institutions should refer to the module CA-S-10 "Financial instrument fair value practices" issued by the HKMA under the Supervisory Policy Manual for detailed supervisory guidance on the valuation of financial instruments measured at fair value (whether booked in the trading book or the banking book).]

Subject :	**Valuation of market risk positions**
Section :	**283(3) and (4), and 316(3) and (4)**

Background*: An authorized institution is required to value its market risk positions, whether based on a marking-to-market or marking-to-model methodology, in a prudent*

manner (including by taking into account the liquidity of the positions). This requirement applies to each authorized institution, whether it uses the STM approach (re: section 283(3)), the IMM approach (re: section 316(3)) or a combination of both. Where an authorized institution has failed to comply with this requirement, the Monetary Authority may give a notice to the institution requiring it to reduce such of its positions as specified in the notice (re: section 283(4) or 316(4)).

Q.1 What factors does the Monetary Authority expect an authorized institution to take into account in order to ensure that its market risk positions are prudently valued?

A.1 An authorized institution is expected to establish and maintain adequate systems and controls to ensure that its valuation estimates, whether based on a marking-to-market or marking-to-model methodology, are prudent and reliable. Where appropriate, the valuation estimates should take account of such factors as unearned credit spreads, close-out costs, operational risk, early termination costs, investing and funding costs, future administrative costs and model risk.

Q.2 What factors does the Monetary Authority expect an authorized institution to take into account when determining the value of a less liquid position?

A.2 The factors which an authorized institution should take into account in determining the value of a less liquid position include (without limitation) –

(a) the amount of time the institution would take to hedge out the position or the risk within the position;

(b) the average volatility of bid/offer spreads;

(c) the availability of independent market quotes (i.e. the number and identity of market makers);

(d) the average and the volatility of trading volumes;

(e) the market concentrations;

(f) the aging of positions (i.e. how long the positions have been held);

(g) the extent to which valuation relies on marking-to-model; and

(h) the impact of other model risks.

Q.3 What minimum standards should an authorized institution observe when using a marking-to-model approach to value its market risk positions?

A.3 "Marking-to-model" means an approach to valuing an exposure (or a portfolio

of exposures) where the value is benchmarked, extrapolated or calculated by a model based on a set of market data. As the use of a valuation model involves many assumptions and approximations, an additional degree of conservatism is appropriate. In assessing whether a valuation model is prudently used by an authorized institution, the Monetary Authority would expect the institution to observe the following standards –

(a) senior management should be aware of the classes of exposures within the institution's trading book which are subject to a marking-to-model approach and should understand the extent of uncertainty arising from the use of the valuation model in the reporting of the risk level and performance of the business concerned;

(b) market data inputs for the valuation model should be sourced, to the extent possible, so that they reflect market prices. The appropriateness of the market data inputs for the valuation of a particular position should be reviewed regularly;

(c) where available, generally accepted valuation methodologies for particular classes of exposures should be used as far as possible;

(d) where the model is internally developed by the institution, it should be based on appropriate assumptions which have been assessed and challenged by suitably qualified parties independent of the development process. The model should either be developed independently or approved and tested independently (for the purpose of, among other things, validating the mathematics and the assumptions used in the model and testing software implementation for the model);

(e) the institution should have a set of formal procedures to approve and keep track of any changes made to the model;

(f) responsible staff in risk management functions should be aware of the weaknesses of the model and how best to reflect those weaknesses in the valuation output;

(g) the model should be subject to periodic review to determine the accuracy of its performance (e.g. assessment of continued appropriateness of the assumptions, analysis of profit or loss by risk factors, comparison of actual close-out values to model outputs); and

(h) valuation adjustments should be made as appropriate, for example, to cover the uncertainty of model valuations.

Standardized CVA method

Q1: According to §226S(5A) of the Banking (Capital) Rules, if the eligible CVA hedge used by an authorized institution is a CDS swaption, the authorized institution may use the delta-adjusted notional amount, instead of the notional amount, of the swaption as the input to Formula 23J. Guidance is sought on the calculation of the delta-adjusted notional amount of the swaption.

A1: The use of the delta-adjusted notional amount is intended to reflect the "moneyness" of a swaption. The delta of the swaption is the ratio of the change in the swaption's price (or spread) to the change in the price (or spread) of the underlying forward CDS. The delta-adjusted notional amount is generally calculated as the product of the swaption notional amount (i.e. the notional amount of the underlying forward CDS) and the delta of the swaption.

Authorized institutions that use, or intend to use, swaptions to hedge CVA risk should be capable of deploying appropriate swaption valuation methodologies for the purposes of risk management and financial reporting. The delta of the swaption can be derived from such valuation methodologies.

Netting of repo-style transitions

Q2: Paragraph 173 of the document "International Convergence of Capital Measurement and Capital Standards - A Revised Framework (Comprehensive Version)" (Basel II) issued by the Basel Committee in June 2006 states that bilateral netting agreements covering repo-style transactions must, among other things—

(a) provide for the netting of gains and losses on transactions (<u>including the value of any collateral</u>) terminated and closed out under them so that a single net amount is owed by one party to the other; and

(b) <u>allow for the prompt liquidation or setoff of collateral upon the event of default</u>.

The definition of "valid bilateral netting agreement" in the Banking (Capital) Rules (BCR) does not specifically reference these criteria. Clarification is sought as to what requirements a netting agreement for repo-style transactions should meet in order for the netting to be recognized in the capital adequacy calculation.

A2: In order to be recognized for the purposes of capital adequacy calculation, the netting agreement for repo-style transactions (repos) should meet the requirements set out in the definition of "valid bilateral netting agreement" in BCR §2(1). In this context, for example, "mark-to-market values of the individual contracts covered

by the agreement" in paragraph (b) of the definition essentially refers to the aggregate of all outstanding obligations due on the repos as at the early termination date net of the mark-to-market values of collateral. Paragraph (b) of the definition therefore covers item (a) above.

Moreover, the collateral under the repos must be "recognized collateral" within the meaning of BCR §77 (in the case of repos booked in the banking book) or the arrangements for the provision of collateral must satisfy the applicable requirements of BCR §77 (in the case of repos booked in the trading book) (see BCR §96(2)(b)). In either case, the requirement in item (b) above is addressed by paragraph (b) of BCR §77 which requires that the legal mechanism by which the collateral is pledged or transferred ensures that the authorized institution concerned has the right to realize, or to take legal possession of, the collateral in a timely manner in the event of a default by, or the insolvency or bankruptcy of, or any other event specified in the relevant legal documentation occurring in respect of, the relevant obligor for the exposure or the custodian (if any) holding the collateral.

On-balance sheet netting

Q3: Paragraph 188 of Basel II provides that if a bank, among other things, monitors and controls its "roll-off risks", it may use the net exposure of loans and deposits as the basis for its capital adequacy calculation. Which section of the BCR covers this requirement?

A3: On-balance sheet netting can be recognized for the purposes of capital adequacy calculation if the requirements set out in the definition of "valid bilateral netting agreement" in BCR §2(1) are met. One of the requirements is that the authorized institution manages the transactions covered by the netting agreement on a net basis (see paragraph (e) of the definition). The HKMA considers the monitoring and control of roll-off risks to be part of the risk management process for managing an authorized institution's net credit exposures to counterparties under netting agreements.

Commitments eligible for a credit conversion factor of 0%

Q4: The Completion Instructions for Form MA(BS)3(IIIb) of the Return of Capital Adequacy Ratio (p.28) state that commitments to be reported in item 9a of Division B of the Form include commitments that are unconditionally cancellable without prior notice by the reporting institution other than for "force majeure" reasons. However, §71(1) Table 10 item 9(c) of the BCR does not include the "without prior notice" requirement. Clarification is sought in this regard.

A4: The HKMA considers the requirement set out in BCR §71(1) Table 10 item 9(c) that the commitments must be unconditionally cancellable already covers the "without prior notice" requirement. The HKMA is of the view that if a bank is required to give prior notice before cancelling a credit facility, the prior notice can be regarded as a condition.

Disclosure of additional information (average gross exposures)

Q5: Section 16(1) of the BDR requires an authorized institution, in addition to the disclosures it is required to make under the BDR, to include in its disclosure statement such other information that it is necessary to so include to ensure that: (a) the information contained in the statement is not false or misleading in any material respect; and (b) the operations of the institution are clearly explained. What would be an example of how this provision should work?

A5: To promote transparency and facilitate users of the disclosure statement in understanding the risk position of an authorized institution, paragraph 3.2.4 of CA-D-1 encourages authorized institutions to make more comprehensive disclosures than the minimum required in respect of the approach they use for calculation of their regulatory capital.

For instance, the required disclosures under sections 57 and 78 of the BDR relating to different classes of credit risk exposures are based on period-end figures. There may, however, be circumstances where such figures may not be genuinely representative of the risk positions of an authorized institution (e.g. where the period-end figures happen to be exceptionally large or small, or where significant fluctuations in the figures were observed during the period). To facilitate information users' understanding of the risk profile of the authorized institution, the authorized institution should follow the Basel Committee's guidance (as indicated in footnote 195 of the Basel II text) by supplementing such disclosure with meaningful average figures for the period and disclose the way in which the average figures are arrived at.