# Implementation of Basel II in Hong Kong

*by the Banking Policy Department*

After some five years of rigorous debate and extensive consultation, the Basel Committee on Banking Supervision released the revised capital adequacy framework (commonly referred to as "Basel II" or "the New Capital Accord") in June 2004. The revised framework seeks to align minimum capital requirement of banks more closely to the risks they face. Given the potential benefits of Basel II to the safety and stability of the banking system and to the reputation of Hong Kong as an international financial centre, Hong Kong has been at the forefront of jurisdictions globally taking active steps to incorporate the requirements of the revised framework into their regulatory regimes. This article describes the approach being taken and the progress so far and some of the more important remaining tasks to implement the revised framework in Hong Kong.

## Overview of the revised capital adequacy framework in Hong Kong

### *Background*

The HKMA's decision to implement Basel II is in line with its policy of adhering closely to international best practices and standards. The revised framework will apply to all authorized institutions (AIs) incorporated in Hong Kong and will reflect Basel II's three-pillar structure. This involves a more risk-sensitive measurement of minimum capital requirements (Pillar 1) and the introduction of two other reinforcing components: the supervisory review process (Pillar 2) and market discipline (Pillar 3).

Pillar 1 requires AIs to maintain a minimum amount of capital for credit, market, and operational risks. The new framework for measuring credit risk is much more sophisticated than the existing framework, while a capital charge for operational risk will be introduced for the first time. The methodologies for measuring market risk are unchanged. The new framework replaces the old "one size fits all" approach with a spectrum of approaches for AIs of different levels of sophistication, depending on their internal risk management capabilities and complexity of operations.

Pillar 2 relates to a supervisory review process whereby (i) AIs are required to assess the full range of risks they run, including other risks (for example, credit concentration risk, interest rate risk in the banking book, and reputation risk) that are not covered under Pillar 1, and to determine how much capital to hold against them; and (ii) the HKMA conducts a review of individual AIs' capital adequacy and internal assessment process, ensuring that capital above the minimum level is held where appropriate.

Pillar 3 sets out the disclosure requirements applicable to AIs in areas such as their risk profiles, capital adequacy and internal risk management. This is to give the market a stronger "discipline" role in ensuring that AIs hold an appropriate level of capital and have appropriate risk management practices and procedures to manage their risks.

So far three packages of proposals have been released and generally endorsed by the banking industry, covering various implementation issues and weighting frameworks at the core of the revised framework. The HKMA's work has benefited from the advice of the *Basel II Consultation Group*, which includes representatives from the industry, the accounting profession and other interested parties, and the helpful comments of the banking industry and other interested parties during the subsequent public consultations.

## Menu-based approach for calculation methodologies

The HKMA will adopt a menu-based approach in implementing Basel II. This recognises that AIs vary widely in terms of their business focus, size and complexity, as well as the nature and combination of risks they face. AIs are expected to choose options based on the results of their own detailed feasibility study and costs-and-benefits analysis.

### *Credit risk*

The HKMA will offer AIs a choice of all three approaches developed by Basel: the Standardised Approach, the Foundation Internal Ratings-Based (FIRB) Approach and the Advanced Internal Ratings-Based (AIRB) Approach. The Standardised Approach is the "default option" under the revised framework. AIs that intend to adopt the IRB Approaches will be required to meet stringent qualifying criteria and standards. In addition, in an innovation suggested by the banking industry to address concerns over the cost and complexity of implementing the revised framework, the HKMA has developed the "Basic Approach". This approach is essentially a modification of the existing framework and is mainly intended for use, with the prior approval of the HKMA, by AIs with small, simple, and straightforward operations, and as an interim approach for those AIs developing IRB systems.

Fourteen AIs, representing over 80% of the total assets of all Hong Kong incorporated AIs, have expressed an interest in using the IRB Approaches. These AIs intend to migrate to the IRB Approaches in or after 2007. Forty AIs, mainly restricted licence banks and deposit-taking companies, have so far been approved to use the Basic Approach.

### *Operational risk*

The HKMA will initially only offer the Basic Indicator Approach and the Standardised Approach[1] for calculating the operational risk capital charge. The HKMA considers that the time is not yet ripe to introduce the Advanced Measurement Approaches in Hong Kong given that the techniques for quantitative capital measurement are still evolving, and AIs do not generally have the systems to accumulate operational loss data required for the approaches. AIs intending to adopt the Standardised Approach must be able to demonstrate to the HKMA's satisfaction that they meet the specific qualifying criteria set out in Basel II. Standardised Approach aspirants will also need to consider the non-statutory guidance on operational risk management that the HKMA issued for consultation in September 2005. This was based on the Basel Committee's 2003 paper on "Sound Practices for the Management and Supervision of Operational Risk." The "self-assessment" approach, which places the onus on AIs to demonstrate their compliance, aims to provide flexibility and incentives for AIs to adopt more advanced approaches and a more structured framework to operational risk management.

### *Market risk*

Key elements of the 1996 Market Risk Amendment remain largely unchanged, except for a number of refinements and updates to align the relevant standards with the revised framework, current market practices and risk management standards. AIs will continue to calculate their capital requirement for market risk exposures based on the Standardised Approach or, subject to the approval of the HKMA,

[1] This includes the Alternative Standardised Approach.

the Internal Models Approach. AIs with small market risk exposures will be exempted based on certain minimum criteria.

## *Implementation timetable*

In accordance with the Basel timetable, the HKMA intends to implement the Standardised and the FIRB Approaches, and also the Basic Approach, together with Pillars 2 and 3 in January 2007, and the AIRB Approach in January 2008. Diagram 1 illustrates the key components of the revised framework and the target implementation date for each of the components.

Subject to the HKMA's approval, AIs planning to use the IRB Approaches will be allowed to implement them by phases within a three-year transition period between 2007 and 2009. They may use the Basic Approach or the Standardised Approach temporarily before implementation is completed.

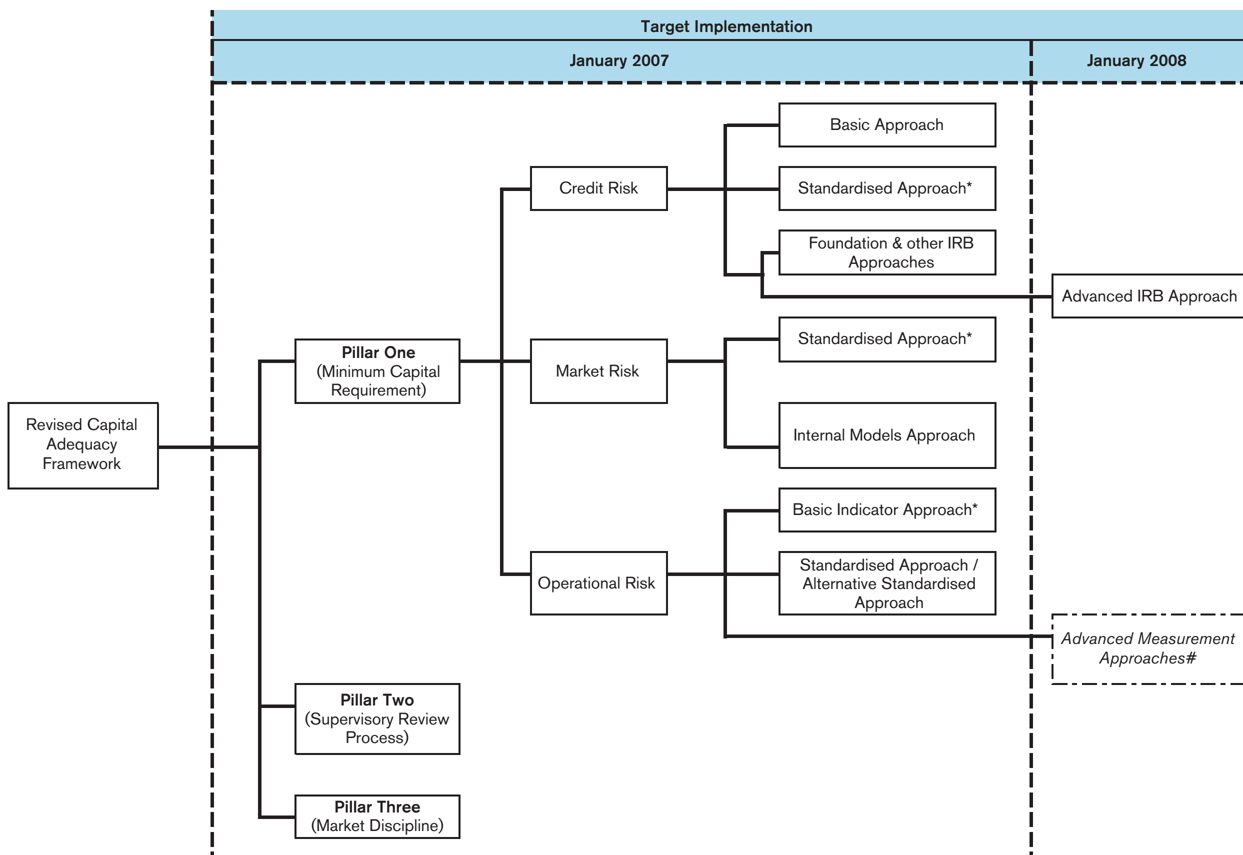
A new Capital Adequacy Return is being developed to accommodate AIs which use different approaches. In the year prior to implementation there will be parallel reporting using the existing return and the relevant parts of the new return for certain specified periods. This will enable AIs to become familiar with the new return and to assess the impact of the revised framework on their minimum capital requirements.

## Banking (Amendment) Ordinance 2005

Following an extensive consultation process, the Banking (Amendment) Ordinance 2005 (BAO 2005) was enacted on 6 July 2005, providing, among other

Diagram 1

Revised capital adequacy framework in Hong Kong under Basel II




* Default option that an AI is required to adopt unless approved by the HKMA to adopt (one of) the other approach(es)

\# At present, the HKMA has no plan to implement the Advanced Measurement Approaches in Jan 2008 as their underlying methodologies and techniques are still evolving. The HKMA will keep them under review and consult the industry about the implementation timetable in due course.

things, express statutory backing for implementation of Basel II in Hong Kong. The provisions of the Ordinance which relate to the revised framework will commence operation in accordance with the implementation date (January 2007).

The BAO 2005 provides that AIs' capital adequacy ratio (CAR) shall be calculated in a manner to be prescribed in rules made by the Monetary Authority (MA) under the Banking Ordinance (the Capital Rules). The Third Schedule to the Ordinance, which sets out how the minimum capital requirement should be calculated under the existing framework, will be repealed when the Capital Rules are made. Disclosure Rules will also be made under section 60A of the Ordinance for the implementation of the new requirements under Pillar 3 of Basel II. The MA will also be empowered by the Ordinance to issue guidelines to AIs on the manner in which the MA interprets and proposes to operate the Rules, and information on financial affairs including the CAR to be disclosed.

No rules will be required to introduce the Pillar 2 requirements in Hong Kong, as the MA already has power under section 101 of the Banking Ordinance to require AIs to hold capital in excess of the minimum level of 8% (as referred to in section 98 of the Ordinance). However, the BAO 2005 increases the minimum CAR which the MA may require a licensed bank to maintain under section 101(1) of the Ordinance to up to 16%. This amendment allows the MA more flexibility to set higher minimum CARs if necessary. The HKMA will issue guidelines on the approach for evaluating the capital adequacy of individual AIs (see the section on Supervisory review process (Pillar 2) for details).

There are clear checks and balances in the BAO 2005 on the rule-making power of the MA. First, the Rules will be developed in full consultation with the banking industry. Secondly, the Rules will have the status of subsidiary legislation and hence will be subject to negative vetting by the Legislative Council (LegCo). Thirdly, if an AI is aggrieved by decisions of the MA made under the Capital Rules, it may apply for a review of such decisions by the Capital Adequacy Review Tribunal — an independent appellate body. Given the highly technical nature of decisions made under the Capital Rules, appeals will be considered by this tribunal rather than the Chief Executive in Council as in the case of the existing appeal mechanism in the Banking Ordinance. It is envisaged that AIs' right of appeal will be restricted to the fundamental decisions on the choices of approach for calculating capital adequacy, which may have a material impact on the AI's minimum capital requirement.

## Rule-making progress

While good progress has been made on a number of aspects of Basel II implementation, much remains to be done, particularly in respect of the forthcoming development of the Capital Rules and Disclosure Rules.

### *Capital Rules*

The Capital Rules prescribe the manner in which AIs will calculate their CAR under the revised framework. The Rules will set out in detail the different calculation approaches that can be adopted for credit, market and operational risks, and will be similar to the consultative proposals already issued by the HKMA. Individual parts of the Rules will be proposed for consultation by stages, with the whole consultation process required under the BAO 2005 completed by the first half of 2006. The complete set of Rules will then be introduced into LegCo for the required negative vetting.

### *Disclosure Rules*

The Disclosure Rules will bring the disclosure requirements for AIs into line with the recommendations of the Basel Committee under Pillar 3 of the revised framework (see the section on Market discipline (Pillar 3) for details). The HKMA expects to complete the drafting of the Disclosure Rules towards the end of the third quarter of this year. The draft Disclosure Rules will then be sent to Members of the Working Party on Financial Disclosure and the Joint Technical Working Group on

Financial Disclosure for comments. It is intended that public consultation will commence during the fourth quarter, with the intention of finalising the Disclosure Rules by the end of the year. As in the case of the Capital Rules, the Disclosure Rules will be introduced into LegCo for negative vetting in the second quarter of 2006.

As in the other areas of Basel II, the HKMA is keen to minimise any additional burden that might be placed on AIs in complying with the revised public disclosure requirements.

## Major on-going work

Work is continuing on several other major policy areas as follows.

### *IRB validation*

*Proposed approach to validation*

IRB systems are the cornerstone for calculating regulatory capital charges by AIs under the IRB Approaches. They form the basis of determining a borrower's probability of default and, in the case of the AIRB Approach, two other risk components, namely a facility's loss given default and exposure at default. Validation of these three risk components, which are key components in the calculation of regulatory capital charges, and the underlying rating systems, is a major part of the HKMA's IRB recognition process. In the context of rating systems, the term "validation" encompasses a range of processes and activities that contribute to an assessment of whether ratings adequately differentiate risk, and whether estimates of the three risk components appropriately characterise the relevant aspects of risk.

The approach to IRB validation that the HKMA proposes will be closely aligned with the principles and recommendations of the Validation Subgroup of the Accord Implementation Group of the Basel Committee. It is an AI's responsibility to demonstrate that its internal rating system meets the requirements of the HKMA set out in the relevant guidance papers.

The HKMA will expect an AI to conduct its own internal validation of the rating system, estimates of the risk components, and the processes by which its internal ratings are generated. The results of the internal validation should be clearly documented and reported to the HKMA upon request. In some circumstances, the HKMA will consider requiring an AI to commission a report from its external auditor or other qualified independent expert to review the AI's level of compliance with the requirements.

The HKMA recognises that there is no universal tool for validating all portfolios. The HKMA also notes that there are currently no "best practice" validation standards in the banking industry. The techniques, especially the quantitative techniques, used by AIs to validate their internal rating systems and the estimates of their risk components, are very diverse and still evolving. To establish precise quantitative minimum standards and benchmarks for internal rating systems at this stage would stifle innovations, which may ultimately result in more robust validation techniques.

In the absence of precise quantitative minimum standards for validating internal rating systems, the HKMA's approach to validation will be twofold. First, it will review the processes, procedures and controls that are in place for internal rating systems. This will include, for example, ensuring that these systems are overseen by appropriate senior executives of the AI both before and during use; that procedures are in place to ensure the integrity and reliability of the data in the internal rating systems; and that independent internal reviews of the performance of internal rating systems are conducted with appropriate frequency.

The second component of IRB validation will be to ensure that, when assessing the performance of their rating systems, AIs make regular use of at least some of the generally accepted quantitative techniques presented in a guidance note on validation to be issued by the HKMA. While the HKMA will not establish minimum quantitative standards for validating internal rating systems, it will expect AIs to demonstrate the rationale and the appropriateness of their chosen quantitative techniques, and to

understand the limitations, if any, of such techniques. The HKMA will also expect AIs to demonstrate the appropriateness of the internal parameters they employ in assessing a rating system's accuracy and reliability, and the processes they put in place for benchmarking and stress testing their internal rating systems.

*Action plan*

The HKMA plans to issue a guidance note on validation for industry consultation during the third quarter of this year. It will also issue IRB self-assessment questionnaires to AIs that have indicated that they are planning to adopt the IRB Approaches. The results of these questionnaires will be used as the basis for the HKMA's initial assessment of each AI's readiness for adopting the IRB Approaches. The IRB recognition process is expected to begin in the fourth quarter of 2005, with priority being given to those AIs that plan to adopt the IRB Approach earliest. The IRB recognition process for an AI will include

(i) a pre-examination meeting with the AI to discuss the details of the recognition process, such as the approximate time frame for conducting an on-site examination;

(ii) an on-site examination to review both the technical details of the internal rating system and the risk management practices that govern the use of such systems. After conducting the assessment, the HKMA will issue the examination report, including the decision of whether to allow the AI to use the IRB Approach; and

(iii) follow-up visit(s) if necessary to assess the implementation of recommendations made in the examination report, and monitor the performance of the AI's rating system.

## Supervisory review process (Pillar 2)

*Proposed framework*

The main elements of Pillar 2 are already embedded in the HKMA's existing supervisory approach, which provides a good basis for conducting the supervisory review process. Thus, the implementation of Pillar 2 in Hong Kong will be more of an elaboration and refinement process rather than a radical change of existing practices.

The primary difference between the HKMA's practice under Pillar 2 and its current approach is that each AI's minimum CAR will be set on the basis of a detailed and rigorous assessment process taking into account the overall risk profile and management systems of individual AIs, the extent to which they are exposed to risks not covered under Pillar 1, and the result of their own capital adequacy assessment. Based on the revised approach, the practice of maintaining a floor of 10% in the setting of the minimum CAR, which currently provides a buffer over the minimum of 8%, will no longer be necessary (in other words, some banks' minimum CAR may be set lower than 10%).

The proposed Pillar 2 framework comprises two components: the internal capital adequacy assessment process (CAAP) that each AI is required to maintain and the supervisory review process (SRP) conducted by the HKMA.

*Capital adequacy assessment process*

CAAP is a comprehensive process that an AI uses to identify and measure its risks and to assess how much capital is needed to support such risks. It should be risk based and forward looking, integrated in the management process and decision-making culture, and capable of producing a reasonable outcome (including an overall assessment of capital needed). A CAAP constitutes the following key elements:

(i) polices and procedures to identify, measure and report the risks inherent in the AI's activities;

(ii) a process to relate the AI's internal capital to risks;

(iii) a process to state the AI's capital adequacy goals in relation to risk, taking into account its strategic focus and business plan; and

(iv) a process of internal controls, review and audit to ensure the integrity of the overall CAAP.

Each AI should establish a CAAP to fit its own circumstances and needs, having regard to the risk profile and level of sophistication of its operations.

*Supervisory review process*

SRP is a comprehensive process that the HKMA uses to monitor and ensure the capital adequacy of individual AIs. It consists of three elements:

(i) a process to review and evaluate AIs' CAAP and their capital adequacy in relation to their risk profile, and to ensure that AIs take prompt remedial action to rectify any weaknesses and inadequacies identified (the HKMA may raise the AI's minimum CAR as a temporary supervisory measure, pending corrective action by the AI);

(ii) a process to determine the minimum CARs of individual AIs; and

(iii) an ongoing process to monitor AIs' compliance with the minimum CAR and other regulatory capital requirements.

SRP is an integral and formal part of the HKMA's overall supervisory approach. The frequency and intensity of a supervisory review will be determined by the potential risk that the AI poses to the HKMA's supervisory objectives. For example, a small and non-complex AI will not normally be subject to an intense supervisory review because the HKMA will not expect it to have sophisticated systems for risk management, and capital planning and assessment.

To enhance supervisory transparency and accountability, the HKMA will explain to the AI the factors which have led to the conclusions of its assessment, and recommend the actions the AI should take to address the concerns. The HKMA will also establish a more formal mechanism for ensuring the quality, objectivity and consistency of assessments in determining individual minimum CARs.

*Implementation plan*

The HKMA plans to issue a consultation paper this year on the proposed supervisory review framework including the criteria for assessing AIs' CAAP. When the framework is implemented in 2007, AIs are expected to have systems in place for conducting the CAAP. The HKMA will review the AIs' CAAP as part of its risk-based supervisory process.

## *Market discipline (Pillar 3)*

The objective of Basel II is to better align regulatory capital measures not only with the amount of risk that a bank undertakes but also to how well the bank manages that risk. Implementation of Basel II includes disclosures that aim at supplementing supervision through enhanced transparency and market discipline. The recommended disclosures under Pillar 3 relate to a bank's state of affairs including profit and loss; capital structure and capital adequacy; and risk exposures and assessments (qualitative and quantitative) covering general, credit risk, market risk, operational risk and interest rate risk.

Recognising the significant improvement in disclosure standards internationally in recent years, the HKMA aims to ensure that disclosures by AIs in Hong Kong continue to meet the highest standards. Specifically, the HKMA wishes to introduce a larger risk-based element into AIs' financial disclosures. The HKMA anticipates that its existing disclosure approach will be improved by additional disclosures relating to different types of risk, including qualitative and quantitative disclosures of credit risk, market risk, operational risk and interest rate risk. This, however, is subject to the caveat mentioned above, that the cost to AIs of providing information must be carefully balanced against the benefit derived from making the information available.

The HKMA's implementation plan will take into account Hong Kong's market characteristics, which may result in some variations to the Pillar 3 disclosures recommended by the Basel Committee. As a general principle, different AIs with different levels of sophistication and risk exposures will be

subject to different disclosure requirements. Thus different levels of disclosure will apply to AIs using the Basic, the Standardised and the IRB Approaches. The Disclosure Rules will be applied to all licensed banks incorporated in Hong Kong and the larger restricted licence banks and deposit-taking companies incorporated in Hong Kong, and may also apply to controllers defined in section 2 of the Banking Ordinance.

## How does Hong Kong compare with other major financial centres?

Hong Kong's implementation timetable is in accordance with that recommended by the Basel Committee for its own members, which envisages adoption of most of the approaches under the new framework starting from end-2006 and the advanced approaches starting from end-2007. Thus Hong Kong will adopt Basel II at the same time as other major international financial centres, such as London, Frankfurt and Tokyo. Because the US banking regulators have announced their intention to offer only the most advanced approaches, Basel II will take effect in the US only in 2008. From a regional perspective, the implementation timetable in Hong Kong is broadly similar to that of Australia and Singapore.

There is some variation among countries concerning Basel II's scope of application. European Union countries will apply it to all "credit institutions", irrespective of size, whereas in Japan and the United States, the new framework will be applied primarily to the large internationally active banks, with alternative arrangements made available for smaller institutions. Hong Kong has elected to follow the first approach meaning that Basel II will be applied to all AIs incorporated in Hong Kong and they will be subject to all three Pillars of the revised framework. However, to enjoy some of the flexibility of the second approach and to reduce the implementation cost, Hong Kong also intends to make available the Basic Approach for smaller institutions as an alternative to the IRB and the Standardised Approaches for the calculation of credit risk capital requirement.

## Major challenges ahead

Some major challenges remain in the run-up to the implementation of the revised framework in January 2007.

### *Time constraint for developing and drafting of complex rules*

Translating the Basel II requirements into legislation is an unprecedented task which different jurisdictions will undertake using their own forms and procedures. For Hong Kong, as mentioned earlier, this will involve making detailed Capital Rules and Disclosure Rules in consultation with the banking industry and other relevant parties, and subject to negative vetting by LegCo. If the Rules are to be tabled before LegCo by the end of June 2006, all the drafting work and the consultation process will need to be completed in less than twelve months. This is a demanding timetable in view of the length and complexity of the revised framework, and will require a substantial commitment of resources from the HKMA, the Government and the banking industry.

### *IRB validation work*

Both banks and their supervisors face many challenges in IRB validation as this is a relatively new area for both parties. For banking supervisors, IRB validation requires a big change in technical skills, particularly those relating to the quantitative aspects of validation, as well as a good understanding of highly complex internal rating systems. These challenges are faced by all supervisors of leading international banks. Industry practices in this area are rapidly evolving, and bank supervisors will need to adopt a flexible and pragmatic approach to validation that can be adapted to reflect changing industry practices. If an industry best practice standard on validation can emerge in the future, this will provide bank supervisors with a basis on which to set more prescriptive standards for IRB systems than is currently possible.

The HKMA will continue to review industry practices, and the policies of other supervisors, with a view to ensuring that its approach to validation remains consistent with best practices elsewhere. Therefore, the HKMA's approach to validation will be subject to further revision and refinement, particularly because greater convergence in the quantitative techniques for the validation of internal rating systems may occur in future.

## *Enhancing co-operation with home supervisors*

In the case of AIs that are subsidiaries of foreign banking groups, all or part of their rating systems may be centrally developed and monitored on a group basis. In applying its requirements on validation, the HKMA will co-ordinate with the home supervisors of these banking groups regarding the validation of the group-wide rating systems adopted by their authorized subsidiaries in Hong Kong. To minimise duplication and overlap in the validation process, the HKMA will rely on the validation work performed by the home supervisors, provided that the standards applied by the home supervisors are comparable to those adopted by the HKMA, and the relevant systems can adequately reflect the specific risk characteristics of the AIs' portfolios, especially taking into account any factors which may be specific to conditions in Hong Kong. The HKMA hopes to reduce the burden on AIs and their parent banks in satisfying the validation requirements of various supervisors. To make this possible, effective communication and information sharing between the home supervisors and the HKMA is necessary.

Several bilateral and multilateral cross-border implementation forums (for example, supervisory colleges) have been formed for a number of AIs at the initiative of their home supervisors. The broad principles of home/host co-operation, validation approaches, national discretion on the IRB requirements, supervisory examination schedules, and division of labour among supervisors have been discussed. The HKMA will continue to strengthen its co-ordination with home supervisors as the IRB recognition process progresses.

## *Towards achieving the Basel II objective*

Hong Kong is well advanced in its preparations for implementing the revised framework, with AIs already actively working towards adopting the approaches most suitable to their size and complexity of operations. The HKMA believes that the benefits of Basel II need to be viewed in the perspective of the enhancement of AIs' risk management more generally. In recent years, AIs have made considerable progress in upgrading their risk management systems in accordance with HKMA supervisory guidelines reflecting latest international standards and best practices, particularly in respect of non-credit risks such as interest rate risk, liquidity risk, foreign exchange risk, and stress-testing practices. This is part of the on-going effort to reinforce risk-based supervision. The adoption of Basel II is the natural extension of this process. Similarly, the enhanced disclosures that will result from the adoption of Pillar 3 requirements represent a natural evolution of the already high standards of disclosure observed by AIs in Hong Kong.

The HKMA recommends that AIs review the requirements set out in the consultative proposals, which are available on the HKMA website, and consider what system changes are necessary to comply with the revised framework, if they have not already done so. The HKMA will continue its dialogue with AIs on their preparations for the implementation, and invite them to consult the HKMA whenever they encounter any difficulties in the implementation process.