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Basel II – towards a new common language

The Basel II framework provides a common language that improves communication about risk exposures among banks, supervisors and investors.

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On 26 June 2004, the banking supervisors and central bankers forming the Basel Committee on Banking Supervision released Basel II, a new capital adequacy framework for banks, with the endorsement of G10 central bank governors and heads of supervision. Whereas the 1988 Basel Capital Accord, Basel II's predecessor, focused on the amount of capital a bank has, Basel II emphasises the measurement and management of key banking risks: credit risk, market risk and operational risk among others. Basel II compares the maximum losses a bank might suffer over the year ahead with the available buffer for the losses. It provides a methodology for a bank to prepare a statement comparing risk and buffer.

Since the introduction of modern accounting methods in the 15th century, we have used these methods mostly to describe the current state of affairs as an accumulation of past occurrences. However, in the 1990s, we developed a new technology to better assess the implications of possible developments in the future, in addition to things that actually happened in the past. Basel II has transformed this technology – quantitative risk measurement techniques – into a standard by which financial institutions can prepare verifiable and comparable statements.

This transformation will allow banks, supervisors and markets to communicate about risks with a common language. It represents a major innovation in banking supervision, but may have an even wider potential. To achieve this transformation, however, the Committee had to overcome many practical challenges, some of which will be outlined below.

[1] Secretary General, Basel Committee on Banking Supervision. The views expressed are those of the author and do not necessarily reflect those of the Basel Committee on Banking Supervision or the Bank for International Settlements. This article is based on a presentation at a meeting in Singapore on 5 July 2004 concerning the practical application of Basel II, co-sponsored by the Financial Stability Institute of the BIS and the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP). The author would like to thank Frank Packer for his help in transforming the oral presentation into the current article.

Benefits of a common language

Given the common framework provided by Basel II, all those concerned with the risk exposure of banks can now communicate with each other without having to confirm multitudes of assumptions and translate numbers based on one set of assumptions into those based on another. The new common language will facilitate the dialogue among supervisors as well as between bankers and supervisors. It will also enhance the communication between banks and the markets. Perhaps still more valuable, it will encourage all to think and behave in a forward-looking manner.

The issue of procyclicality

It is sometimes asserted that early recognition of changes in credit portfolio quality, and consequent changes in banks' willingness to lend, could exacerbate the ups and downs of economic cycles. If properly utilised to prepare well in advance for possible future difficulties, however, Basel II can work to counter, rather than amplify, cyclical fluctuations in the ability of banks to provide credit to sound borrowers.

Under Basel I, a deterioration in the credit quality of a bank's portfolio during a cyclical downturn is reflected in its capital adequacy ratio only at the last moment, ie at the time of the accounting recognition of the impairment. At that stage, banks often have no effective measures available to improve their capital ratios other than to stop extending new credit, which can in turn aggravate the downturn.

In contrast, under Basel II, the deterioration of a portfolio should begin to be reflected in the bank's capital adequacy ratio at a much earlier stage, and no further deterioration should occur in the capital adequacy ratio at the moment it is recognised as an accounting loss.

In addition, even when minimum capital requirements become binding constraints, the incentives to reduce exposures to good borrowers are much smaller than under Basel I, as this would not improve the capital ratio by much. The most effective way to reduce the total capital requirements under Basel II is timely restructuring, selling or foreclosing of exposures to borrowers already in trouble, behaviour which can pave the way for the recovery of the economy.

Benefits for market participants

The benefits of the new common language, however, will not be limited to providing early warning signals for banks and supervisors. It will be equally useful for investors, counterparties and other market participants. For instance, while investors need to know that a bank has, say, $100 billion worth of assets and $80 billion of liabilities, it is equally important for them to know whether the assets are $100 billion of risk-free cash or $100 billion worth of high-risk securities. Basel II techniques can quantify such differences and convey summary information about risk exposures. Basel II will thus complement accounting standards to meet the needs of investors and markets that have become increasingly attentive to risk. A common language to assist effective communication and to standardise disclosure on risks will materially aid the exercise of market discipline, which is a key ingredient for economic efficiency.

The challenges of transforming theory into a common language

Why did it take six years?

The Basel process has taken many years, with discussions starting in early 1998, and the first consultative paper (CP1) published nearly five years ago (Figure 1). Over this period, supervisors, bankers and academics around the world contributed invaluable comments, data and analysis. Many of the changes made through the process, especially those made between the second and the third consultative papers (CP2 and CP3), reflected the results of the Committee's intensive discussions with authorities from non-G10 countries. In particular, many of these authorities felt the need for the new framework to be not just appropriate for more advanced banking systems and markets but adaptable to a variety of infrastructure conditions.

Over the years, many changes were also needed to transform advanced risk measurement concepts into truly workable and comprehensive standards. This proved to be much more challenging than initially expected. Best practice in the industry is well established for some areas, but is still evolving for others. Moreover, the information available to allow banks to assess their risk exposures accurately is currently limited and also varies depending on the nature of the business activities considered. For these and other reasons, the general framework in many cases had to be tailored to the characteristics of specific portfolios. The conceptual approaches developed to capture potential changes in economic values also had to be adjusted given that the regulatory capital adequacy framework relies in practice on accounting information based mostly on accrued cost concepts. The Committee sought standards that were theoretically consistent but, more importantly, represented practical solutions to maximise the reliability of the results given the limitations of the available data.

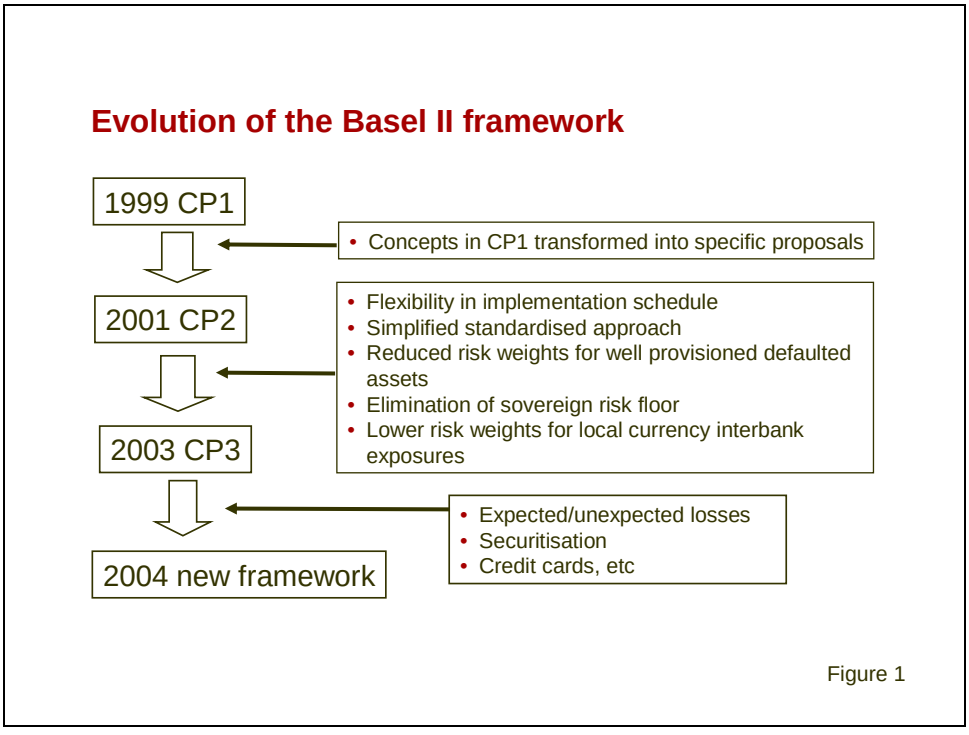

Figure 1

A VaR number can mean anything

The Basel Committee made a particular effort to transform the simple concept of value-at-risk (VaR) into comprehensive standards workable for all types of exposures, under different environments and with limited information. The reality is that a one-year 99.9 percentile VaR number can mean anything depending on the assumptions and the nature of the inputs used. Without such time-consuming attention to practical complications, a workable standard would not have emerged to serve as a common language that produces verifiable statements that are comparable across institutions.

In the following sections, the difficulties of transforming concepts into workable standards are illustrated using three examples of recent changes to the Basel II framework: expected versus unexpected losses, securitisation exposures and credit card exposures. These were the final issues that the Committee had to focus on, after its meeting in October 2003, and their resolution paved the way for the publication of the new framework in June 2004.

Expected versus unexpected losses – bridging regulatory and accounting approaches

Expected versus unexpected losses

The Committee's task was to come up with a new common language for the preparation of statements on risk exposures and capital buffers. This task was especially challenging because regulatory statements on risks and buffers have to be based on accounting statements, which are currently prepared differently in different countries. Moreover, and more fundamentally, the Committee had to bridge risk measurement concepts such as "expected losses" and "unexpected losses" and standard accounting concepts such as "provisioning" and "impairment".[2]

To illustrate the issue, suppose a bank has a $1 billion portfolio composed of exposures to corporate borrowers. For simplicity's sake, suppose as well that the bank can recover only 50% of the outstanding amount from each defaulted loan. If the bank expects that 1% of the loans will default in the coming year, then the "expected loss" for the portfolio is $5 million (ie $1 billion $\times$ 1% $\times$ 50%).

However, should economic conditions deteriorate over the coming year, then the number of defaults could turn out to be larger than expected. If the bank thinks that in the vast majority of cases (eg 99.9%) the default ratio will not exceed 10%, then the maximum loss it needs to be prepared to suffer under these conditions would be $50 million. The gap between the maximum loss and the expected loss is defined to be an "unexpected loss", in this example $45 million.

Many risk managers and supervisors adopt the principle of putting aside provisions (reserves) to cover expected losses ($5 million in the case above) and holding enough capital to cover unexpected losses ($45 million). In practice, however, the use of provisioning differs from bank to bank and from

[2] Borio and Lowe (2001) explores issues and options in provisioning policies and their interaction with capital adequacy standards.

jurisdiction to jurisdiction. This reflects differences in accounting standards and other factors such as national tax laws. Some banks provision well beyond the expected loss amount, while others provision much less.

The Committee thus had to solve the difficult question of how a single set of standards might still satisfy a wide set of practical considerations: (1) the new capital standards should ensure that a bank is able to withstand both expected and unexpected losses; (2) good provisioning practices should not be discouraged by capital standards; (3) a level playing field should be maintained among banks with different provisioning practices; (4) the risk management practices prevalent in the industry should be respected as far as possible to avoid divergence between internal control and regulatory requirements; and (5) standards of capital adequacy should be based on accounting statements as far as possible so as to keep the preparation and verification burdens at manageable levels.

An unpopular first try

The practical solution proposed in CP3 was to set capital requirements to cover both expected and unexpected losses ($50 million in the case above), with complex rules on the extent to which provisioning could reduce the capital requirements arising from expected losses. However, this proposal differed significantly from most industry practices and also resulted in various distortions, as indicated on the left-hand side of Figure 2. A significant portion of the more than 200 letters of comment that the Committee received on CP3 referred to this problem.

Many of the reservations expressed were subsequently taken on board in the 2004 framework. As shown on the right-hand side of Figure 2, the denominator of the capital ratio is now calibrated solely to unexpected losses ($45 million in the example). The gap between provisions and expected

Treatment of expected/unexpected losses (EL/UL) under the internal ratings-based approach

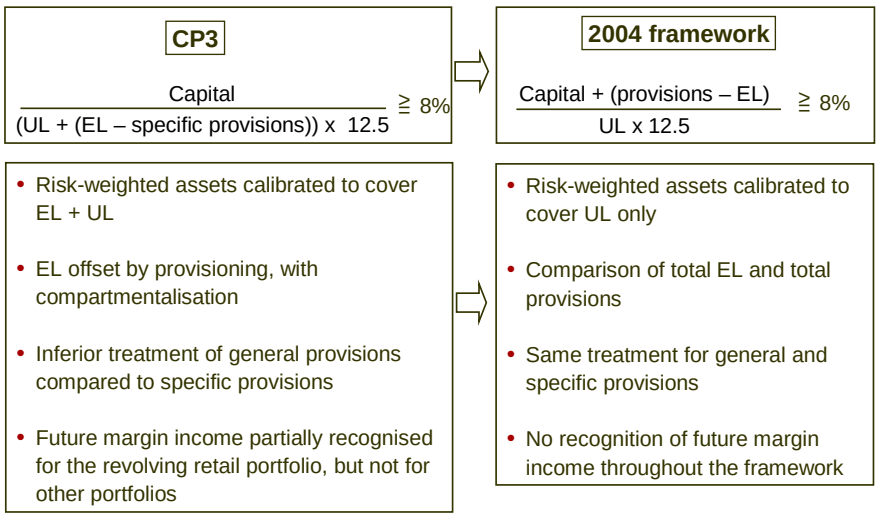

Figure 2

losses is taken account of in the numerator (hence, if not provisioned at all, $5 million will be deducted from capital in the example). Thus the 2004 framework has developed a simpler solution based more firmly on practices already in use.

Aligning the framework with industry practice

Securitisation – choosing reliable inputs given limited information

A second challenge that the Committee had to face was ensuring that those using the language of risk could compile available information into a coherent statement of exposures. The task is relatively easy when all necessary information is available, but this is commonly not the case. A particular problem was posed by securitisaton, where different banks play different roles – originator, investor, etc – and types of available information typically differ depending on the roles banks play.

Suppose the bank cited above (Bank A) decides to securitise its $1 billion loan portfolio. Bank A transfers the loan portfolio to a special purpose company (SPC), but agrees to cover the first $10 million of losses arising from the portfolio. Another bank, Bank B, agrees to cover losses beyond those covered by Bank A up to $40 million, and a third bank, Bank C, agrees to assume all the losses beyond the $50 million already covered by Banks A and B. Suppose as well that a rating agency is asked to rate Bank C's exposure and rates it AA–, but does not rate the exposures held by Bank A or B.

The $1 billion portfolio has now been decomposed into different exposures with different risks. In addition, available information differs among the three banks. Bank A, which originated the scheme, should be able to gather information on the credit quality of the securitised pool, but others might not. Bank C will continue to get rating information on its exposure from the external rating agency but not other banks. How can we measure and express the risks for the three banks?

Inputs are the key

CP3 had already tried to utilise any available information if it is reliable. Bank A will start from the information on the total amount of credit risk for the entire securitised pool (called K_{IRB}. $50 million in the case above). Utilising a Supervisory Formula provided by Basel II, Bank A will assess how the total risk of the pool is shared among the three banks and find its own share. Bank C will start from the rating information (AA–), and utilise the chart provided in Basel II showing the correspondence between the external rating and required capital (Ratings-Based Approach). If no information is available, then the capital requirement will be made equal to the size of the tranche; Bank B may need to deduct $40 million from capital in its calculation of its capital ratio (Figure 3).

The focus of the Committee's recent efforts to improve the approach to securitisation was to reduce the frequency of cases where neither of the two types of information was available. Responding to comments received on CP3, the Committee decided to acknowledge industry practices other than the two approaches cited above. Firstly, it decided to allow banks to internally assess the credit quality of the exposure and to map their assessments to equivalent external ratings under certain circumstances (the Internal Assessment

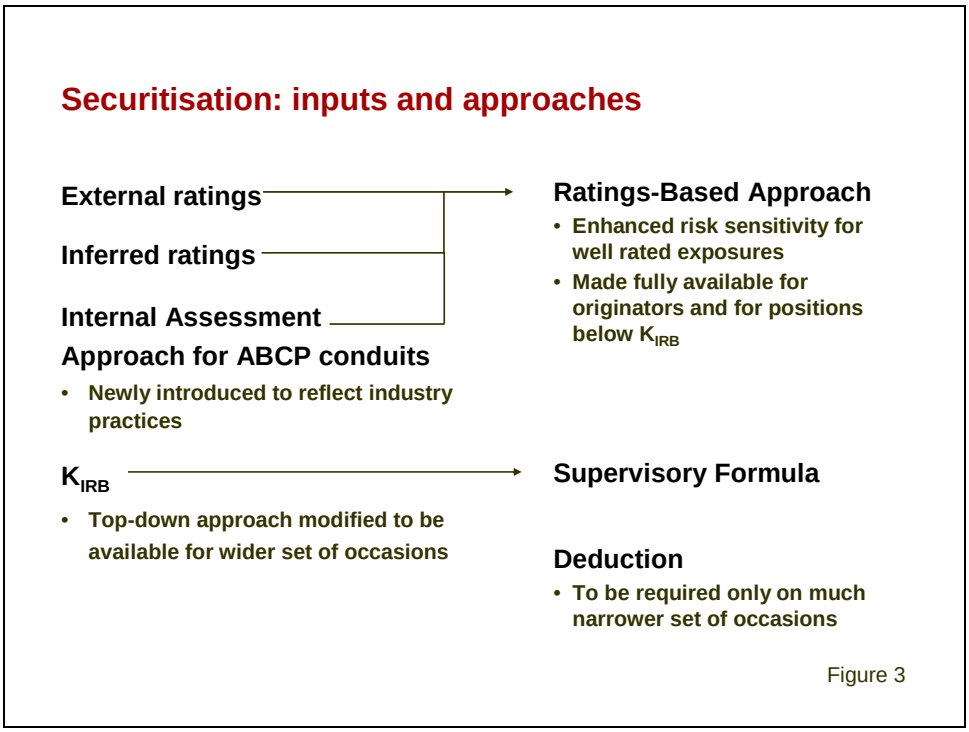

Figure 3

Approach (IAA) for exposures to asset-backed commercial paper (ABCP) conduits). Secondly, the Committee decided to expand the range of circumstances under which a bank is allowed to estimate K_{IRB} through average pool-wide information, rather than through the information on each and every asset in the securitised pool ("top-down approach").

The Committee also streamlined the specification of which approach to use if several types of information are available. The CP3 treatment differed depending on whether the bank was the originator or an investor, and on whether the exposure was below K_{IRB} or above. The 2004 framework significantly simplifies the hierarchy: if an external rating is available (Bank C), use it, and if not (Banks A and B), use other information.

Simpler solutions

To agree on the above revisions to the framework for the treatment of securitised exposures, the Committee had to assess and compare the availability, relevance and reliability of information. This was not an easy process. Nevertheless, after much experimentation, the Committee, by aligning the approaches closer to industry practice, reduced the complexity of the framework, at the same time enabling better use of available information.

Credit card exposures – reflecting characteristics specific to a particular portfolio

A third challenge that the Committee tackled was to make sure that the dictionary of the language of risk contained the right vocabulary to describe the particulars of important business lines. Credit card exposures, for example, have many unique characteristics. However, the responses to CP3 indicated that the proposals did not provide the right terms to understand and measure the risk of such exposures properly.

Suppose now that what Bank A securitised was not a portfolio of corporate loans but a large number of credit card exposures. If the expected default probabilities and recovery rate from defaulted accounts are the same as the corporate loan portfolio, then the expected loss amount will also be the same. In spite of this similarity, however, it emerged that it would not be appropriate to apply the same framework described above to this situation.

Unique characteristics and …

One distinct feature of credit card exposures is that, while economic recessions are among the key factors behind defaults of corporate borrowers, credit card borrowers tend to default for a variety of personal reasons often unrelated to general economic developments. If those personal reasons occur randomly, things will average out due to the large number of customers and the number of defaults may not fluctuate much year to year. This implies that unexpected losses could be much smaller for given expected losses, compared to the corporate loan portfolio.

CP3 had already incorporated this characteristic, but recent empirical studies gave the Committee additional insights. For example, the Committee found that random personal reasons are more important in explaining defaults of low risk customer groups than was assumed in CP3 and reduced the unexpected loss assessment for exposures to such customer groups.

Another distinctive characteristic of a credit card portfolio is that a customer borrows many times a month and repays every month, making the outstanding balance fluctuate significantly over time. To securitise such a portfolio, a bank (in our example, Bank A) often undertakes to add new exposures if the pool falls below a certain limit and to assume newly drawn exposures on its own balance sheet if the pool exceeds the limit. Thus, the components of this securitised pool will be "revolving" over time. To give comfort to investors (Banks B and C) on the quality of this revolving pool, Bank A typically agrees that the securitisation structure will repay Banks B and C before its contractual maturity (early amortisation) should the quality of the securitised pool deteriorate below a certain predefined level. Such a particular structure of "revolving securitisation with early amortisation provisions" affects the allocation of risks among Banks A, B and C.

… tailored solutions

While the risk arising from securitised undrawn lines was assumed to stay on Bank A's balance sheet under CP3, the 2004 framework now allocates it between Bank A's own balance sheet and the securitised pool, consistent with the behaviour of the "revolving" securitisation scheme. Moreover, the securitisation framework has been refined to reflect more properly the risk which can accrue to Bank A in the event of an early amortisation of the securitised pools.

Conclusion

The process leading to the 2004 framework had many difficult junctures. It took much longer than initially expected, with legitimate differences in views which had to be reconciled. Since the publication of the 2004 framework, two questions have often been asked: "Why was the process so difficult?" and "Why did it ultimately succeed?" These two questions have a common answer:

because it was the first attempt to produce a common language on risks. As it was the first attempt, the Committee had to face many unexpected challenges over the course of the discussion. However, because all the participants recognised the value of having such a common language, they were prepared to make the special effort required to find solutions.

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