

Banking on More

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CAPITAL adequacy requirements are the rules that help bank supervisors determine whether banks hold sufficient capital at all times to meet unexpected losses. The New Capital Adequacy Framework (commonly dubbed Basel II) is fast being adopted by bank regulators as an international standard for the capital that banks need to put aside to deal with current and potential financial and operational risks. Its rigorous risk and capital management requirements aim to promote international financial stability by ensuring that banks can effectively assess and manage their risks.

So why have these useful and appropriate guidelines on capital adequacy, which can cushion the market and operational blows to banks, not softened the fallout from the current market turmoil?

The answer points in the direction of uneven and incomplete Basel II implementation across countries. This crisis has occurred during Basel I, but the question raises two more fundamental issues: first, does the Basel supervisory framework—specifically Basel II—adequately address key issues related to banks' risk management practices? Second, is the full implementation of Basel II an effective remedy for current and future disturbances in financial markets? This article explores answers to these questions, and it finds that proper implementation of Basel II will strengthen the financial systems in individual countries as well as the international financial system as a whole.

Covering risks

An early form of the capital adequacy requirements was the leverage ratio, which restricted on-balance-sheet assets to a simple multiple of available capital. Today, this ratio continues to be a supplementary measure of capital strength in some countries.

Basel I, introduced in 1988, brought in a very basic degree of risk differentiation through a simple risk-weighting system (see Box 1). A key innovation was the inclusion of off-balance-sheet exposures in the risk-weighting framework, by converting these exposures into credit equivalents. Although Basel I was designed for application by inter-

nationally active banks in countries that were members of the Basel Committee, most countries in the world quickly adopted it as the capital standard.

The shortcomings of Basel I are well known—for instance, its risk-weighting framework lacked the sensitivity to differentiate credit quality in the same asset class, and it used



Capital

The subprime crisis has made Basel II implementation more important—and challenging

membership in the OECD as a measure of sovereign risk. Another shortcoming, which has been discussed often in the context of the current market turmoil, is that it did not capture well the risks associated with banks' securitization exposures, which have grown significantly since Basel I was introduced (see Chart 1).

There were other reasons to introduce changes in the framework. The banking industry had moved ahead with its risk assessment techniques and economic capital models, and it now sought a regulatory framework with a more rigorous foundation reflecting these advances. Undoubtedly, Basel II—which was issued in June 2004, with the intention that it would be available for implementation by end-2006—has stepped up to the plate in this regard. But Basel II goes much further by incorporating in its ambit risks that had been excluded earlier. And it goes beyond being a mere capital rule by its inclusion of two additional “pillars” (see Box 2). Thus, Basel II presents four distinct improvements over the previous framework. First and foremost is a set of more risk-sensitive capital requirements. The remaining improvements include stronger incentives for better risk management, a sounder supervisory framework, and the use of market incentives as additional discipline on bank behavior by requiring greater transparency in their operations.

Capturing complexities

About 100 countries plan to apply Basel II in the next few years, according to a 2006 survey by the Financial Stability Institute. This strong interest reflects its appeal for both banks and their supervisors.

By providing a range of options and approaches under Pillar 1, Basel II allows banks with varying degrees of complexity in their operations to be covered under the same broad framework. The standardized approach uses risk weights based on ratings by external agencies, while its simplified version, like Basel I, is driven by supervisory-assigned risk weights. On the other end, the foundation and the advanced internal-ratings-based approaches use risk parameters derived from banks' own internal models. Although most discussions about Basel II focus on the more advanced approaches, banks in more countries will follow the standardized approaches (which are perfectly valid in their own right and appropriate for many banks), particularly in the initial years (see Chart 2).

To manage the risks of transition to Basel II, advanced approaches are to be phased in over one to two years, during which time Basel I continues to apply. In the first two to three years of going live, a capital “floor” is to be put in place, aimed at ensuring that there is no steep drop in required capital. The

Box 1

Calculating capital requirements

Under Basel I, banks must hold capital equivalent to at least 8 percent of risk-weighted assets. This number is commonly referred to as the capital adequacy ratio. In many countries, this ratio is higher than 8 percent to reflect national circumstances. To determine risk-weighted assets for credit risk, each dollar exposure on a bank's balance sheet is assigned a given risk weight ranging from 0 to 100 percent. Off-balance-sheet exposures are included by, first, being converted into credit equivalents using a conversion factor and, second, being risk weighted.

Under Basel II, the minimum capital requirement of 8 percent of risk-weighted assets does not change, but risk weights are assigned based either on ratings provided by qualified external agencies or on banks' own models and internal rating systems. The range of mitigants (such as collateral and guarantees) available to reduce credit risk exposure has also been considerably expanded. Basel I did not cover operational risk (the risk of loss resulting from inadequate internal processes, people, systems, or external events), but under Basel II, the capital charge for this can be calculated based either on gross annual income or on banks' own models of loss estimates. For market risk, the methods of computing the capital charge do not change and can be based either on supervisory formulas or on banks' own models. In all cases in which internal models are accepted, the bar is kept significantly high in terms of data, processes, and systems.

Box 2

The three pillars of Basel II

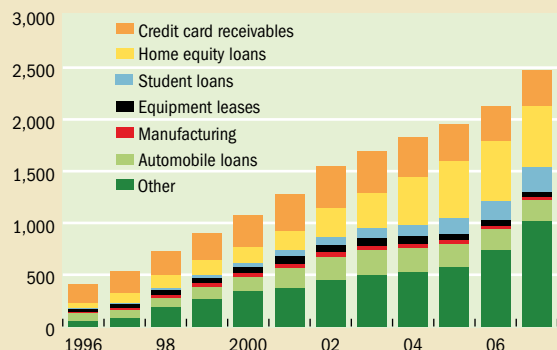
- **Pillar 1** (minimum capital requirements) refers to the set of rules and methodologies that are available for calculating the minimum capital to be held against key risks: credit, market, and operational.
- **Pillar 2** (supervisory review process) elaborates four principles that outline the expectations about the role and responsibilities of banks, their boards, and their supervisors in identifying and assessing all the risks they face (that include but also go beyond the risks covered in Pillar 1, such as credit concentration risk, interest rate risk in the banking book, and strategic risk) and in holding sufficient capital in line with their risk profile. In essence, Pillar 2 provides a strong push for strengthening both risk management and bank supervision systems.
- **Pillar 3** (market discipline) seeks to supplement the supervisory effort by building a strong partnership with other market participants. It requires banks to disclose sufficient information on their Pillar 1 risks to enable other stakeholders to monitor bank conditions.

Chart 1

Transferring risks

Banks' securitization exposures have soared and dramatically changed the banks' risk profiles over the past decade.

(global asset-backed securities outstanding, billion dollars)



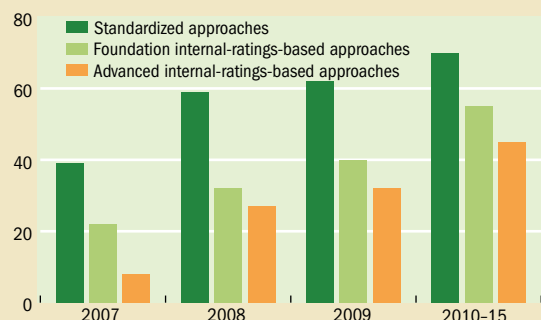
Source: Securities Industry and Financial Markets Association.

Chart 2

Popular option

In the coming years, more countries are likely to follow Basel II's standardized approaches to determining risk parameters.

(cumulative Basel II implementation plans, number of countries)



Source: Financial Stability Institute, 2006.

Still in transition

Most countries had not fully put in place the Basel II framework when the financial turmoil started unfolding in August 2007.

(Basel II implementation schedules)

	Credit risk (standardized)	Credit risk (advanced)
Australia	January 2008	January 2008
Canada	November 2007	November 2007
European Union	January 2007	January 2008
Hong Kong SAR	January 2007	January 2007
Japan	March 2007	March 2008
Korea	January 2008	January 2008
Singapore	January 2008	January 2008
South Africa	January 2008	January 2008
United States	NA	mid-2009

Sources: Supervisory agency websites and announcements.
Note: NA = not announced.

floor is gradually removed at the end of the transition period, although supervisors can require that it remain in place for individual banks.

For a variety of reasons, including legislative delays and efforts needed by banks and supervisors to train staff and acquire required capacity, implementation dates have shifted forward in many countries. The European Union member countries implemented the standardized approach in 2007 and have started implementing the advanced approaches this year, whereas the earliest that banks in the United States can go live with the advanced approaches is mid-2009. Today, most banking systems that have implemented Basel II are still in the transition period, with early implementers in the parallel-run period or live with the application of floors (see table). This shows that the framework was not yet fully implemented in many of the jurisdictions in the summer of 2007, when the turmoil began unfolding in the financial markets.

Hurting or helping the turmoil?

As several analyses and reports on the financial market crisis have revealed, the problems in the market go beyond the ambit of a capital adequacy framework. The series of events that have led to the current situation were sparked by a search for yield in an environment of historically low interest rates and fueled by poor underwriting standards, opaque and complex financial products, lax investor due diligence, incentive distortions, inadequate risk management, and weak valuation and disclosure. This crisis has also highlighted the importance of sound and thorough assessments of the quality of underlying assets, because without such assessments any regulatory regime will quickly become ineffective.

Basel II does not address all the regulatory issues that figure in the lessons learned from current market events. In particular, it is not a liquidity standard, though it recognizes that banks' capital positions can affect their ability to obtain liquidity, especially in a crisis. It requires banks to evaluate the adequacy of their capital in the context of both their liquidity profile and the liquidity of the markets in which they operate. But it is widely agreed that more work needs to be done on developing guidance for liquidity provision—and the Basel Committee is working on this issue.

But Basel II has an important role to play in other ways, which is why the IMF backs its full implementation (see Box 3). In a Basel II environment, the closer alignment of risk with capital would require more capital to be held against the riskier credits arising from weak underwriting practices. Pillar 2 would encourage banks to improve their risk monitoring and managing techniques. Pillar 3 would promote disclosure of the adequacy of individual banks' risk exposures, risk-assessment processes, and capital.

Basel II can also play an important role in addressing a key incentive distortion that arises from the treatment of securitization exposures (for example, asset-backed securities, mortgage-backed securities, interest rate swaps, credit derivatives, and liquidity facilities) in Basel I. This framework provided strong incentives for moving even low-risk assets off the balance sheet and inadequate capital treatment

for securitization of high-risk assets. This distortion is playing out in the current turmoil.

Basel II considerably strengthens the regulatory capital treatment of banks' securitization exposure through a more comprehensive treatment that harmonizes the different approaches developed by individual countries. It offers several approaches under Pillar 1 to estimate the capital that banks should hold against their exposures to securitized products in their different roles. It also raises the capital required to support securitization of high-risk assets. Pillar 2 lists actions that supervisors can take if banks provide implicit or noncontractual support. Finally, under Pillar 3, Basel II provides a separate template for disclosure on securitization exposures.

The current turmoil has provided an opportunity to examine the robustness of the Basel II securitization framework. The Basel Committee is now reviewing the framework to further strengthen both its capital treatment of certain complex securitization products and the stress-testing requirements for legal, reputational, and liquidity risks arising from the return of off-balance-sheet products to the balance sheet, and the disclosure of such items.

Procyclicality debate

Implementing Basel II can be a challenge even in the best of times, and it is certainly so in the current environment,

Box 3

Where the IMF stands on Basel II

The IMF has all along supported Basel II's full implementation, given its increased risk sensitivity as well as its enhanced focus on risk management and market discipline. However, like the Basel Committee, the IMF believes that countries should adopt the framework based on their national circumstances, including the existence of a strong framework for banking supervision.

The IMF has also cautioned against incomplete, partial, or selective implementation. The different parts of the framework complement each other and need to be implemented together. Cherry-picking parts or unduly modifying the framework would distort the incentive framework. It could also compromise Basel II's risk sensitivity and may even lead to a false sense of security and eventually harm—rather than support—financial stability.

Recognizing this strong link between effective implementation and financial stability, the IMF is leading an initiative to develop a methodology that assesses the effectiveness of Basel II implementation. It is doing so in consultation with several supervisory agencies from both industrial and emerging economies represented on the International Liaison Group of the Basel Committee. This methodology can be used both as an assessment tool and as a diagnostic review, and it is currently being field-tested in volunteering jurisdictions. Implementation reviews based on this methodology will be included in the IMF's surveillance instruments, especially the Financial Sector Assessment Programs, for use in the countries that implement the new framework.

which is viewed as the beginning of a major downturn in the business cycle. In this context, the issue of procyclicality has emerged as a central concern that needs to be monitored because of its impact on financial stability (see "Will Basel II Help Prevent Crises or Worsen Them?" on page 29).

The increased risk sensitivity of Basel II has raised some concerns about procyclicality. One cause of procyclical behavior is low capitalization and weak risk management. Undercapitalized banks will tend to make abrupt decisions to cut lending when there is evidence of a slowdown, and banks that have not assessed risks properly may also be forced to react abruptly. Increased risk sensitivity under Basel II may help to dampen some of these procyclical effects by increasing risk awareness and early detection of emerging problems, but any risk-sensitive capital framework will cause capital requirements to fluctuate if a borrower's creditworthiness strengthens or weakens.

In the internal-ratings-based approaches, the potential for procyclicality is more enhanced and could be introduced through the different components of the ratings systems—PD (probability of default), LGD (loss given default), and EAD (exposure at default). In a downturn, borrowers' ratings could be downgraded, leading to a call for more capital to support the higher credit risks or to reduce credit exposures.

Basel II approaches the procyclical propensity of risk-based capital requirements by recognizing and building in forward-looking elements to address them. Pillar 1, for example, requires that a borrower's rating represent willingness and ability to pay despite adverse economic conditions—which are modeled as covering at least one business cycle in the industry or geographic region. Similarly, it requires that estimates of LGD reflect the conditions in an economic downturn and that estimates of PD cover at least one economic cycle. There is a specific requirement to stress-test the assessment of capital adequacy, which is aimed at identifying future changes in adverse economic conditions, using scenarios of economic or industry downturns, market risk events, and liquidity conditions. In addition to these general stress-tests, the framework calls for a specific credit risk stress-test that takes into account a mild recession, modeled as two consecutive quarters of zero growth, to assess the effects on the banks' risk parameters. All of these elements will ensure that bank managers are conscious of how risk drivers can change through the cycle and in stress conditions, and that they incorporate these elements into their decision-making processes and capital strategies.

A bank's ratings philosophy also affects its ability to address business cycle effects on its rating system. Some banks may approach their Basel II implementation preferring point-in-time (PIT) systems for estimating PDs, which take into account current conditions. Others may aspire to through-the-cycle (TTC) approaches, which take into account anticipated conditions over the cycle. Both systems have their merits, and sometimes hybrids that combine both features are used. An important outcome is that PIT model outputs fluctuate more over the cycle and hence could potentially worsen the procyclical impact, unlike TTC models, which contribute

less to accentuating credit cycles because they result in capital buffers that may be adequate over the entire cycle.

The Basel II framework does not explicitly mandate the use of either the PIT or the TTC model. It does emphasize, however, that banks should address volatility in their capital allocation and define strategic plans for raising capital that take into account their needs, especially in a stressful economic environment. As the experiences of some large international banks in the current turmoil have shown, the benefits of being able to access capital rapidly in bad times may outweigh the costs of having to hold capital buffers through the cycle. If procyclicality is to be minimized under Basel II, it is important that banks understand that PIT systems will require more capital in good times to make sure capital levels are high enough under more difficult conditions.

Risk-based capital regulation is not the only source of procyclicality—the concurrent implementation of marked-to-market accounting can also potentially contribute to this effect. Under the fair value option in International Accounting Standards (IAS) 39, for instance, financial assets and liabilities are to be valued by using quoted market prices or, in the absence of such prices, by using valuation techniques (mark to model). In a downturn, the reliability and verifiability of fair values cannot be counted on in the absence of active markets and uniform valuation techniques, and that can potentially put certain assets in a downward price spiral and introduce volatility in capital. Supervisors have been concerned about such unintended effects, and the present crisis has demonstrated that further analysis on this topic is required.

Another issue that has a bearing on procyclicality is the apparent conflict of accounting for impaired assets in IAS 39 with regulatory provisioning requirements, which can be effective countercyclical measures. This conflict arises from the limited ability to project expected losses under the accounting standard (which is based on the incurred loss concept). This is an area in which countries could benefit from further experience sharing so that both accounting and supervisory concerns are met without compromising their individual objectives. It is also an area in which there is much scope for accounting practices to move closer to risk management and supervisory practices.

Adequate capital

The need for banks to have a robust capital regime—which leads them to hold capital that is adequate to the risks they face, including business cycle risk—has been borne out by the fallout from the current turmoil. Many large international banks have had to scramble to raise capital during this downturn. What, then, are the implications for bank supervisors? First, it is important to conduct accurate impact studies before transitioning to the new framework. For banks in transition, the supervisors should be prepared to extend the floors, if warranted. Second, effective implementation of Pillar 2 takes on an even greater relevance in this environment. Pillar 2 specifically requires banks to reflect in their internal assessment of capital adequacy the state of the business cycle

in which they are operating and, in turn, requires the supervisors to ensure that they take business cycle effects into account in their review of these assessments. In sum, it requires that banks be prepared for the higher capital required in downturns by building buffers in good times.

In many ways, Pillar 2 is the heart and soul of the framework and adds a solid layer of supervisory judgment to the more rules-based approach of Pillar 1. It is built around principles that define the roles and responsibilities of the banks and their supervisors in the assessment of capital adequacy, which includes as well as goes beyond the risks covered in Pillar 1. These principles accord a great degree of flexibility to national supervisors in designing their supervisory review process of bank capital adequacy. They also provide a range of actions that supervisors should take as “rapid remedial responses” if the supervisory review of banks’ capital adequacy suggests that capital is not appropriate for the risks they face. These responses can take many forms—requiring banks, for example, to strengthen their risk management systems, limit risk exposures, and, of course, hold more capital buffers.

A work in progress

Basel II is still in the process of being rolled out in many countries. When fully implemented, it will go a long way toward addressing many of the weaknesses in bank risk management and its supervision that lie at the root of the turmoil in mature financial markets. This push will be further enhanced following the ongoing review by the Basel Committee, which is expected to strengthen the capital treatment for complex financial products.

The challenges of implementing Basel II are heightened in turbulent financial markets, and this transition must be managed carefully to mitigate any unintended effects. Banks and their supervisors should make full use of provisions to mitigate procyclicality, by incorporating stress-testing for downturn conditions; being prepared to extend bank floors in transition, if warranted by impact studies; promoting the use of rating systems that take into account business cycle effects; developing a robust and credible Pillar 2 process to ensure that capital buffers are appropriate for bank risk profiles; and sharing experiences on managing capital volatility that arises from accounting changes.

But we must remember that Basel II is not an overall guide to how banks should run their businesses. Capital requirements cannot prevent banks from making mistakes—or substitute for banks’ own responsibilities for assessing risk and managing it appropriately. Capital requirements can, and should, help create the right incentives for risk taking and support good risk management generally. Other elements of a bank’s operating environment, such as accounting rules and market incentives, can also play an important role in shaping risks. Achieving consistency between these various competing influences—accounting, risk management, and regulation—will continue to be an open challenge for policymakers. ■

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