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18 Oct 2000

Use of Internal Ratings-Based Approach under the New Accord

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The Chief Executive
All Locally Incorporated Authorized Institutions

Dear Sir/Madam,

Use of Internal Ratings-Based Approach under the New Accord

1. I recently attended the International Conference of Banking Supervisors (ICBS) in Basel, Switzerland. A major theme of the ICBS was to discuss the New Capital Accord that is being developed by the Basel Committee on Banking Supervision. In this regard, I thought it would be useful to update you on the Basel Committee's latest proposals concerning the use of an internal ratings-based (IRB) approach under the New Accord, and to provide some initial guidance to authorized institutions (AIs) which may wish to adopt the IRB approach for capital adequacy purposes in due course.

   Background

2. In the consultative paper issued in June 1999 on the new capital adequacy framework, the Basel Committee said that it considered the development of an IRB approach to regulatory capital to be a key element in reviewing the Accord. This approach would base capital requirements on a bank's own internal estimates of the risk of borrower default, as well as other key drivers of credit risk (which could be estimated by either the bank or by supervisors). By offering the IRB approach as an alternative to the standardized approach based on external credit assessments, the Basel Committee aims at providing incentives for industry-wide improvements in risk management practices and linking capital requirements more closely with underlying risk.

3. The Basel Committee plans to release a second consultative document on the New Accord (of which the IRB approach will form an integral part) early next year with a view to finalizing the document later in the year. It is likely that there will be a transitional period of at least two years before the New Accord becomes effective. However, because of the lead time needed to develop an IRB approach, institutions which may wish to do so, should begin to plan for it in the near future.

   The proposed IRB framework

4. The Basel Committee will set out minimum standards and sound practice guidelines for the use of the IRB approach. In order to become eligible for the IRB approach, a bank will be required to demonstrate that its internal rating system and processes are in accordance with the supervisory standards set by the Committee. There are three basic inputs to the IRB approach: the obligor's probability of default (PD), the facility's loss given default (LGD) and the exposure at default (EAD). Estimates of PD could make use of either banks' own estimates based on historical experience or the PDs implicit in external credit ratings.
5. The ways in which these would be used to derive the capital charge for a bank's corporate loan portfolio are set out below:

    i. A bank would assign each of its loans or exposures to an internal grade, which reflects the risk associated with lending to each borrower and conforms to its internal rating scale and criteria. The bank would then assess the likelihood of default (the average one-year PD) of borrowers in each internal grade, which would be evaluated by the supervisor subject to requirements developed by the Committee.

    ii. The average PDs would be mapped to regulatory risk weights, which would be based on an assumed level of the expected LGD. For example, a borrower with a PD of 1 and a facility with a LGD of 40% might attract a risk weight of 100%. The LGD percentage will depend on whether the bank adopts the foundation or the advanced IRB approach. In the foundation approach, the supervisors would provide the LGDs associated with various loan characteristics, including the presence and type of collateral or other risk mitigants. In the advanced approach, the bank would determine the appropriate LGD percentage to be applied, having previously satisfied the supervisor about the robustness of its approach.

    iii. The modified risk weight would then be applied to the EAD to arrive at the capital charge. In most cases, the EAD would be the nominal amount of the loan but for certain exposures (e.g. commitments) it will include an estimate of future lending prior to default. As with LGD, in the foundation approach supervisors would determine EAD estimates. In the advanced approach banks would determine these themselves.

    iv. The Committee is considering whether to require adjustments to explicitly and separately reflect the maturity of exposures and/or the concentration of lending to a particular borrower (or groups of borrowers).

Supervisory standards

6. As mentioned earlier, adherence to certain supervisory standards will be a precondition for eligibility for the IRB approach. These standards are essential to ensure the integrity, consistency and accuracy of a bank's internal rating system. As indicated by the Basel Committee, the following are some of the key principles underlying these standards:

    i. Structure of rating system: In order to be eligible for the IRB approach, a bank must have a two-dimensional rating system, i.e. one which separately distinguishes borrower risk and transaction risk. The existence of a separate borrower grade is the basis for the IRB framework. In addition, banks are required to assess the risk of the transaction in a separate dimension. This would enable supervisors to take

greater comfort that transaction factors would not become embedded in the assessment of the counterparty's default probability. Under this structure, transaction or "facility" grades for different loans to the same obligor could differ based, for example, on differences in the collateral taken, seniority or other structural attributes of these loans.

ii. Number of grades: Banks should have at least six grades for performing loans, and two for problem loans. Furthermore, there should be a meaningful distribution of exposures across grades and no excessive concentrations in any particular grade.

iii. Integrity of process: The Basel Committee is also developing standards to ensure the integrity of rating assignment and review. These include a requirement that a borrower must have a rating before the credit is extended, and should undergo a full new review at least annually, and more frequently if warranted (e.g. if the borrower is deemed risky, or new material information comes to light). Furthermore, in order to ensure the integrity of the process, each individual rating must be subject to an annual independent review by someone with no direct business line responsibility.

iv. Criteria for rating assignment and loss quantification: Banks and supervisors need to ensure that rating assignment is undertaken consistently and methodically across the organization and through time, according to clearly specified criteria. Thus, a bank must have specific criteria for assigning borrowers a rating, and documentation on how these criteria are established. The criteria should demonstrate an ability to differentiate risk, have predictive and discriminate power, be both plausible and intuitive, and be specific enough to allow a third-party assessment of an exposure. A bank will also need to take into account all relevant information in assigning a rating, and demonstrate adherence to specific standards associated with the use of both quantitative techniques (e.g. credit scoring models) and expert judgement of personnel in this risk assessment process. Once the rating is assigned, banks will also need to adhere to specific supervisory standards for quantifying the PD (and other loss characteristics) associated with each rating grade.

v. Internal validation: Banks should have a robust system in place to validate the accuracy and consistency of rating systems, processes and the quantification of internal ratings. Validation should make use of backtesting periods that are as long as possible, take into account different economic environments, and be conducted frequently (and, at a minimum, annually). Data collection is also critical in allowing supervisors to assess the robustness and historical accuracy of their internal risk ratings and estimated PDs, LGDs and EADs. Thus, any bank using the IRB approach should be required to collect and store data on rating decisions, the rating histories of borrowers, the PDs associated with rating grades, and ratings migration in order to track the predictive power of the rating system.

vi. The use test: In order for supervisors to have confidence in internal ratings for regulatory purposes, it is critical that banks themselves rely on these ratings for key internal processes and decisions. Thus ratings must be an integral part of the daily credit risk measurement and management process at eligible banks. The Basel Committee is seeking to develop specific standards in this respect - for example (a) that internal lending limits and reserving decisions are linked with internal ratings, (b) default probabilities associated with internal ratings are used within the pricing of credit risk, and (c) internal ratings are explicitly linked with the bank's internal assessment of capital adequacy, in line with requirements of Pillar 2.

Initial guidance to AIs

7. The final shape of the Committee's proposals on the IRB approach will not be clear until the next Consultative Paper is issued early next year. Even then, the proposals may be subject to some change as a result of the consultation. It is difficult therefore for institutions in Hong Kong to begin detailed planning at this stage. In any case, the IRB approach may not be suitable for all institutions and not all may wish to use it. For those who may wish to do so, a certain amount of preliminary planning can at least be done at this stage. However, even those institutions who will not wish, or be able, to use the IRB approach for capital adequacy purposes, may find it useful as a guide to how they should enhance their loan classification systems for credit control purposes. In this connection, some specific advice can be given as to the aspects which institutions should be addressing:

    i. if they have not already done so, institutions should consider expanding the numbers of grades in their internal rating system;

    ii. they should attempt to estimate the probability of default associated with each borrower grade;

    iii. this means that they should also consider the adoption of a two-dimensional grading system, which separates the risk of the borrower from that of the transaction;

    iv. institutions should begin to build up a data-base of information that will allow them to validate the accuracy of their internal rating systems (see paragraph 6(v) above);

    v. institutions should ensure that their internal rating systems are fully documented;

    vi. institutions should utilise their internal rating systems as fully as possible in their day-to-day operations, e.g. for credit management, internal allocation of capital and pricing decisions.

8. The HKMA will also consider such issues when reviewing its own guidelines on loan classification. We would be glad to discuss these issues further with AIs which plan to develop internal rating systems or enhance their existing systems to conform to the standards of the Basel Committee. They may also wish to refer to the discussion paper "Range of Practice in Bank's Internal Ratings Systems" issued by the Basel Committee in January 2000. This paper presented the preliminary findings of the survey conducted by the Basel Committee. The survey collected and evaluated information about the internal rating systems of some large and diversified international banks. The paper is available on the BIS website (www.bis.org).

9. The HKMA will continue to monitor the Basel Committee's proposals on the IRB approach and will update AIs on subsequent developments. If you have any questions on the use of the IRB approach, please contact Mr. Cho-hoi Hui at 2878 1485 or Mr. Daniel Wong at 2878 1626.

Yours faithfully,
David T R Carse
Deputy Chief Executive

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