HONG KONG MONETARY AUTHORITY
香港金融管理局

Supervisory Policy Manual

CA-G-1	Overview of Capital Adequacy Regime for Locally Incorporated Authorized Institutions	V.2 – draft for consultation

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 HKMA's policy on capital adequacy for AIs incorporated in Hong Kong and to provide an overview of the framework for the calculation of such AIs' capital adequacy ratio.

Classification

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

Previous guidelines superseded

CA-G-1 "Overview of Capital Adequacy Regime for Locally Incorporated Authorized Institutions" (V.1) dated 18.01.08

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 (BCR).

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. In so doing, capital not only reduces the risk of insolvency of a bank but can also enable the bank to continue to conduct its credit intermediation activities in times of stress, thereby reducing any propensity for the banking sector to amplify the effects of a financial and economic downturn. The prudential regulation of banks therefore seeks to ensure that banks hold sufficient capital (and reserves) against the inherent risks in their business.

1.2.2 The HKMA's policy on capital adequacy closely reflects the latest regulatory capital standards published by the Basel Committee on Banking Supervision (BCBS).

As from 1 January 2013, the HKMA commenced implementation of the Basel III capital standards in Hong Kong in accordance with the transitional arrangements[1] specified by the BCBS. Sections 2 to 12 of this module present an overview of the capital standards under Basel III that are currently effective in Hong Kong. Section 13 describes those, namely the capital conservation buffer; the countercyclical capital

[1] The transitional arrangements provide for the phase-in of the various components of Basel III from 1 January 2013 to 1 January 2019 to help ensure that the banking sector can meet the higher capital standards under Basel III, while still supporting lending to the economy. Please see sections 2 and 13 below for details.

buffer; the higher loss absorbency capital requirement (for AIs considered to be "systemically important"); and the leverage ratio, that are scheduled to be implemented subsequently.

2. Approach to supervising AIs' capital adequacy

2.1 The HKMA's regulatory framework for the capital adequacy of AIs incorporated in Hong Kong consists of the following elements:

2.1.1 The minimum criteria for authorization set out in the Seventh Schedule to the Ordinance require the 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 operations (see paragraph 6 of the Seventh Schedule to the Ordinance). In the case of locally incorporated AIs, this criterion will mainly be satisfied by the institutions complying with the minimum capital adequacy ratio (CAR) requirements applicable to them under the Ordinance and the BCR made pursuant to the Ordinance (i.e. the minimum CAR set out in §3A and §3B of the BCR as varied under §97(F) of the Ordinance (see para. 2.1.3 below)).

2.1.2 The CAR as defined in §3 of the BCR is a collective term referring to the three risk-weighted capital ratios, namely the -

(a) Common Equity Tier 1 (CET1) capital ratio;

(b) Tier 1 capital ratio; and

(c) Total capital ratio,

prescribed under Basel III. The minimum CAR, in terms of the three ratios, applicable to AIs in 2013 and

2014, and from 2015, as prescribed in §3A and §3B of the BCR respectively (and reflecting the BCBS transitional arrangements) is summarized below:

Table 1

	By 1 January		
	2013	**2014**	**2015**
CET1 capital ratio	3.5%	4%	4.5%
Tier 1 capital ratio	4.5%	5.5%	6%
Total capital ratio	8%	8%	8%

2.1.3 To enable the MA to take account of the risks associated with particular AIs, §97F(1) of the Ordinance empowers the MA to vary any capital requirement rule (including the minimum CAR applicable to an individual AI under §3A and §3B of the BCR) if he is satisfied, on reasonable grounds, that it is prudent to make the variation. If the MA proposes to vary any of the minimum CAR applicable to an AI, the AI will be given an opportunity to make representations under §97F(3) of the Ordinance. In addition, any AI aggrieved by the MA's decision under §97F(1) may appeal against that decision to the Banking Review Tribunal (BRT) under §101B(1) of the Ordinance.

2.1.4 Under paragraph 2 of the Eighth Schedule to the Ordinance, the failure of an AI incorporated in Hong Kong to meet the criteria set out in paragraph 6 of the Seventh Schedule to the Ordinance, that is, to maintain adequate financial resources and to comply with the BCR, would provide grounds for the MA to revoke the AI's authorization. Revocation, however, is not automatic and the MA will discuss remedial action with the AI (§97E(1) of the Ordinance) and will likely require the AI to submit a remediation plan. If the plan meets with the MA's approval and seems

reasonable and practically achievable, the MA may then serve a written notice on the AI under §97E(2) of the Ordinance requiring the AI to implement the remediation plan. Under §97E(4) of the Ordinance, if an AI fails to comply with any requirement imposed in a notice served on it under §97E(2) of the Ordinance, then every director, every chief executive and every manager of that AI commits an offence (see section 11 below for details).

2.1.5 Under §97D(3) of the Ordinance, if an AI fails to immediately notify the MA regarding a matter prescribed in the BCR (such as §3D of the BCR which requires an AI to immediately notify the MA of its failure to comply with any of the minimum CAR set out in §3A or §3B of the BCR or as varied by the MA under §97F(1) of the Ordinance), then every director, every chief executive and every manager of that AI commits an offence.

2.1.6 In broad terms, the BCR 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.

2.1.7 AIs are required to calculate their CAR in accordance with the methodologies and requirements set out in the BCR. The BCR 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 approval of the MA (see section 7 below for details). The approval may be granted subject to any conditions that the MA thinks proper to attach to the approval in any particular case. If an AI disagrees with a decision made by the MA in respect of the AI's application to use a particular approach (including a decision to attach conditions to the approval of the application granted by the MA), the AI may under §101B(1) of the Ordinance apply to the BRT for a review of that decision.

2.1.8 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 BCR which focuses on the Basel "Pillar 1" risks – i.e. credit risk, market risk and operational risk), the HKMA adopts a risk-based and structured framework to set and review individual AIs' minimum CAR requirements. This framework, which reflects Pillar 2 of the Basel regulatory capital framework and is referred to as the supervisory review process (SRP), is set out in CA-G-5 "Supervisory Review Process".

2.1.9 AIs should have an internal capital adequacy assessment process (CAAP) for assessing their overall capital adequacy in relation to their risk profile. They should also have a strategy for maintaining the required level of capital. The supervisory standards expected of AIs' 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 requirements. If the results of the SRP indicate that a Pillar 2 "capital add-on" is required over and above the minimum CAR prescribed in §3A and §3B of the BCR in order to reflect the level of risk associated with an AI,

the MA will issue a notice under §97(F) of the Ordinance to that AI varying that minimum CAR as prescribed in §3A or §3B as the case may be.

2.1.10 Furthermore, it has been the HKMA's practice to require AIs to monitor and observe non-statutory trigger ratios above their minimum CAR requirements (Pillar 1 and Pillar 2, i.e. §3A or §3B of the BCR as varied under §97(F) of the Ordinance) which serve as an early warning signal for potential contravention of the requirements (See para. 9.3 and 9.4 below for more details).

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

2.2 Where necessary, further elaboration on the capital adequacy framework is (and will continue to be) provided in supplementary guidance issued by the HKMA from time to time in the form of codes of practice, guidelines, circular letters, supervisor's memos, Frequently Asked Questions, etc.

2.3 It should however be borne in mind that the CAR of an AI only provides a snap-shot indication of the AI's capital position. The minimum CAR requirements, though an important element in the HKMA's regulatory regime, are not (and never have been) substitutes for a sound risk management and control environment which all AIs should have in place and which is the most effective way to mitigate risks.

3. Solo capital adequacy requirements

3.1. In order to provide a conservative measure of each AI's stand-alone capital strength, all AIs are required to comply with the minimum CAR requirements on a solo basis. To arrive at the capital position of an AI on a solo basis, the capital investments of the AI in "financial sector entities" (as defined in the BCR) are subject to the deduction requirements under the BCR. These entities include:

- those that are members of the AI's consolidation group; and
- those that are not members of the AI's consolidation group, in which case some exemption is allowed for certain holdings provided the amounts are within the specified "thresholds", generally by reference to 10% of the CET1 capital of the AI, calculated in accordance with Schedule 4F (where the holdings represent "insignificant capital investments"[2], in which case the exemption will be available to holdings in the form of any of CET1, Additional Tier 1 or Tier 2 capital instruments issued by the entities) or Schedule 4G (where the holdings represent "significant capital investments"[3], in which case the exemption will only be available to holdings in the form of CET1 capital instruments issued by the entities) of the BCR.

3.2. An AI may, however, apply to the MA for approval to include any subsidiary in the calculation of its solo CAR (referred to in the BCR 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

[2] An "insignificant capital investment" refers to an investment by an AI in a capital instrument issued by an entity (other than an affiliate of the AI) of which the AI owns not more than 10% of the issued ordinary share capital.

[3] A "significant capital investment" refers to an investment by an AI in a capital instrument issued by (a) an affiliate of the AI or (b) any other entity, of which the AI owns more than 10% of the issued ordinary share capital.

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 MA will generally require the AI to comply with its minimum CAR requirements on a consolidated basis, in addition to a solo / solo-consolidated basis, by issuing a notice under §3C(1) of the BCR to the AI.

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 issued under §3C(1) of the BCR. The MA will generally only specify those subsidiaries engaging mainly in "relevant financial activities" as defined in §27(3) of the BCR.

4.3 An AI's calculation of its consolidated CAR 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 of relevant overseas authorities having similar functions to the SFC or the IA. An AI's capital investments in these securities and insurance subsidiaries should in general (but see para. 4.4 below) be deducted from the AI's capital base in calculating its CAR. 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 CET1 capital.

4.4 In calculating its CAR on a consolidated basis, an AI is required to deduct from its capital base its capital investments in any financial sector entities (including those that are securities and insurance firms) that are not the subject of consolidation under §3C of the BCR. As mentioned in subsection 3.1, a limited exemption from deduction is available to the extent of the thresholds permitted in the BCR and calculated under Schedules 4F and 4G of the BCR.

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 majority 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 matters 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. These matters 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. In addition, if the majority shareholder controller is incorporated outside Hong Kong or the majority shareholder controller is a locally incorporated company that is neither a financial holding company[4] nor a subsidiary of a financial holding company, the majority shareholder controller will generally be asked to establish a locally incorporated intermediate holding company whose sole purpose will be to hold the shares in the AI concerned. The intermediate holding company will itself be made subject to certain conditions under §70(7) of the Ordinance, in addition to the conditions imposed on the majority shareholder controller and any ultimate holding company (if applicable). The conditions will likely cover, among

[4] "Financial holding company" means a holding company that controls a group of financial institutions engaged in financial activities such as insurance, banking and securities dealing.

other things, requirements on capital adequacy.

5. Calculation of CAR

5.1 Under the BCR, an AI must calculate each of the capital ratios referred to in section 2.1.2 above as a ratio (expressed as a percentage) of the corresponding tier of the AI's capital base (see section 6) to the sum of its risk-weighted amounts (RWAs) for credit risk, market risk and operational risk. Sections 6 and 7 below provide a summary, respectively, of the composition of each tier of the capital base and of the methodologies for calculating the RWA for each type of risk as set out in the BCR.

6. Composition of capital base

6.1 General

6.1.1 Provisions for determining an AI's capital base are included in Part 3 of the BCR. In summary, an AI is required to categorise its capital base into three tiers, viz., CET1 capital, Additional Tier 1 (AT1) capital and Tier 2 capital, by reference to the capacity of the constituents of capital to absorb losses. The sum of CET1 capital and AT1 capital is the AI's Tier 1 capital. An AI's capital base is the sum of its Tier 1 capital and Tier 2 capital.

6.1.2 The inclusion of a capital instrument into an AI's capital base, for the purposes of calculating the AI's CAR, is subject to the instrument meeting (and strictly complying with) all of the qualifying criteria specified in Schedule 4A, 4B or 4C to the BCR for the relevant tier of capital into which the instrument is proposed to be included. In order to ensure a proposed capital instrument can be included within an AI's AT1 or Tier 2 regulatory capital, the AI is required to undertake a detailed self-assessment to review and document the instrument's compliance with each of the qualifying

criteria for the relevant tier of capital. As part of the self-assessment, the AI should obtain a sufficiently independent legal opinion (preferably from an external legal firm) to ensure compliance of the proposed instrument from a legal perspective.

6.1.3 As a standing practice, an AI proposing to issue an instrument for inclusion in AT1 or Tier 2 regulatory capital is expected, when in doubt, to discuss with the HKMA beforehand whether the instrument complies with the eligibility criteria for inclusion in the relevant tier of regulatory capital (e.g. where the instrument has novel features not included in instruments previously issued by the AI which were accepted as eligible for inclusion as regulatory capital). For this purpose, the AI is expected to submit to the HKMA the relevant supporting documents (including a summary of the main features of, and a draft term sheet for, the instrument; together with the AI's self-assessment and confirmation (by its Chief Financial Officer or another person with an equivalent role and seniority within the institution) of the institution's compliance with Schedule 4B or 4C as the case may be) for the HKMA's review. AIs should note that the process for ensuring the strict compliance of an instrument with the criteria for recognition as regulatory capital, as specified in the BCRs, is particularly important during the initial phase-in of Basel III, when there may be little in the way of precedent to guide the interpretation and the drafting of certain of the terms and conditions of the new style instruments to ensure that they comply with the new standards.

6.2 Tier 1 capital

6.2.1 Tier 1 capital is intended to absorb losses on a going concern basis. As noted above, Tier 1 capital consists of CET1 capital and AT1 capital.

6.2.2 Generally regarded as having the highest loss absorption capacity, CET1 capital includes capital instruments that meet the qualifying criteria set out in Schedule 4A to the BCR (for instance, the instrument should be perpetual and represent the most subordinated claim in the event of liquidation). In the case of AIs that are joint-stock companies (which is the case for all locally incorporated AIs as at the date of issuance of this module), CET1 capital instruments must be ordinary shares. Other elements of CET1 capital include (i) share premium resulting from the issue of CET1 capital instruments[5], (ii) retained earnings and other disclosed reserves (subject to certain exclusions), and (iii) in the case of a consolidation group. the amount, calculated in accordance with Schedule 4D to the BCR, of minority interests arising from CET1 capital instruments issued by consolidated bank subsidiaries of the AI and held by third parties (to the extent that the amount to be included does not represent "surplus CET1 capital" in excess of the capital requirements applicable to the subsidiaries as specified in Schedule 4D).

6.2.3 AT1 capital is Tier 1 capital which does not meet the eligibility criteria of CET1 capital but is nevertheless able to absorb the losses of an AI on a going concern basis. It includes capital instruments issued by an AI that meet the qualifying criteria set out in Schedule 4B to the BCR (for instance, the instrument should be subordinated, perpetual, with no incentives to redeem and only redeemable by the issuer after a minimum period of 5 years from the date of issue). Other elements of AT1 capital include share premium resulting from the issue of AT1 capital instruments, and, in the case of a consolidation group, the amount,

[5] With the "no par" regime of the new Companies Ordinance coming into effect on 3 March 2014, share premium will be accounted for as a separate item for CAR calculation only in respect of any AI with subsidiaries incorporated in overseas jurisdictions which have not implemented a "no par" regime.

calculated in accordance with Schedule 4D to the BCR, of minority interests arising from capital instruments issued by consolidated bank subsidiaries of the AI and held by third parties (to the extent that the amount to be included does not represent "surplus Tier 1 capital" in excess of the capital requirements applicable to the subsidiaries as specified in Schedule 4D, net of the amount of minority interests that has already been recognized in CET1 capital).

6.2.4 Furthermore, to ensure the loss absorption ability of AT1 capital, Schedule 4B to the BCR requires AT1 capital instruments, among other things, to be:

(a) capable of being converted into ordinary shares or written down at the "point of non-viability" (see subsection 6.4 below for more details) and,

(b) capable, in the case of those AT1 instruments classified as liabilities for accounting purposes, of being converted into ordinary shares or written down when an AI's CET1 capital ratio reaches a level at or below 5.125% (or any higher level specified in the terms and conditions of a given AT1 instrument).

6.3 Tier 2 capital

6.3.1 Tier 2 capital is intended to absorb losses on a gone concern basis, that is when an AI is insolvent and no longer able to continue its activities as a going concern. It includes an AI's capital instruments that meet the qualifying criteria set out in Schedule 4C to the BCR (for instance, the instrument should be subordinated to depositors and general creditors and should have a minimum original maturity of at least 5 years). Other elements of Tier 2 capital include: (i) share premium resulting from the issue of Tier 2 capital instruments, and in the case of a consolidation group, the amount, calculated in accordance with

Schedule 4D to the BCR, of minority interests arising from Tier 2 capital instruments issued by consolidated bank subsidiaries of the AI and held by third parties (to the extent that the amount to be included does not represent "surplus Total capital" in excess of the capital requirements applicable to the subsidiaries as specified in Schedule 4D, net of the amount of minority interests that has already been recognized in Tier 1 capital), (ii) reserves attributable to fair value gains arising from revaluation of an AI's holdings of land and buildings[6] (held for own-use or investment) and (iii) regulatory reserves for general banking risks and collective provisions.

6.3.2 Similar to the qualifying criteria for AT1 capital instruments, the qualifying criteria for Tier 2 capital instruments set out in Schedule 4C of the BCR include a criterion that a Tier 2 instrument should be capable of being converted into ordinary shares or written down at the "point of non-viability" (see subsection 6.4 below for more details).

6.4 Point of non-viability

6.4.1 In order to be eligible for inclusion in AT1 capital or Tier 2 capital, a capital instrument issued by an AI should have the ability to absorb losses at the "point of non-viability". This means that the instrument must have contractual terms allowing it to be written-off or converted into ordinary shares in the event that the AI is unable to support itself without such write-off or conversion (i.e. on the occurrence of a trigger event). The trigger event is the earlier of the MA notifying an AI in writing that (i) a write-off or conversion or (ii) a public sector injection of capital or equivalent support, is necessary, without which the AI would become non-viable. In determining whether an AI has

[6] The amount of fair value gains arising from revaluation of land and buildings included in an AI's Tier 2 capital must not exceed 45% of such fair value gains.

reached the "point of non-viability", the MA will consider various factors, including primarily the level of the AI's regulatory capital and liquidity resources (whether the AI is able to meet its obligations as they fall due and is able to obtain funding from its shareholder controllers or other sources and whether the AI is sustaining, or is likely to imminently sustain, significant capital losses such that its capital base is being/will be severely eroded in a manner detrimental to the interests of its depositors and creditors and, in either case, whether there is a realistic prospect of the AI being able to take swift remedial action to raise funding or recapitalize to a level sufficient to restore viability). Inevitably this will be affected by the degree of confidence in the AI demonstrated by depositors, creditors and the public generally at the relevant time.

6.5 Regulatory deductions

6.5.1 In order to ensure that an AI maintains a strong capital base, an AI is required to deduct from its capital base certain of its balance sheet items which can be broadly categorized as -

(a) contingent items – that ultimately may not provide the AI with loss absorbing capital in stress situations (e.g. goodwill and other intangible assets);

(b) double gearing items – that may inflate regulatory capital within the financial system by virtue of their "double-counting effect", such as an investment in the AI's own capital instruments; an investment in the capital instruments of another financial sector entity that has reciprocal cross holdings with the AI; or an investment in the capital instruments of other financial sector entities that are not members of the AI's consolidation group (as mentioned in subsection

3.1, an exemption from deduction is allowed in respect of this last category of items up to certain specified thresholds under the BCR);

(c) other capital investments in connected commercial companies (exemption from deduction for investments in any such company is allowed up to the threshold of 15% of the capital base of an AI as specified under the BCR); and

(d) "re-characterised" items – except where incurred in the ordinary course of an AI's business, credit exposures of the AI to connected entities (whether financial sector or commercial entities) which bear the characteristics of, and are in substance, capital investments but which take the form of perpetual loans (or other similar "capital like" structures), in which case (as mentioned in subsection 3.1 and para. (c) above) limited exemption from deduction is available to the extent of the thresholds permitted in the BCR.

6.5.2 Apart from those items included in para. 6.5.1(b) above, deduction should be made from the CET1 capital of an AI (in full for items included in para. 6.5.1(a) and with threshold exemption for items included in paras. 6.5.1(c) and 6.5.1(d)). For items included in para. 6.5.1(b) which are investments in capital instruments issued by financial sector entities, deduction should generally be applied to the corresponding tiers (i.e. CET1 capital, AT1 capital or Tier 2 capital) of an AI's capital.

7. Risk-weighting framework

7.1 Risk coverage

7.1.1 AIs are required to calculate their CAR in accordance with the requirements set out in the BCR. The BCR set out the risk-weighting framework for calculating the RWAs for credit risk (including counterparty credit risk (CCR)), 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 6A – Calculation of counterparty credit risk

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 AIs' CCR exposures in respect of 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]

7.1.3 Each AI must have written policies (approved by the appropriate authority within the AI) for determining which exposures are to be included in, or excluded from, the AI's 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 [8] 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 Where an AI's exposures are measured at fair value, the AI must establish and maintain valuation systems, controls and procedures that are effective to ensure that the valuation of its exposures is prudent and reliable for the purposes of calculating the RWA under Parts 4 to 8 of the BCR (see CA-S-10 "Financial Instrument Fair Value Practices").

[7] The references to the risk-weighting framework in this module reflect the prevailing capital requirements set out in the BCR. AIs may refer to the BCR for the transitional provisions in respect of the implementation of Basel II or similar provisions that are no longer in force.

[8] 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.

7.1.5 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. That said, the HKMA would generally expect larger AIs with more sophisticated business operations to keep under review the appropriateness and benefits, from the perspective of risk management, of moving towards adoption of the more sophisticated approaches. In considering which approaches to adopt, AIs should conduct feasibility studies and analyses of the associated costs and benefits, having regard to the diversity and complexity of their operations.

7.1.6 The MA's approval for the use of approaches other than the default approaches is based on the minimum requirements set out in the BCR, and may be subject to conditions attached to the approval (see also para. 2.1.7 above). AIs adopting a more sophisticated approach are expected to comply with the minimum requirements and (where applicable) the conditions attached to their approval on an on-going basis. A return to a less sophisticated approach (e.g. from the IRB approach to the STC approach) will be permitted only in exceptional circumstances, subject to the prior approval of the MA.

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.

STC approach

7.2.2 The STC approach involves the calculation of credit risk using risk-weights specified in the BCR 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 revised paper "Recognition of External Credit Assessment Institutions" issued in September 2013.

7.2.3 The credit exposures of AIs under the STC approach are divided between –

(a) classes of exposures whose risk-weights are determined by reference to ECAI ratings. These include exposures to sovereigns, public sector entities, banks, securities firms, corporates and collective investment schemes, with each category having its own risk-weighting scale(s); and

(b) classes of exposures whose risk-weights are determined by reference to the nature and general characteristics of an exposure. These include-

(i) cash items (with risk-weights ranging from 20% to 1,250%);

(ii) 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;

(iii) holdings of capital instruments issued by financial sector entities that are "significant capital investments". As noted in

subsection 3.1, a portion of these holdings will be exempted from capital deduction by virtue of falling within the specified thresholds under the BCR. A risk-weight of 250% should be applied to the instruments not deducted[9]; and

(iv) and a miscellaneous group of exposures which are assigned a risk-weight of 1,250%. These include exposures in respect of: the first loss portion of credit protection purchased; transactions entered into on a delivery-versus-payment basis that remain unsettled for 5 or more business days; and any significant capital investment in a commercial entity (other than a connected commercial entity) that exceeds 15% of the capital base of the AI concerned.

7.2.4 Other exposures are generally assigned a risk-weight of 100%. Where however an exposure is a past due exposure (i.e. overdue for more than 90 days or rescheduled), a 150% risk-weight must be assigned rather than the risk-weight referred to in para. 7.2.3(a) and 7.2.3(b)(ii) above.

BSC approach

7.2.5 The BSC approach is essentially the OECD-based (i.e. Basel I) framework (which applied to AIs incorporated in Hong Kong before the BCR first came into force on 1 January 2007) modified to incorporate (among other things) certain definitional changes to bring it more 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

[9] The risk-weights for insignificant capital investments in financial sector entities that are exempted from capital deduction by virtue of the fact that they fall within the specified thresholds under the BCR are determined on the basis described in para. 7.2.3(a).

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. The same risk-weighting treatments mentioned in para. 7.2.3(b)(i), 7.2.3(b)(iii) and 7.2.3(b)(iv) also apply to the BSC approach. Other exposures (e.g. to corporate customers) are assigned a risk-weight of 100%.

7.2.6 To use the BSC approach an AI must obtain the prior approval of the MA. The MA cannot give his approval unless the MA is satisfied that an AI's business operation is small (i.e. total assets of not more than HK$10 billion), simple, and straightforward.

IRB approach

7.2.7 The IRB approach allows AIs with prior approval of the MA to use their own internal 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) of the exposure. 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 internal estimate) for one or more of the credit risk components (see para. 7.2.8 below for more details). The estimates (internal or supervisory as the case

may be) are then input into formulae prescribed in the BCR known as "risk-weight functions" to calculate the RWA of the IRB exposures. The appropriate risk-weight function to use depends on the IRB class or subclass to which a particular exposure belongs. AIs that use the IRB approach are also subject to a capital floor as prescribed under Division 13 of Part 6 of the BCR (supplemented where relevant by circulars or guidelines issued by the MA).[10]

7.2.8 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 BCR, as inputs to the appropriate risk-weight function. Under the AIRB, by contrast, AIs use, as inputs to the risk-weight function, their own internal estimates for PD, LGD, EAD and M.

7.2.9 The use of the IRB approach is subject to the fulfillment of the minimum requirements set out in Schedule 2 to the BCR and requires the prior approval of the MA under §8(2)(a) of the BCR (also see para. 2.1.7 above). 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 IRB Approaches" sets out the standards that the HKMA expects AIs' internal rating systems to meet in

[10] A circular letter was issued on 20 December 2013 to all locally incorporated AIs introducing changes to the capital floor requirements to better align the relevant provisions in the BCR with the prevailing capital standards issued by the BCBS. [11] The hypothetical capital requirement is the capital requirement that would have been held by the CCP under Basel III for its default risk exposures to its clearing members if the CCP were a bank. During the period until 1 January 2017, an AI may choose to apply a risk-weight of 1,250% to its default fund exposure (subject to a cap determined with reference to the regulatory capital that should be held by the AI for its default risk exposures to the CCP) as an alternative to the hypothetical capital requirement approach.

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.

7.2.10 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 subclasses 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 exclude certain immaterial exposures from calculation under the IRB approach. The relevant provisions are set out in Division 3 of Part 2 of the BCR.

7.2.11 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 the home supervisor's approach to applying the minimum requirements are not materially different from those prescribed in the BCR in respect of the IRB approach. Similarly, the HKMA may coordinate with the host supervisors of AIs' overseas banking subsidiaries to facilitate cross-border implementation of the approach.

Counterparty credit risk (CCR)

7.2.12 CCR, for the purposes of the BCR, consists of two components namely counterparty default risk and

credit valuation adjustment (CVA) risk. The former refers to the risk of loss due to the default of counterparties and the latter to the risk of loss due to changes in the credit quality of counterparties when a transaction is marked to market. AIs are required to hold regulatory capital for CCR exposures arising from derivative contracts and securities financing transactions (SFTs), whether booked in the banking book or trading book, in accordance with the requirements set out in the BCR.

Counterparty default risk

7.2.13 There are three approaches to calculating the default risk exposure to a counterparty-

(a) the current exposure method (CEM) (the default option for derivative contracts);

(b) the collateralization approach (the default option for SFTs); and

(c) the internal models (counterparty credit risk) approach (IMM(CCR) approach) which can be used for derivative contracts and SFTs.

7.2.14 The RWA of the default risk exposure to a counterparty is determined as the product of the default risk exposure and the risk-weight applicable to the counterparty ascertained in accordance with Part 4, 5 or 6 of the BCR, depending on the approach used by the AI concerned for calculating its credit risk for non-securitization exposures.

7.2.15 The **CEM** determines the default risk exposure in respect of a derivative contract as the sum of the current exposure and the potential exposure in respect of the contract. Potential exposure is calculated by multiplying the notional amount of the contract by the appropriate "credit conversion factors" specified in the

BCR.

7.2.16 The **collateralization approach** calculates the default risk exposure in respect of an SFT as a net credit exposure to the counterparty concerned by treating the money paid or securities delivered by an AI as a credit exposure to the counterparty secured by the money or securities received by the AI under the SFT.

7.2.17 The **IMM(CCR) approach** allows AIs, with the prior approval of the MA, to use their own internal models to calculate the default risk exposure to counterparties. Only those AIs that have obtained the MA's approval to use the internal models approach (IMM approach) for calculating their market risk capital charge (see subsection 7.6 below) may apply to the MA for approval to use the IMM(CCR) approach. Such approval will only be granted if all of the relevant requirements set out in Schedule 2A to the BCR are met. Essentially, the MA must be satisfied that the AI concerned has put into operation an adequate risk management framework consisting of sound governance arrangements, policies and procedures and internal controls for CCR management (including adequate safeguards in relation to the use of internal models such as validation and stress-testing).

CVA risk

7.2.18 There are two methods for calculating the capital charge for CVA risk: the standardized CVA method and the advanced CVA method. All derivative contracts are subject to a CVA capital charge except for those specified in Schedule 1A to the BCR. An AI may need to calculate a CVA capital charge for its SFTs if the MA determines that the CVA risk arising from the AI's SFTs is material.

7.2.19 The **advanced CVA method** should be used by AIs that have both the approval of the MA to use the

IMM(CCR) approach and the approval of the MA to use the IMM approach for specific risk for interest rate exposures. All other AIs should use the **standardized CVA method**.

7.2.20 Hedges against CVA risk (e.g. single-name credit default swaps) may be used to reduce a CVA capital charge under both methods if the hedges fulfil the eligibility criteria set out in §226T of the BCR. The aim of the eligibility criteria is to ensure that the hedges are used and managed for the purpose of mitigating CVA risk and that the CVA risk is transferred to independent third parties with acceptable credit quality by using instruments that offer effective CVA risk transfer.

7.3 Exposures to central counterparties (CCPs)

7.3.1 AIs are required to hold regulatory capital for their exposures to CCPs in respect of derivative contracts and SFTs cleared through CCPs. An AI that is a clearing member of a CCP basically incurs two types of exposure to the CCP:

(a) default risk exposures in respect of:

(i) contracts or transactions entered into by the AI with the CCP for the AI's own purposes; and

(ii) guarantees provided by the AI to its clients against default of the CCP in relation to clients' contracts or transactions cleared through the CCP; and

(b) default fund contributions to the CCP.

7.3.2 Default risk exposures to qualifying CCPs (as defined in the BCR) are eligible for preferential risk-weights to reflect the perceived low risk of default of qualifying

CCPs while exposures to non-qualifying CCPs are generally subject to higher risk-weights determined in accordance with the STC approach. An AI's regulatory capital for its default fund contributions to a qualifying CCP is determined as the AI's proportionate share of the CCP's hypothetical capital requirement[11]. Default fund contributions to non-qualifying CCPs should be assigned a risk-weight of 1,250%.

7.3.3 AIs that are clearing members, or clients of clearing members, are also required to capitalize the following exposures:

(a) default risk exposures and exposures to CVA risk in respect of CCP-related transactions entered into with clearing members or with the AI's clients; and

(b) in the case of clearing members, default risk exposures in respect of guarantees provided by the AI to a CCP guaranteeing performance by the AI's clients under transactions or contracts cleared by the CCP.

7.3.4 AIs, whether acting as clearing members or as clients of clearing members, are required to capitalize their credit exposures to persons holding collateral posted by them in respect of transactions or contracts cleared by CCPs if the collateral is not held in a manner that is bankruptcy remote from those persons.

7.3.5 An AI's capital requirements for default risk exposures to clearing members or to the AI's clients and for credit exposures to persons holding collateral posted by the

[11] The hypothetical capital requirement is the capital requirement that would have been held by the CCP under Basel III for its default risk exposures to its clearing members if the CCP were a bank. During the period until 1 January 2017, an AI may choose to apply a risk-weight of 1,250% to its default fund exposure (subject to a cap determined with reference to the regulatory capital that should be held by the AI for its default risk exposures to the CCP) as an alternative to the hypothetical capital requirement approach.

AI should be determined using the STC, BSC or IRB approach unless otherwise specified in the BCR.

7.4 Credit risk (securitization exposures)

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

- the criteria that should be met in order for AIs to apply the framework for determining the regulatory capital to be held in respect of exposures arising from traditional and synthetic securitization transactions as defined in the BCR. 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 BCR;

- the definition of "securitization exposures", which include: exposures arising from the purchase of securitization issues for investment purposes; the repurchase of securitization issues by originators; the provision of credit protection or credit enhancement to parties to securitization transactions; the retention of one or more securitization positions; the provision of liquidity facilities or servicer cash advance facilities in respect of securitization transactions; and the obligation to acquire any investors' interest in securitization transactions that are subject to early amortization provisions;

- the definition of "re-securitization exposure", which means an exposure to a securitization

transaction in which any of the underlying exposures is itself a securitization exposure. Re-securitization exposures are subject to higher capital requirements than other securitization exposures in recognition of the greater risk associated with them;

- requirements for AIs to have, on a continuous basis, a comprehensive understanding of, and access to information in relation to, the risks of their securitization exposures as well as the respective underlying exposures (in particular, the underlying exposures of re-securitization transactions). The aim is to ensure that AIs perform their own credit analyses and do not unduly rely on ECAI ratings; and

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

7.4.2 The BCR provide two approaches to calculating the capital requirements for securitization exposures: the standardized (securitization) approach (STC(S) approach) and the internal-ratings based (securitization) approach (IRB(S) approach). The applicable approach is determined by reference to the approach(es) AIs use to calculate the credit risk for the class(es) of exposure to which the underlying exposures in respect of the securitization exposure belong. For example, if the underlying exposures in respect of an AI's securitization exposure are residential mortgage loans and the AI uses the STC

approach to calculate the credit risk for residential mortgage loans, then the AI must use the STC(S) approach to calculate the credit risk for the securitization exposure. 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 former method must be used for rated securitization exposures. Regarding unrated securitization exposures, the latter method must be used if consent has been given by the MA, otherwise the exposures should be subject to a risk-weight of 1,250%.

7.4.3 Securitization transactions may involve 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. The risk evaluation / assessment should not unduly or mechanically rely on ECAI ratings.

7.4.4 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 in cases where risks transferred out through the transaction may return and the impact that the securitization transaction may have on the quality of the exposures retained by the AI.

7.5 Use of credit risk mitigation techniques

7.5.1 AIs may use credit risk mitigation (CRM) techniques to reduce the RWA of their credit exposures (including their default risk exposures to CCPs) and to lower their capital requirements as a result. AIs are permitted to recognize the credit 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 approach, the STC approach, the IRB approach, the IMM(CCR) approach or Division 4 of Part 6A of the BCR.

7.5.2 The use of any CRM technique is subject to the requirements relating to legal certainty and operational issues described under the risk-weighting framework for credit risk in the BCR. Moreover, exposures that are covered by "high cost credit protection", where the combined effect of the costs paid for the protection and its terms and conditions call into question the degree to which the credit risk of the exposures has been effectively mitigated, will be subject to scrutiny under the HKMA's SRP (see Annex G to CA-G-5).

7.6 Market risk

7.6.1 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, equities 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.

7.6.2 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 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 or required by the BCR. 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; or an AI may be required to use the STM approach to calculate the market risk capital charge for specific risk for n^{th}-to-default credit derivative contracts and securitization exposures that do not fall within a correlation trading portfolio.

7.6.3 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 the MA is satisfied that:

(a) the AI's market risk positions never exceed 5%, or only sporadically exceed 5% and never exceed 6%, of its total on-balance and off-balance sheet positions; and

(b) the AI's market risk positions never exceed HK$50 million, or only sporadically exceed HK$50 million and never exceed HK$60 million.

7.6.4 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.

7.6.5 The **IMM approach** allows AIs, with the prior approval

of the MA under §18(2)(a) of the BCR, 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 set out in Schedule 3 to the BCR (also see para. 2.1.7 above). An AI may be permitted by the MA to exclude certain immaterial exposures from the calculation of market risk under the IMM approach. In such cases the AI must use the STM approach to calculate its market risk for such exposures. The relevant provisions are set out in §23A and §23B of the BCR. Detailed guidance for the use of the IMM approach is provided in CA-G-3 "Use of Internal Models Approach to Calculate Market Risk".

7.6.6 If an AI has a foreign parent bank, and the latter has adopted an approach to calculate the group's market risk 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.

7.7 Operational risk

7.7.1 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.

7.7.2 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".

7.7.3 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 BCR. 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 BCR and OR-1.

7.7.4 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. 2.1.9 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.

8.2 The HKMA will attach increasing importance to reviewing the adequacy of AIs' CAAP as part of the SRP (see para. 8.3 below). All AIs are expected to conduct their CAAP in accordance with section 4 of CA-G-5 save for those specified under para. 4.1.2 of CA-G-5. 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 requirements 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 monitoring and evaluating the capital adequacy of individual AIs, and of determining their minimum CAR requirements under §97F(1) of the Ordinance is referred to as the SRP. Details of the SRP are set out in CA-G-5. The HKMA conducts the SRP on each AI regularly (normally once a year) 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 risks (i.e. credit, market, operational (including legal), interest rate, liquidity, strategic and reputation risks) inherent in their business and operations and the adequacy of the AIs' systems and controls relating to such risks. 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 requirements

9.1 §3A and §3B of the BCR prescribe minimum CAR requirements. However, having regard to the risks associated with an AI, the MA can (under §97F of the Ordinance) vary any capital requirement rule under the BCR, including the minimum CAR requirements, for the AI after taking into account the representations, if any, made by the AI under §97F(3)(b) of the Ordinance. The HKMA will use the assessment results produced by the SRP carried out in respect of an AI, to determine whether the minimum CAR under §3A or §3B of the BCR should be varied in respect of that AI and, if so, by how much. Where an increase in the minimum CAR of an AI is deemed prudent under §97F of the Ordinance as a result of the SRP, the additional capital required (capital add-on) will be allocated across the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio of the AI on a proportionate basis reflecting the prevailing split of "Pillar 1" capital under §3A or §3B of the BCR until such time as the Basel III capital buffers are implemented[12] (see section 13 below). The apportionment of the capital add-on and the arrangements to be adopted in respect of the capital add-on following implementation of the capital buffers on 1 January 2016 are set out in CA-G-5.

[12] For example, the apportionment between CET1 capital ratio, Tier 1 capital ratio and Total capital ratio will be based on the split of 4/5.5/8 in 2014 and 4.5/6/8 from 2015 onwards.

9.2 An AI aggrieved by a decision of the MA to vary the AI's minimum CAR may, under §101B(1) of the Ordinance, appeal to the BRT.

Non-statutory trigger ratios

9.3 In addition to the minimum CAR requirements, it is the HKMA's practice to require each AI to observe certain non-statutory trigger ratios above the minimum CAR requirements for that AI so as to provide both an early warning signal of deterioration in the AI's capital adequacy and a "safety margin" of operation to reduce the risk of breaching minimum CAR requirements. The trigger ratios are set at a level that is not lower than a "floor percentage" above an AI's minimum CAR requirements, taking into account the vulnerability of the AI to the key factors that determine its minimum CAR requirements. These factors may include quality and volatility of earnings, ability to raise capital and the quality of the AI's capital planning process. The floor percentage applicable to each of the three capital ratios is derived by apportioning 0.5% to the ratios based on the split for the underlying minimum CAR requirements in force during the period between 2013 and 2015 (see Table 1 of CA-G-5 for details of the floor percentage for trigger ratios). Where an AI's trigger ratios are set at levels above the floor percentages, the same apportionment method described above will be used except that 0.5% will be replaced by the higher trigger level used. An AI is expected to alert the HKMA (and discuss with the HKMA its proposed actions in response) when it reasonably anticipates that any of its capital ratios will fall to the respective trigger ratios or below in the foreseeable future. This would include cases where there will be a material reduction of any of the capital ratios caused by: anticipated losses in loans or operations, increases in risk-weighted assets, or material investments in entities requiring deduction from the capital base.

9.4 The MA will continue using regulatory trigger ratios to monitor AIs' capital adequacy until the introduction of the capital buffers on 1 January 2016. From that point onwards, AIs will be expected to ensure that they have comparable internal capital targets (to be approved by the HKMA) and monitoring tools so

that timely discussion with the HKMA can be undertaken if their capital levels fall close to the buffer zone (see CA-G-5 for details).

10. Monitoring compliance with minimum CAR requirements

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

- setting trigger ratios (see para. 9.3 above) and requiring remedial actions to be taken by the AI in the event that any of the AI's capital ratios falls below the respective trigger ratios. From 1 January 2016 onwards, the use of trigger ratios will be replaced by the monitoring of AIs' internal capital targets as mentioned in para. 9.4 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 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 BCR 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 any of the statutory minimum CAR requirements is a

serious matter and as described in section 2 above will almost certainly be a ground for revocation of authorization. As required under §3D of the BCR, any breach of any of the requirements must be notified to the MA immediately it becomes known. The MA will, pursuant to §97E(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(s) concerned. The MA may then require the AI to take remedial action by written notice served under §97E(2) of the Ordinance. In general, during his discussions with the AI, the MA will look to the AI to propose an action plan for restoring the capital ratio(s) concerned 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 §97E(2) to implement the plan by way of remedial action.

11.2 An AI's failure to immediately notify the MA of any breach of any of the statutory minimum CAR requirements, and an AI's failure to comply with any remedial action specified in a notice issued under §97E(2) of the Ordinance, 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 (§97D(3) and §97E(4) of the Ordinance).

12. Financial disclosures

12.1 Disclosure requirements complement the minimum CAR requirements and the SRP. Through the mandatory public disclosure framework set out in the BDR (made by the MA under §60A of the Ordinance), the HKMA aims to engage market discipline in order to 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 (including the investor community and market professionals) and that AIs have in place a clearly documented policy for the disclosure of, among other things, relevant and adequate information that conveys an accurate impression of their actual risk profile.

12.2 To assist AIs with the application of the BDR, the BDR are supplemented by guidance issued by the HKMA in CA-D-1 and, where necessary, by standard templates which serve as a tool to facilitate consistent and comparable disclosure among AIs.

12.3 The BDR, which are closely in line with international standards (e.g. those promulgated by 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 BDR 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 BDR to the greatest extent possible.

12.5 The BDR 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 BDR is a statutory requirement under §60A of the Ordinance. AIs are required to declare their compliance with the BDR 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 BDR through review of the return and the disclosure statements made by AIs, 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 BDR. Upon conviction, such persons

will be liable to a fine.

13. Further developments

13.1 The implementation of the Basel III capital standards in Hong Kong is expected to continue in accordance with the transitional timeline issued by the BCBS. The Basel III capital standards that will be phased in by 2019 include:

- two capital buffers above the statutory minimum CAR requirements –

  i) the **capital conservation buffer**, which is a band of CET1 capital equal to 2.5% of risk-weighted assets; and

  ii) the **countercyclical capital buffer**, which operates as an extension of the capital conservation buffer, and which is expected to range from 0% to 2.5% of risk-weighted assets during periods of excessive credit growth associated with the build-up of system-wide risk. (Under the Basel framework national authorities may implement a countercyclical buffer in excess of 2.5% for banks in their jurisdictions if they deem it appropriate to protect financial stability in their national context.[13]) The countercyclical capital buffer is expected to be released in periods of banking system stress or when credit growth ceases to be excessive. The HKMA's approach to operating the countercyclical capital buffer will be set out in an SPM module on Approach to implementing the Countercyclical Capital Buffer.

[13] In Hong Kong this will only be considered after further consultation with the industry, where–
(a) the latest countercyclical buffer ratio is 2.5% and has been in effect for a period of not less than 6 months;
(b) the HKMA reasonably considers that the pace of credit growth did not slow to any material extent during the period; and
(c) the HKMA reasonably considers it necessary to determine a ratio of more than 2.5% to be the countercyclical buffer ratio in order to protect authorized institutions from the expected consequences of excessive credit growth and the build-up of system-wide risks in Hong Kong.

Restraints will be imposed on distributions by a bank when its capital level falls into the buffer zone. The two buffers will be phased in from 1 January 2016 and will be fully implemented by 1 January 2019;

- A **higher loss absorbency capital requirement (HLA)** for systemically important banks (SIBs), both global (G-SIBs) and domestic (D-SIBs), in order to address the negative externalities they pose. This HLA requirement will be implemented as an extension of the capital conservation buffer (and will likewise be phased-in from 1 January 2016 to 1 January 2019). The level of HLA for G-SIBs will initially range from 1% to 2.5% of risk-weighted assets depending on their degree of systemic importance. This could be further increased to 3.5% or higher where necessary if the degree of systemic importance should increase. In the case of D-SIBs, the level of HLA is to be calibrated by national supervisors in accordance with the principles laid down in *A framework for dealing with domestic systemically important banks* published by the BCBS in October 2012. The HKMA's approach to identifying D-SIBs in Hong Kong and implementing the HLA requirement will be set out in an SPM module on Systemically Important Banks; and

- a non-risk based **leverage ratio**[14], designed to constrain the build-up of excessive leverage within the banking sector and to provide an additional safeguard against model risk and measurement error in the risk-based CAR calculation. The BCBS has instituted a "parallel run period" from 2013 to 2017 using a testing minimum of 3% for the leverage ratio. Data collected in the parallel run period will be used by the BCBS to determine any adjustments that may be needed to the definition and calibration of the leverage ratio during 2017 in order for the ratio to be formally adopted as a minimum standard on 1 January 2018.

13.2 To ensure that the capital adequacy framework in Hong Kong

[14] The leverage ratio of an AI is ratio of its Tier 1 capital to its on-balance sheet and off-balance sheet exposure as calculated in accordance with the BCBS Basel III leverage ratio framework.

remains up-to-date and appropriate, the HKMA will continue to monitor industry practices and adopt international standards as appropriate for local circumstances. Work that is currently underway at the BCBS includes a review of the standardized approaches for the calculation of capital requirements for credit risk and operational risk, a fundamental review of trading book capital requirements, consideration of capital treatments for interest rate risk in the banking book and revisions to the securitization framework. Moreover, the HKMA will continue to monitor industry appetite and capacity for the implementation of the advanced measurement approaches for operational risk.
