Supervisory Policy Manual

CA-G-1	Overview of Capital Adequacy Regime for Locally Incorporated Authorized Institutions	V.1 – 18.01.08

This module should be read in conjunction with the Introduction and with the Glossary, which contains an explanation of abbreviations and other terms used in this Manual. If reading on-line, click on blue underlined headings to activate hyperlinks to the relevant module.

Purpose

To set out the policy of the Hong Kong Monetary Authority (HKMA) on capital adequacy for authorized institutions (AIs) incorporated in Hong Kong and to provide an overview of the framework for the calculation of the capital adequacy ratio of those AIs in respect of their credit risk, market risk and operational risk

Classification

A statutory guideline issued by the MA under the Banking Ordinance (the Ordinance), §7(3)

Previous guidelines superseded

This is a new guideline.

Application

To all locally incorporated AIs

Structure

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1. Introduction

1.1 Terminology

1.1.1 Unless otherwise specified, abbreviations and terms used in this module follow those used in the Banking (Capital) Rules (CRs).

1.2 Background

1.2.1 Capital is important to a bank as, apart from being a permanent source of funding for business operations and growth, it provides a buffer to absorb losses and thereby reduces the risk of insolvency. The prudential regulation of banks therefore seeks to ensure that banks operate in a safe and sound manner and that they hold sufficient capital and reserves against inherent risks in their business.

1.2.2 The HKMA's policy on capital adequacy for AIs has closely followed the latest standards published by the Basel Committee on Banking Supervision (BCBS) since the BCBS published the "International Convergence of Capital Measurement and Capital Standards" in July 1988 (commonly known as "Basel I"). As from 1 January 2007, the HKMA's policy on capital adequacy for AIs is based on the revised Basel framework published by the BCBS in June 2006 (commonly known as "Basel II").

2. Approach to supervising AIs' capital adequacy

2.1 The HKMA's policy on capital adequacy for AIs consists of the following elements:

2.1.1 One of the minimum authorization criteria set out in the Seventh Schedule to the Ordinance requires the Monetary Authority (MA) to be satisfied that an institution applying for authorization presently has, and will if authorized continue to have, financial resources (whether actual or contingent) which are adequate for the nature and scale of its business. In the case of locally incorporated institutions, this criterion will mainly be satisfied by the institutions complying with the minimum capital adequacy ratio (CAR) requirement of 8% under §98 of the Ordinance. To enable the MA to take account of the risk profile of particular AIs, §101 of the Ordinance empowers the MA to raise this statutory minimum for AIs individually to not more than 16%. Any AI aggrieved by the MA's decision under §101 may appeal against that decision to the Chief Executive in Council.

2.1.2 Under paragraph 2 of the Eighth Schedule to the Ordinance, the failure of an AI to maintain adequate financial resources would provide grounds for the MA to revoke the AI's authorization. As indicated above, an AI's failure to maintain the required minimum CAR would be strongly indicative of a failure to maintain adequate financial resources and therefore would be highly likely to provide grounds for revocation. Revocation, however, is not automatic and the MA will generally look to the AI to propose an action plan for restoring its CAR to an acceptable level within a reasonable period of time. If the action plan seems reasonable and practically achievable, the MA may then serve a written notice on the AI under §100(2) of the Ordinance requiring the AI to implement the action plan (see section 11 below for details).

2.1.3 Under §99(3) and §100(5) of the Ordinance, if an AI fails to notify the MA upon its CAR falling below the statutory minimum, or contravenes any requirement contained in a notice served on it under §100(2), then every director, every chief executive and every manager of that AI commits an offence.

2.1.4 In broad terms, the CRs impose CAR requirements on an AI at two levels:

- on a solo basis, which measures the capital adequacy of an AI based on the capital strength and risk profile of the AI taking into account the combined position of its head office and branches, local and overseas;

- on a consolidated basis, which measures the capital adequacy of an AI based on its capital strength and risk profile after consolidating the assets and liabilities of such of its subsidiaries as specified by the MA for such calculation purposes.

2.1.5 In addition, it has been the practice of the HKMA to request AIs to observe a non-statutory trigger ratio above the statutory minimum CAR to serve as an early warning signal for any potential contravention of §98(1) (see para. 9.2 below for more details).

2.1.6 AIs are required to calculate their CAR in accordance with the requirements set out in the CRs made by the MA under §98A of the Ordinance. The CRs set out various alternative approaches which AIs can use to calculate their capital requirements for credit risk, market risk and operational risk. Certain of these approaches, however, can only be adopted by an AI if the AI satisfies specified criteria and has obtained the prior consent of the MA (see section 7 below for details). If an AI disagrees with a decision made by the MA in respect of the AI's application to use a particular approach, the AI may under §101B apply to the Capital Adequacy Review Tribunal for a review of that decision.

2.1.7 To ensure that AIs have adequate capital to guard against their exposure to all risks (i.e. not only those captured in the CAR calculation under the CRs), the HKMA adopts a risk-based and structured framework to set and review individual AIs' minimum capital adequacy requirements. This framework, referred to as the supervisory review process (SRP), is set out in CA-G-5 "Supervisory Review Process".

2.1.8 AIs should have an internal process for assessing their overall capital adequacy (CAAP) in relation to their risk profile and a strategy for maintaining the required level of capital. The supervisory standards expected of such CAAP are set out in CA-G-5. The HKMA evaluates an AI's CAAP and capital adequacy through the SRP, the results of which are then taken into account in determining the AI's minimum CAR.

2.1.9 AIs (unless they are subject to the de minimis exemption) are required to disclose publicly information in relation to their state of affairs, profit and loss and capital adequacy in accordance with the standards set out in the Banking (Disclosure) Rules (DRs) made by the MA under §60A of the Ordinance and CA-D-1 "Guideline on the Application of the Banking (Disclosure) Rules".

2.2 Where necessary, the capital adequacy framework is (and will continue to be) further elaborated in supplementary guidance issued by the HKMA from time to time in the form of guidelines, circular letters, supervisor's memos, Questions & Answers, etc.

2.3 It should be noted that the CAR of an AI only provides a snap-shot indication of its capital position. The minimum CAR requirement, though important in the regulatory regime of the HKMA, is not (and never has been) a substitute for a sound risk management and control environment which all AIs should have in place and which is the most effective way, apart from holding additional capital, to mitigate risks.

3. Solo capital adequacy requirements

3.1 All AIs are required to maintain a minimum CAR on a solo basis, which provides a conservative measure of each AI's stand-alone capital strength, with the capital invested in its subsidiaries and holding companies deducted from the AI's capital base.

3.2 An AI, however, may apply to the MA for approval to include any subsidiary in the calculation of its solo CAR (referred to in the CRs as a solo-consolidated basis for the calculation of CAR). Before approving such application, the MA must be satisfied that the subsidiary concerned meets the following criteria:

- the subsidiary is wholly owned by, and managed as if it were an integral part of, the AI;
- the subsidiary is wholly financed by the AI such that the subsidiary has no depositors or other external creditors except external creditors for audit fees, company secretarial services and sundry operating expenses; and
- there are no regulatory, legal or taxation constraints on the transfer of the subsidiary's capital to the AI.

4. Consolidated capital adequacy requirements

4.1 Where an AI undertakes other banking and financial business through subsidiary companies, it is normally expected to provide the necessary capital to support the latter's operations. To ensure that the AI's capital position is maintained at an adequate level taking into account its exposures to risks stemming from such subsidiaries, the CRs require the AI to maintain its CAR on a consolidated basis (i.e. a consolidated CAR based on the AI and its subsidiaries' exposures to credit, market and operational risks), in addition to a solo / solo-consolidated basis, in circumstances where the MA issues a notice under §98(2) of the Ordinance for that purpose.

4.2 When calculating its CAR on a consolidated basis, an AI is only required to include those subsidiaries which the MA has specified in the notice he issued under §98(2) for that purpose. The MA will generally only specify those subsidiaries engaging mainly in "relevant financial activities" as defined in §27(3) of the CRs.

4.3 An AI's consolidated CAR calculation excludes any subsidiaries of the AI which are securities firms or insurance firms that are subject to the regulation of the Securities and Futures Commission (SFC) or the Insurance Authority (IA), or relevant overseas authorities having similar functions to the SFC or the IA. Shareholdings of an AI in its securities and insurance subsidiaries should be deducted from the AI's capital base in its CAR calculation. Furthermore, to ensure that these subsidiaries are themselves adequately capitalized, the MA may require that any capital shortfall in these subsidiaries, if not rectified in a timely manner, be deducted from the AI's capital base.

4.4 An AI is required to deduct from its capital base its shareholdings in subsidiaries that are not required to be consolidated.

4.5 Where an AI is itself a subsidiary company within a wider group, the MA will seek to ensure that the AI's capital position is not jeopardized by adverse developments in other business activities within the group by means of his authority under §70 of the Ordinance to ensure the fitness and propriety of a holding company as a shareholder controller of the AI on a continuing basis. Specifically, the MA may after considering factors specific to each case attach a condition under §70(7) to his approval for a company to become a majority shareholder controller of an AI, such as requiring the controller to notify the MA of any matter that may significantly impair the capital adequacy of the group to which the AI belongs or the controller's ability to provide capital or liquidity support to the AI. This would cover, for instance, material losses incurred by other members of the group, significant financial exposures of the group to unrelated or connected parties, significant level of charge over assets on a group-wide aggregate basis etc.

5. Calculation of CAR

5.1 Under the CRs, AIs shall calculate their CAR as a ratio (expressed as a percentage) of the AIs' capital base to the sum of the AIs' risk-weighted amounts (RWAs) for credit risk, market risk and operational risk. Sections 6 and 7 below provide a summary of the composition of the capital base and the methodologies for calculating the RWA for each type of risk as set out in the CRs.

6. Composition of capital base

6.1 Provisions for determining an AI's capital base are included in Part 3 of the CRs.

6.2 To be recognized for inclusion in an AI's capital base for the purposes of its CAR calculation, the capital of an AI must have the following characteristics:

- the capital must be freely available to absorb the AI's losses;
- the capital must rank behind the claims of depositors and other creditors of the AI in the case of a winding-up of the AI, i.e. the holders of capital are the last to be paid out in a liquidation;
- where the capital takes the form of shares or debt

instruments:

- the shares must permit, without restrictions, the non-payment of a dividend; and

- the debt instruments must be subject to a contractual right to defer interest payments;

• the capital must be unsecured; and

• the capital must be fully paid-up, i.e. the AI should be in possession of the funds.

6.3 Capital is split into two tiers, viz., core capital and supplementary capital, by reference to the capacity of the constituents of the capital to absorb losses. In most cases, its inclusion in an AI's capital base for the purposes of calculating the AI's CAR is subject to specified conditions and/or prior supervisory approval.

6.3.1 Core capital is the highest form of capital. It must be subordinated, perpetual and non-cumulative. Ordinary shares, irredeemable non-cumulative preference shares and disclosed reserves or retained earnings, are the key elements of core capital. Subject to certain stringent specified criteria (as detailed in CA-S-6 "Instruments Eligible for Inclusion in Core Capital") and prior approval of the MA, innovative capital instruments in the form of non-cumulative preference shares issued through a special purpose vehicle of an AI can be included in core capital. These instruments, however, should not constitute more than 15% of the AI's core capital.

6.3.2 Supplementary capital includes issued and internally generated capital which, to varying degrees, falls short of the quality of core capital but nonetheless contributes to the overall strength of an AI as a going concern. The amount of supplementary capital which may be included in an AI's capital base is capped at an amount equal to the amount included as core capital. Issued supplementary capital can include two categories of instruments in terms of maturity, viz., perpetual instruments and dated instruments. The former includes perpetual subordinated debt and paid-up irredeemable cumulative preference shares. The latter covers term subordinated debt and paid-up term preference shares and their inclusion as supplementary capital is limited to 50% of core capital. The HKMA's policies on these capital instruments are set out in detail in CA-S-7 "Term Subordinated Debt and Paid-up Term Preference Shares for Inclusion in Supplementary Capital" and CA-S-8 "Perpetual Subordinated Debt and Paid-up Irredeemable Cumulative Preference Shares for Inclusion in Supplementary Capital". Internally generated supplementary capital includes reserves attributable to fair value gains arising from revaluation of land and buildings and available-for-sale securities, regulatory reserve for general banking risks and collective provisions.

6.4 In order to ensure that an AI maintains a strong capital base, an AI is required to deduct (among other things) from its capital base its intangible assets, shareholdings in group companies, exposures to connected companies and other significant investments in shares. Such deductions shall be made either from the AI's core capital in full, or 50% from core capital and 50% from supplementary capital as required by the CRs. In the latter case, where 50% of the total deductible items exceeds the total of the AI's supplementary capital, the excess amount shall be deducted from the AI's core capital.

7. Risk-weighting framework

7.1 Risk coverage

7.1.1 AIs are required to calculate their CAR for the purpose of §98(1) in accordance with the requirements set out in the CRs. The CRs set out the risk-weighting framework for calculating the RWAs for the relevant risks captured by §98(1), i.e. credit risk, market risk and operational risk, in the following parts:

Part 4 – Calculation of credit risk for non-securitization exposures: standardized (credit risk) approach (STC approach)

Part 5 – Calculation of credit risk for non-securitization exposures: basic approach (BSC approach)

Part 6 – Calculation of credit risk for non-securitization exposures: internal ratings-based approach (IRB approach)

Part 7 – Calculation of credit risk for securitization exposures

Part 8 – Calculation of market risk

Part 9 – Calculation of operational risk

7.1.2 The risk-weighting framework for credit risk (Parts 4 to 7) generally captures AIs' on- and off-balance sheet credit exposures in the banking book as well as exposures to counterparties in certain transactions booked in the trading book. The risk-weighting framework for market risk (Part 8) captures AIs' on- and off-balance sheet interest rate exposures and equity exposures booked in the trading book, as well as their foreign exchange exposures and commodity exposures booked in the banking and the trading books.

7.1.3 AIs must have policies (approved by the appropriate authority within the AIs) for determining which exposures are to be included in, or excluded from, the AIs' trading book as well as procedures to ensure compliance with these classification policies. Such policies and procedures should define the trading book in line with the following:

- a trading book consists of positions in financial instruments and commodities held either with trading intent[1] or in order to hedge other positions booked in the trading book;

- the financial instruments must be free of any restrictive covenants on their tradability, or the financial instruments and commodities must be capable of being hedged completely; and

- positions in these instruments and commodities must be actively managed and frequently and accurately valued.

7.1.4 For each type of relevant risk, the risk-weighting framework offers alternative approaches (of varying levels of sophistication) to calculate the RWA. There is, however, a "default approach" for each relevant risk that every AI must adopt unless the prior approval of the MA for the use of another approach has been obtained. In other words, the HKMA will not require or mandate any particular AI, or any type or group of AIs, to adopt the more sophisticated approaches. In considering which approaches to adopt, AIs should conduct their own feasibility study and analysis of the associated costs and benefits, having regard to the diversity and complexity of their operations.

7.1.5 The MA's approval for the use of approaches other than the default approaches is based on the minimum requirements set out in the CRs. AIs adopting a more sophisticated approach are expected to comply with these minimum requirements on an on-going basis. A return to a less sophisticated approach (e.g. from the STC approach to the BSC approach or from the IRB approach to the STC approach) will be permitted only in exceptional circumstances, subject to the prior approval of the MA.

[1] Positions held with trading intent are those held intentionally for short-term resale or with the intent of benefiting from actual or expected short-term price movements or to lock in arbitrage profits, and include, for example, proprietary positions, positions arising from client servicing (e.g. matched principal broking) and market making.

7.2 Credit risk (non-securitization exposures)

7.2.1 Three different approaches for calculating the RWA for credit risk are provided under the current framework: the STC approach as the default option, the BSC approach and the IRB approach.

7.2.2 The **STC approach** involves the calculation of credit risk using risk-weights specified in the CRs which are mainly supported by ratings assigned by external credit assessment institutions (ECAIs) recognized by the HKMA. The HKMA's policy on recognition of ECAIs for regulatory purposes is set out in the paper "Recognition of External Credit Assessment Institutions" issued in June 2006.

7.2.3 The credit exposures of AIs under the STC approach are divided between (i) classes of exposures whose risk-weights are determined by reference to ECAI ratings and (ii) classes of exposures whose risk-weights are determined by reference to the general characteristics of an exposure. The former includes sovereign exposures, public sector entity exposures, bank exposures, securities firm exposures, corporate exposures and collective investment scheme exposures, each of which has its own risk-weighting scale(s). The latter includes residential mortgage loans and regulatory retail exposures, for which the standard preferential risk-weights of 35% (for residential mortgage loans) and 75% (for regulatory retail exposures) are applied providing certain criteria are met. Other exposures are generally assigned the risk-weight of 100%. Despite the above, where an exposure is a past due exposure (i.e. overdue for more than 90 days or rescheduled), a 150% risk-weight must be assigned.

7.2.4 The **BSC approach** is essentially the OECD-based (i.e. Basel I) framework which applied to AIs incorporated in Hong Kong before the CRs came into force on 1 January 2007 modified to incorporate (among other things) certain definitional changes to bring it into line with the STC approach. Under the BSC approach, the risk-weights of exposures to sovereigns and public sector entities are mainly determined by reference to whether the country of the sovereign or public sector entity is a Tier 1 country (generally OECD countries and Hong Kong) or a Tier 2 country (countries other than Tier 1 countries). Similarly, the risk-weights of bank exposures are mainly determined by reference to whether the country in which the bank is incorporated is a Tier 1 or Tier 2 country. Residential mortgage loans are assigned a preferential risk-weight of 50% provided that certain criteria are met. Other exposures (e.g. to corporate customers) are assigned a risk-weight of 100%.

7.2.5 To use the BSC approach an AI must obtain the prior approval of the MA. The MA cannot give his approval unless the following conditions are satisfied:

- an AI must have a small (i.e. total assets of not more than HK$10 billion), simple, and straightforward business operation to be eligible to adopt the BSC approach on a permanent basis; or

- an AI must have a definite plan to implement the IRB approach to be eligible to adopt the BSC approach on a transitional basis.

7.2.6 The **IRB approach** allows AIs with prior approval of the MA to use their own estimates for some or all of the credit risk components of an exposure to determine the capital requirement for that exposure. The credit risk components of an exposure include the estimates of the probability of default (PD), loss given default (LGD), exposure at default (EAD) and effective maturity (M). There are two levels of sophistication under the IRB approach: the foundation IRB approach (FIRB) and the advanced IRB approach (AIRB). Where the IRB calculation approach for certain exposure classes differentiates between the FIRB and the AIRB, AIs are required, under the FIRB, to use a supervisory estimate instead of their own estimate for one or more of the credit risk components (see para. 7.2.7 below for more details). The estimates are then inputted into formulae prescribed in the CRs known as "risk-weight functions" which calculate the RWA of the exposure. The appropriate risk-weight function to use depends on the class to which the particular exposure belongs.

7.2.7 Under the FIRB, for exposures falling within the corporate, sovereign and bank classes, AIs use their own estimate for PD and the supervisory estimates for LGD, EAD and M as prescribed in the CRs, as inputs to the appropriate risk-weight function. Under the AIRB, by contrast, AIs use, as inputs to the risk-weight function, their own estimates for PD, LGD, EAD and M.

7.2.8 The use of the IRB approach is subject to the fulfillment of the minimum requirements set out in Schedule 2 to the CRs and requires the prior approval of the MA. Specifically, the MA must be satisfied that the applicant AI has an established effective rating system with all of the methods, processes, controls, and data collection and IT systems that support the assessment of credit risk, the assignment of internal risk ratings and the quantification of default and loss estimates. CA-G-4 "Validating Risk Rating Systems under the IRB Approaches" sets out the standards that the HKMA expects AIs' internal rating systems to meet in terms of the accuracy, consistency and reliability of their ratings and the systems of controls AIs are expected to have in place in respect of their rating systems.

7.2.9 AIs wishing to use the IRB approach should provide an implementation plan to the HKMA, specifying, among other things, the extent and timing for the roll out of the IRB approach across significant classes of exposures (or sub-classes in the case of retail exposures) and business units. To start using the IRB approach, AIs are required to ensure that at least 85% of their RWA for credit risk can be calculated using the IRB approach. Subject to the MA's prior approval, however, an AI may be permitted to roll out the IRB approach in phases in some circumstances or to exclude certain immaterial exposures from calculation under the IRB approach. The relevant criteria are set out in Part 2 of the CRs.

7.2.10 In the case of AIs that are subsidiaries of foreign banking groups, the HKMA will, where appropriate, coordinate with the home supervisors of those banking groups regarding the fulfillment of the minimum requirements for the use of the IRB approach. If such AIs plan to adopt in Hong Kong any group-wide internal rating systems or models, they will need to satisfy the MA that the relevant systems or models can adequately capture the specific risk characteristics of the AIs' exposures and that any differences in applying the minimum requirements will not have a material impact on the credit risk components estimated. Similarly, the HKMA may coordinate with the host supervisors of AIs' overseas banking subsidiaries to facilitate cross-border implementation of the approach.

7.3 Credit risk (securitization exposures)

7.3.1 Key aspects of the risk-weighting framework for securitization exposures include:

- requirements for AIs to apply the framework for determining capital requirements in respect of exposures arising from traditional and synthetic securitization transactions as defined in the CRs. Since securitization transactions may be structured in many different ways, the capital treatment of a securitization exposure in a securitization transaction must be determined on the basis of the economic substance of the transaction rather than its legal form. AIs should consult the HKMA whenever there is uncertainty about whether a given transaction should be considered a securitization transaction within the meaning of the CRs.

- the definition of "securitization exposures" to include (but not be limited to) exposures arising from the purchase or repurchase of securitization issues for investment purposes; the provision of credit protection or credit enhancement to parties to securitization transactions; the retention of one or more securitization positions; and the provision of liquidity facilities in respect of securitization transactions.

- detailed requirements with which originating AIs must comply for the credit risk of the underlying exposures in a traditional or synthetic securitization transaction to be considered as transferred in the calculation of RWA. The AIs are required to demonstrate to the MA's satisfaction that all the requirements have been met before the relevant treatment can be applied.

7.3.2 The CRs provide two approaches for AIs to use to calculate their capital requirements for their securitization exposures: the standardized (securitization) approach (STC(S) approach) and the internal-ratings based (securitization) approach (IRB(S) approach). The appropriate approach to use is determined by reference to the approach(es) AIs would be required to use to calculate the credit risk for the class(es) of exposures to which the underlying exposures in a securitization transaction belong. For example, if an AI uses the STC approach to calculate the credit risk for exposures belonging to the same class to which the underlying exposures in a securitization transaction belong, then the AI must use the STC(S) approach to calculate the credit risk for its securitization exposures in respect of that securitization transaction. The same relationship exists between the IRB approach and the IRB(S) approach.

The IRB(S) approach is further sub-divided into two calculation methodologies: the ratings-based method and supervisory formula method. The use of the latter is subject to the MA's prior approval.

7.3.3 Securitization transactions may involve rather complicated structures and terms. Therefore, it is important for an AI entering into a securitization transaction, whether as an originating or an investing AI, to have adequate policies and procedures in place for evaluating and addressing the risks arising from such transaction, and to ensure that the economic substance of the transaction is fully reflected in its risk assessment and management decisions.

7.3.4 Any AI that is a party to a securitization transaction should fully understand the risks it has assumed or retained so as to be able to determine correctly its capital requirements in relation to the transaction. In addition, an originating AI is expected to continue to monitor any risks to which it may be subject even if it has excluded the underlying exposures in a securitization transaction from the determination of its capital requirements. Such risks include the implications for capital planning where risks may return and the impact that the securitization transaction may have on the quality of the exposures retained by the AI.

7.4 The use of credit risk mitigation techniques

7.4.1 AIs may use credit risk mitigation (CRM) techniques to reduce the RWA of their credit exposures and to lower their capital requirements as a result. AIs are permitted to recognize the risk mitigating effect of certain types of collateral (e.g. cash or securities), bilateral netting agreements (both for netting of on-balance sheet exposures and netting of certain off-balance sheet exposures), guarantees and credit derivatives that are recognized under the BSC, STC and IRB approaches.

7.4.2 The use of any CRM technique is subject to the requirements for legal certainty and those relating to operational issues described under the risk-weighting framework for credit risk in the CRs.

7.5 Market risk

7.5.1 Market risk refers to the risk of losses arising from fluctuations in the value of AIs' trading book positions in debt securities, debt-related derivative contracts, interest rate derivative contracts, equity and equity-related derivative contracts, as well as the AIs' banking and trading book positions in foreign exchange (including gold), exchange rate-related derivative contracts, commodities and commodity-related derivative contracts.

7.5.2 The standardized (market risk) approach (STM approach) is the default approach which must be used by AIs for calculating the RWA for market risk, unless prior approval is obtained from the MA for the use of the internal models approach (IMM approach) or an approach used by the AIs' parent bank to calculate their market risk. This however does not prevent an AI from using a combination of these approaches for calculating its market risk where expressly permitted by the CRs. For instance, an AI may use a combination of the STM approach and the IMM approach to calculate its overall market risk if it is only allowed to use the IMM approach to calculate a part of its market risk.

7.5.3 An AI which is not using the IRB approach for the calculation of its credit risk and which has small market risk positions may be exempted by the MA from having to calculate its market risk if it can demonstrate that it satisfies the following two criteria:

- its market risk positions never exceed 5% of its total on-balance and off-balance sheet positions; and

- its market risk positions never exceed HK$50 million.

7.5.4 Under the **STM approach**, market risk is calculated by applying standard risk-weights specific to each category of exposures (e.g. interest rate, equity, foreign exchange and commodity) and financial instruments (e.g. options, futures and swaps) held by AIs.

7.5.5 The **IMM approach** allows AIs, with the prior approval of the MA, to use their own internal models to calculate market risk. The MA may only grant approval to an AI to use the IMM approach if the AI satisfies the minimum requirements to Schedule 3 of the CRs. Detailed guidance for the use of the IMM approach is provided in CA-G-3 "Use of Internal Models Approach to Calculate Market Risk".

7.5.6 If an AI has a foreign parent bank, and the latter has adopted an approach to calculate the market risk of the group which differs from the above approaches, then the AI may adopt that approach to calculate its market risk with the prior approval of the MA. The MA may only grant such approval if the AI demonstrates to the MA's satisfaction that using that approach will not materially prejudice the calculation of the AI's capital requirement for market risk and, in the opinion of the MA, the parent bank is adequately supervised by its home supervisors in respect of the calculation of market risk.

7.6 Operational risk

7.6.1 The current framework offers three approaches for calculating an AI's operational risk capital charge (which is then multiplied by a factor of 12.5 to arrive at the RWA for operational risk): the basic indicator approach (BIA approach) as the default approach, the standardized (operational risk) approach (STO approach) and the alternative standardized approach (ASA approach). Gross income is used as a broad indicator for the scale of an AI's operational risk exposure.

7.6.2 Under the **BIA approach**, AIs multiply their annual gross income for each of the last three years by a fixed capital charge factor of 15% to obtain an annual capital charge for each of these years. Broadly, the AIs' capital charge for operational risk is the average of these annual capital charges over that three-year period. There are no specific criteria for the use of the BIA approach, although AIs using this approach are expected to comply with OR-1 "Operational Risk Management".

7.6.3 Under the **STO approach**, AIs divide their activities into eight business lines, namely corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services, asset management and retail brokerage. A capital charge for each business line is calculated for each of the last three years by multiplying the annual gross income for each business line by the capital charge factor (ranging from 12% to 18%) assigned to it in the CRs. Broadly, AIs calculate their capital charge for operational risk as the average of the annual aggregate capital charges for all business lines over the last three years. The use of the STO approach is subject to the MA's prior approval and the fulfillment of specific operational risk management criteria set out in the CRs and OR-1.

7.6.4 The **ASA approach** aims to provide a more risk-sensitive approach to calculating operational risk for AIs whose main activities are related to retail and commercial banking. The ASA approach is broadly the same as the STO approach apart from the calculation of the capital charges for the business lines of retail banking and commercial banking. In broad terms, in the case of these two business lines, average figures for loans and advances over the last three years, multiplied by a factor of 0.035, replace gross income as the indicator of exposure to operational risk. As with the STO approach, the use of the ASA approach requires the prior approval of the MA.

8. Assessment of overall capital adequacy

8.1 AIs' CAAP (being their own internal process for assessing their overall capital adequacy in relation to their risk profile – see para. 2.1 above) and their strategy for maintaining the required level of capital should fit the AIs' individual circumstances and needs, having regard to the risk profile and level of sophistication of their operations. The CAAP should be risk-based, forward-looking and form an integral part of the AIs' management/decision making process. The supervisory standards expected of a CAAP are set out in section 4 of CA-G-5 "Supervisory Review Process".

8.2 The HKMA will review AIs' capital adequacy assessment and determine whether the resulting capital position is adequate. The HKMA expects AIs to develop their CAAPs over time and will monitor AIs' progress on an ongoing basis. The HKMA recognizes that some AIs may need more time and resources to develop and enhance their capital planning and assessment practices to comply with the prescribed CAAP standards. Mindful that it may not be cost-effective for AIs with small and simple operations to develop elaborate systems for conducting the CAAP, the HKMA does not expect AIs which have been approved by the MA to adopt the BSC approach permanently to fully satisfy the prescribed CAAP standards. Nevertheless, the HKMA will, in setting the minimum CAR of individual AIs, take into account the compliance of their capital management practices with the supervisory standards.

8.3 The process conducted by the HKMA for the purposes of setting and reviewing the minimum CAR requirement under §98(1) of the Ordinance is referred to as the SRP. Details of the SRP are included in CA-G-5 "Supervisory Review Process". The HKMA conducts the SRP as part of its risk-based supervisory process (see SA-1 "Risk-based Supervisory Approach") for the ongoing monitoring of the adequacy of AIs' capital to support the risks inherent in the AIs' business activities.

8.4 The SRP takes the form of a comprehensive and structured approach to assessing the adequacy of AIs' capital in respect of the eight risks inherent in the AIs' business and operations (i.e. credit, market, operational (including legal), interest rate, liquidity, strategic and reputation risks) and the adequacy of the AIs' systems and controls relating to the eight types of inherent risk. The scope and extent of the application of the assessment standards and criteria under the SRP will be commensurate with the nature, size and complexity of the business of individual AIs. The assessment will also have regard to the results of stress tests and scenario analyses conducted by individual AIs and the HKMA on a sector-wide basis.

9. Determination of minimum CAR

9.1 Under §98(1) of the Ordinance, the minimum CAR an AI is required to maintain is 8%. However, the MA may (under §101(1)) following prior consultation with an AI, increase the minimum CAR that the AI is required to maintain under §98(1) to not more than 16%. The HKMA will use the assessment results produced by the SRP carried out in respect of an AI, to consider whether the minimum CAR which that AI is required to maintain on a continuing basis under §98(1) of the Ordinance should be increased and, if so, by how much.

9.2 In addition to the minimum CAR requirement, it is the practice of the HKMA to request each AI to observe a non-statutory trigger ratio above the minimum CAR for that AI. The trigger ratio of an AI is set taking into account the vulnerability of the AI to the key factors that determine its minimum CAR. These factors may include quality and volatility of earnings, ability to raise capital and quality of the capital planning process. The trigger ratio is intended to provide a buffer to reduce the risk of breaches of the AI's minimum CAR and to provide an early warning signal of deterioration in capital adequacy. It is noted that, for capital planning purposes, individual AIs may adopt an internal policy of maintaining an actual CAR at an appropriate level above the trigger ratio having regard to their own circumstances such as the ability to raise additional capital through different channels in case of need. The degree of any cushioning provided by such a policy will be taken into account when the HKMA sets the trigger ratio for individual AIs. In any case, an AI is expected to discuss with the HKMA when it reasonably anticipates that its CAR will fall to the trigger ratio or below in the foreseeable future. These include cases where there will be a material reduction of CAR caused by anticipated losses in loans or operations, increase in risk weighted assets, or material investments in entities requiring deduction from the capital base.

9.3 If the MA decides to vary the minimum CAR which an AI is required to maintain under §98(1) of the Ordinance above 8% and the AI objects to this variation, the AI may make written representations to the MA under the process set out in subsection 2.7 of CA-G-5 "Supervisory Review Process". If the MA maintains his decision after hearing the AI's representations and varies the AI's minimum CAR under §101(1) of the Ordinance and the AI is still aggrieved by the MA's decision, it may under §132A(1)(h) of the Ordinance appeal to the Chief Executive in Council against the MA's decision.

10. Monitoring compliance with minimum CAR

10.1 The HKMA will endeavour to monitor and promote an AI's compliance with its minimum CAR on a continuing basis by

- setting a trigger ratio and requiring remedial actions to be taken by the AI in the event that the AI's CAR falls below the trigger ratio as mentioned above;

- reviewing information reported in the Return of Capital Adequacy Ratio (MA(BS)3) (CAR return); and

- commissioning external auditors' reports, normally once a year, under §63(3A) of the Ordinance on the adequacy of the AI's systems of control over the compilation of banking returns and over the AI's compliance with the statutory requirements, and under §63(3) on whether the CAR return submitted to the MA by the AI has been correctly compiled in all material respects from the AI's books and records.

10.2 In addition, where as a result of its on-going supervisory process the HKMA has material concerns about the ability of an AI to compute its CAR correctly in accordance with the CRs or about an AI's ability to submit its CAR return to the HKMA in a timely fashion, the MA may require the AI to submit an external auditors' report under §59(2) of the Ordinance in order to identify specific system and control weaknesses through a more in depth review of such systems and controls by the auditors.

11. Consequences of contraventions

11.1 Breach of the statutory minimum CAR requirement is a serious matter and for the reasons described in section 2 above will almost certainly be a ground for revocation. As required under §99 of the Ordinance, any breach of the requirement must be notified to the MA immediately it becomes known. The MA will, pursuant to §100(1) of the Ordinance, enter into discussions with the AI to determine what remedial actions need to be taken for the AI to comply with the statutory minimum requirement. The MA may then require the AI to take such remedial action by written notice served under §100(2). In general, during his discussions with the AI, the MA will look to the AI to propose an action plan for restoring its CAR to an acceptable level within a reasonable period of time. In all likelihood, if the MA considers the action plan proposed by the AI to be reasonable and practically achievable, he will notify the AI under §100(2) to implement the plan by way of remedial action.

11.2 An AI's failure to notify the MA of any breach of the statutory minimum CAR requirement, or an AI's non-compliance with any remedial action specified in the notice issued under §100(2), will result in every director, chief executive and manager of the AI committing an offence that may render them liable to a fine and imprisonment (§99(3) and §100(5) of the Ordinance).

12. Financial disclosures

12.1 Disclosure requirements are applied to AIs to complement the minimum CAR requirements and the SRP. Through this mandatory public disclosure framework, the HKMA aims to leverage market discipline and encourage AIs to operate in a safe and sound manner. The framework has been designed to ensure that relevant and timely information is available to the general public, the investor community and market professionals.

12.2 The public disclosure framework with which AIs are required to comply is set out in the DRs made by the MA under §60A of the Ordinance. To assist AIs with the application of the DRs, the DRs are supplemented by guidance issued by the HKMA in CA-D-1 "Guideline on the Application of the Banking (Disclosure) Rules" and the "Questions & Answers" on the DRs. Illustrative examples and sample disclosure templates are included in the Guideline to assist AIs in complying with specific requirements of the DRs.

12.3 The DRs, which are closely in line with international best practice standards (e.g. the recommendations of the BCBS and the International Accounting and Financial Reporting Standards), represent a set of disclosure requirements that should improve market participants' ability to assess AIs' capital structures, risk exposures, risk-management processes and overall capital adequacy.

12.4 The DRs recognize that AIs have varying levels of sophistication and risk exposures. Different levels of disclosure therefore apply to AIs using the BSC approach, the STC approach and the IRB approach. In addition, there are de minimis exemptions for AIs which are smaller in terms of asset and deposit size, although the HKMA encourages such AIs to comply with the DRs to the greatest extent possible.

12.5 The DRs require AIs to have in place a formal, board approved disclosure policy which addresses the AIs' approach to determining what disclosures they are required to make and the internal controls they have in place over the process for making such disclosures (e.g. the verification process).

12.6 Compliance with the DRs is a statutory requirement under §60A of the Ordinance. AIs are required to declare their compliance with the DRs in the Return of Certificate of Compliance with the Banking Ordinance (MA(BS)1F) which is submitted as part of the information comprising the quarterly banking return. The HKMA will monitor AIs' compliance with the DRs through review of the return and by requiring external auditors' reports on the correct compilation of the return under §63(3) and §63(3A) of the Ordinance.

12.7 §60A(4) of the Ordinance makes it an offence on the part of every director, every chief executive and every manager of an AI if the AI fails to comply with the DRs. Upon conviction, such persons will be liable to a fine.

13. Further developments

13.1 To ensure that the capital adequacy framework in Hong Kong remains up-to-date and appropriate, the HKMA will continue to monitor relevant developments in international standards and industry practices. In particular, the HKMA will consider in due course the implementation of more advanced model-based approaches to the calculation of risk not covered in the current framework, such as those relating to the measurement of operational risk and counterparty credit risk, when there is sufficient demand from the banking industry or when more implementation experience in respect of these approaches has been gained internationally. The HKMA will also monitor closely capital adequacy standards developed by the BCBS in related or other areas (e.g. definition of capital) and where appropriate, incorporate them into the current framework.
