CAPITAL ADEQUACY REQUIREMENT FOR BANKS: THE EVOLVING CAPITAL ACCORD

By Mr. V.Sivanesan

1.0 Introduction

Capital adequacy is the financial barometer indicating the soundness and stability of the international banking system. In the early 1980s, as concern about international banks' financial health mounted and complaints of unfair competition increased, the Basel Committee on Banking Supervision commenced considering proposals to set capital standards for banks. The efforts with regard to capital regulation culminated into a capital accord (Basel I) in July 1988 entitled 'International Convergence of Capital Measurement and Capital Standards' among G-10 countries under the aegis of the Bank for International Settlements.

The Basel Committee on Banking Supervision develops broad supervisory standards and promotes best practices, in the expectation that each country will implement the standards in ways most appropriate to its circumstances. Agreements are developed by consensus and decisions about implementation aspects are left to each country's regulatory authorities. More than 100 countries have implemented the Basel I in some form or the other.

Basel I initially assessed capital mainly in relation to credit risk (the risk of loss due to the failure of a counter party to meet its obligations) and addressed other risks only implicitly. In 1996 the Accord was amended to take explicit account of market risk (the risk of loss due to a change in market prices, such as equity prices or interest rates or exchange rates) in trading accounts. The accord requires international banks from the G10 countries to hold a minimum total capital equal to 8% of their risk-weighted assets. The total capital has two elements namely, Tier I capital (equity capital and disclosed reserves) and Tier II capital, which include, among others, subordinated debts and hybrid debt capital instruments. The risk weight for each class of asset ranges from zero (for assets considered to be very safe, such as government securities) to 100% (for unsecured loans). Risk-weighted assets are defined as the sum of risk-weighted assets on and off balance sheet. On-balance sheet assets are assigned to different risk buckets (as per the Sri Lankan version there are five buckets 0%, 10%, 20%, 50% and 100%). Off-balance sheet items, such as letters of credit, guarantees and derivative instruments need to be first converted to a credit equivalent and then multiplied by the appropriate risk weight. In practice, the rules vary slightly across countries; in Japan, for example, shares in other firms can be counted as capital, and the minimum capital ratio for banks that are not internationally active is only 4%.

Basel I is widely viewed as having achieved its principal objectives of promoting financial stability and providing an equitable basis for competition among internationally active banks. However, over time the conceptual limitations of the accord together with financial innovation have created incentives and opportunities for regulatory capital arbitrage, and have consequently led to a reduction in its effectiveness especially in the developed world. This has prompted a debate and put pressure on the regulatory authorities to revise the Accord.

After almost five years of negotiation, in May 2004, the Basel Committee of bank supervisors reached agreement on a new Capital Accord (known as Basel II). The Basel Committee plans to implement this new Accord in member countries by end 2006. Work has already begun in a

number of countries on draft rules that would integrate new Basel capital standards with national capital regimes. The ultimate objective of the new accord is a safer and sounder banking system through better risk management at banking organizations.

The new Accord updates the capital adequacy rules to address product innovations such as credit derivatives. It also aims to reduce regulatory capital arbitrage by reducing the gains from it. As a result, regulatory risk weights are to be moved towards bankers' risk estimates, to become more 'risk-sensitive'. The methodology of the new accord is to incorporate within the regulatory and supervisory processes some of the risk management tools to evaluate and manage risk positions of banks. In the process, not only would the banks be required to improve their risk management, but also, in addition, a system would be established that could evolve naturally as risk management practices themselves evolve. There are three major components in the new accord, namely the minimum capital requirements (pillar I), the supervisory review process (pillar II), and disclosure of risks to enhance market discipline (pillar III).

According to the Chairman of the Basel Committee and Governor of the Bank of Spain Jaime Caruana,"Basel II introduces a far more comprehensive framework for regulatory capital and risk management than we have ever known,"

2.0 Shortcomings of Basel I

The Basel I has serious shortcomings as it applies to the large international banks, major one being the possibility of regulatory capital arbitrage. The methodology of Basel I is too simple to address the activities of the most complex banking organizations. The calculation of risk-weighted assets is crude. For example, in the assessment of risk countries that are members of the Organisation for Economic Co-operation and Development (OECD) are considered to be much less risky debtors than non-OECD countries, which is true on average but not in all cases.

As far as risk mitigation is concerned while some collateral is recognized in Basel I, other collateral of equivalent quality is not. Even though loans assigned the same risk weight (for example, 100 per cent) can vary greatly in credit quality. The limited differentiation among degrees of risk means that calculated capital ratios are often uninformative and may provide misleading information about a bank's capital adequacy relative to its risks. The limited differentiation among degrees of risk creates incentives for banks to "manipulate" the system through regulatory capital arbitrage by selling, securitizing, or otherwise avoiding exposures. So banks indulged in "regulatory arbitrage": they disposed of risks for which Basel 1 required more capital than the market did, such as credit card loans or residential mortgages; and they retained assets for which the market demanded more capital than the regulators did.

Banks have incentives to collect risks that they consider under priced by the Basel accord (eg: investment in low rated entities) and to repackage and sell risks that they consider overpriced (eg: lending to a blue chip company). Many new products are created precisely because the Accord required them to be treated in ways that do not reflect the economic risk. Basel 1 had an unintended consequence: its weights did not match the market assessment of the risks that banks faced.

Further, the art of risk management has evolved at the largest banks significantly since the introduction of Basel I. Banks themselves have developed new techniques to improve their risk management and internal capital measures in order to be more effective competitors and to control and manage their credit losses. A revised accord that is carefully crafted could speed the adoption of still better techniques and promote the further evolution of risk measurement and management by spurring increased investment in the process.

3.0 The New Accord

The new capital accord is more complex than its predecessor, for several reasons. According to Roger Ferguson of the Federal Reserve Board, one reason for its complexity is the assessment of risk in an environment of a growing number of financial instruments and strategies having subtle differences in risk reward characteristics being inevitably complicated. The multiple objectives of the new accord also make it more complex. The major objectives of Basel II are:

• Improvement of risk measurement and management in banks

• Linking to the extent possible, the amount of required capital to the amount of risk taken by banks ((pillar I of the new accord attempts to achieve this objective)

• Further focusing the supervisor-bank dialogue on the measurement and management of risk and the connection between risk and regulatory capital (pillar II has been introduced with this objective in mind)

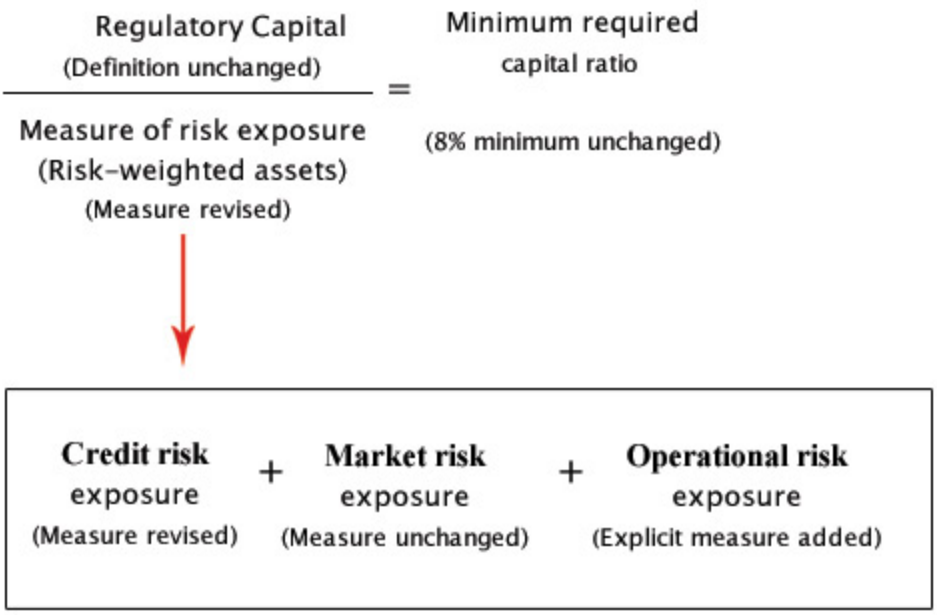
• Increasing the transparency of bank risk-taking to the customers and counter parties that ultimately fund - and hence share - these risk positions (pillar III attempts to meet this objective)

3.1 Pillar I: Minimum Capital Requirements

As stated earlier the new Accord is built on three mutually reinforcing elements, or “pillars”. Pillar I of the new accord sets capital requirements against three risk categories: credit risk (introduced in 1988); market risk (introduced in 1996), and operational risk (a new category). Each of the risk categories will offer a menu of approaches varying from the crude but penal to the sophisticated and more generous. The concept of the capital ratio would remain unchanged. As under Basel 1, the numerator of the ratio would be its regulatory capital and the denominator would be its risk-weighted assets. The minimum required capital ratio (8%) and the definition of regulatory capital (equity, reserves, subordinated debt etc.) would not change from Basel I. What would change is the definition of risk-weighted assets – the method used to measure the riskiness of the loans and investments held by the bank. Specifically, Basel II would make substantive changes in the treatment of credit risk and would provide for specific treatment of securitization, a risk management tool not fully contemplated by Basel I. The Pillar I would explicitly take account of operational risk – the risk of loss resulting from inadequate or failed internal processes, people, or systems or from external events. The major changes in the new accord is summarized in diagram I:

Diagram I

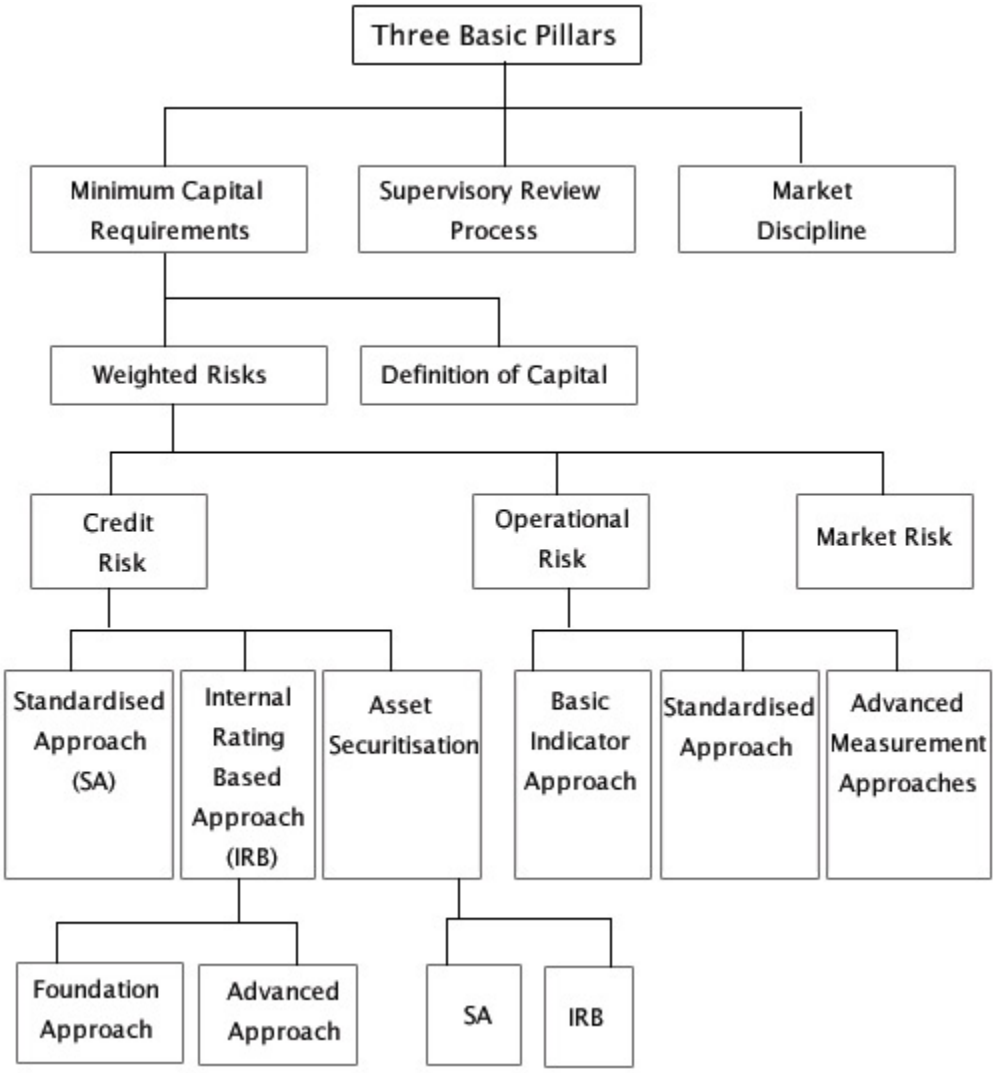
Proposed Changes to Elements of the Capital Ratio under Basel II



In contrast to Basel I, which applies the same framework to all banks, Basel II, offers three options for measuring credit risk and three for measuring operational risk. The purpose of offering options is to allow each bank and its supervisors to select approaches that are most appropriate to the bank's operations and its ability to measure risk. Diagram II illustrates the major components of the new accord:

Diagram II

Major Components of the New Accord



3.1.1 Credit Risk

As indicated in the above diagram, the options for calculating credit risk are the standardized approach and two internal-ratings-based (IRB) approaches – the foundation approach and the advanced approach.

The simplest approach to credit risk is called the 'standardised' approach. Instead of basing the risk weight on the category of borrower (bank, sovereign, public sector entity, others), this approach would use borrower's rating for the computation of capital charge. The ratings are to be provided by External Credit Assessment Institutions (ECAIs) such as rating agencies, national credit registers and export credit guarantee agencies.

The more sophisticated 'IRB' approach relies on banks' estimates of key determinants of credit risk. The foundation IRB approach uses banks' estimates of a borrower's probability of default (PD), while the regulator sets other inputs. Under the foundation version, rigid supervisory rules would establish many of the credit risk parameters that would determine bank capital requirements. That is because the foundation approach is designed to address either the bank

in the early stages of developing its risk management systems or those operating in a supervisory environment that is not yet prepared to validate and enforce the sound practice standards applicable to banks under the Advanced IRB approach. In such countries, the foundation version may be useful as a transition for banks that have not yet developed the ability to estimate all of the necessary credit parameters or have not convinced their supervisors that they can both do so and use those parameters in making credit decisions. The foundation version may also be useful for large organizations that have relatively limited business lines.

In the advanced IRB approach, the bank may estimate other inputs, such as Loss Given Default (LGD), but the mapping from input to risk weight is still set by the Basel Committee. In the IRB approach, the risk weight is a function of four variables. The function is concave in probability of default (PD); linear in effective maturity (M); and proportional to loss given default (LGD) and to exposure at default (EAD). Estimating the impact on funding costs requires assumptions about M, LGD and EAD, and on banks' internal ratings.

LGD:-	Measures the proportion of the exposure that will be lost if a default occurs.
PD:-	Measures the likelihood that the borrower will default over a given time horizon.
EAD:-	Measures the amount of the facility that is likely to be drawn out if default occurs.

The details for calculating capital charges would vary somewhat according to the type of exposure (corporate or retail, for example). The difference between the two IRB approaches is that the foundation approach would require the bank to determine only each loan's probability of default, and the supervisor would provide the other risk inputs, under the advanced approach, the bank would determine all the risk inputs, under procedures validated by the supervisor. Banks choosing to operate under either of the two IRB approaches would be required to meet minimum qualifying criteria pertaining to the comprehensiveness and integrity of their internal capabilities for assessing the risk inputs relevant for its approach.

Banks use a number of techniques to mitigate the credit risks to which they are exposed. Exposure may be collateralised in whole or in part with cash or securities, a loan exposure may be guaranteed by a third party, or a bank may buy a credit derivative to offset various forms of credit risk. Additionally banks may agree to net loans owed to them against deposits from the same counter party. Where these various techniques meet the requirements for legal certainty as prescribed in the new accord, the revised approach to credit risk mitigation allows a wider range of credit risk mitigants to be recognised for regulatory capital purposes than is permitted under the 1988 Capital Accord.

While the use of risk mitigation techniques reduces or transfers credit risk, it simultaneously may increase other risks to the bank, such as legal, operational, liquidity and market risks. Therefore, it is imperative that banks employ robust procedures and processes to control these risks.

3.1.2 Operational Risk

One of the complexities of unbundling risk related capital charges is the need for an explicit

capital charge for operational risk. Devising such a charge has proved extremely difficult because of a lack of both an agreed upon methodology and credible industry data. This has required the adoption of a strategy to permit banks to use their own internal measurement approaches – subject to quantitative and qualitative criteria and, on a transitional basis, to a minimum or floor capital charge.

The three proposed options for calculating operational risk are the basic indicator approach, the standardized approach, and the Advanced Measurement Approaches (AMA). The basic indicator and standardized approaches are intended for banks having relatively less significant exposure to operational risk. They require that banks hold capital against operational risk in an amount equal to a specified percentage of the bank's average annual gross income over the preceding three years. Under the basic indicator approach, the capital requirement would be calculated at the firm level; under the standardized approach, a separate capital requirement would have to be calculated for each of eight designated business lines. Banks using these two approaches would not be allowed to take into account the risk mitigating effect of insurance.

The AMA option is designed to be more sensitive to operational risk and is intended for internationally active banks having significant exposure to operational risk. It seeks to build on the banks' rapidly developing internal assessment techniques and would allow banks to use their own methods for assessing their exposure, so long as the methods are judged by supervisors to be sufficiently comprehensive and systematic. No specific criteria for using the basic indicator approach would be set forth, but banks using that approach would be encouraged to comply with supervisory guidance on sound practices for managing and supervising operational risk. Banks using either the standardized approach or the AMA approach would be required to have operational risk systems meeting certain criteria, with the criteria for the AMA being more rigorous.

3.2 Pillar II : Supervisory Review Process

Pillar 2 says that banks must increase their capital cushions if national supervisors consider them too low, even if they are above the minimum. It also promotes the notion that supervisors, on the basis of their knowledge of industry practices, should provide constructive feedback to bank management on their internal assessments. Three main areas that might be considered for treatment under Pillar 2 are as follows:

1. Risks considered under Pillar 1 that are not fully captured by Pillar 1 process. E.g. Credit concentration risk
2. Risk areas not taken into account by Pillar 1. E.g. Interest Rate Risk in the banking book, Liquidity Risk and business and strategic risks
3. Factors external to the bank. E.g. Impact of Business cycles

The supervisors are supposed to review and evaluate banks' internal capital adequacy assessment and strategies as well as their ability to monitor and ensure their compliance with regulatory capital ratios. The supervisors should take appropriate supervisory action if they are not satisfied with the results of this process and they should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.

3.3 Pillar III :Market Discipline

The risks to which banks are exposed and the techniques that banks use to identify, measure, monitor and control those risks are important factors market participants should consider in their assessment of a bank. Pillar 3 stresses the importance of market discipline, and says that banks should become more open about risks to their capital positions and profitability. This pillar is seen as particularly important because some banks under Basel II would be allowed to rely more heavily on internal methods for determining risk, giving them greater discretion in determining their capital needs. Major areas of required disclosures are:

i) The risk management objectives, policies, strategies and processes in each of the risk areas, including qualitative disclosure. The supervisors should ensure qualitative disclosure accurately reflects the position of a bank. Also a bank should have a formal disclosure policy approved by its Board of Directors.
ii) Information to assess how capital requirements apply to the bank and how entities within the banking group are treated for capital purposes.
iii) The actual amount, components and features of all capital instruments especially in the case of innovative, complex and hybrid capital instruments.
iv) Capital adequacy ratio and the risk weighted assets and a summary discussion of the bank's approach to assessing the adequacy of its capital to support current and future activities.
v) Disclosures on credit risk, credit risk management, equities and interest rate risk under the banking book, asset securitization, market risk and operational risk etc.

There is a strong case for improving disclosure standards in most countries. Weak disclosure standards undermine the effectiveness of all three pillars of the new accord. However, the production and the processing of information are costly. The pillar III seeks to complement the other two pillars with stronger market discipline.

4.0 The Challenges of the New Accord

The challenges of the new accord are daunting, indeed, if the effort does nothing but improve risk management at banks and improve the risk focus of supervisors, it will be worth the time and resources that have been expended.

The new accord is expected to decrease charges for many classes of credit risk. This is expected to be offset by a totally new charge for operational risk. So the overall minimum regulatory capital in the banking system is expected to remain at the same level. The expected reduction in the overall capital requirements will allow banks to plough more capital back into banking business, as long as the banks can show that they have more stringent risk evaluation systems. However, Banks that do not have internal rating systems will need to hold significantly higher levels of capital, as a result of the operational risk capital charge.

For many activities, and thus for a few banks, the new regime implies big changes in capital requirements. The new operational risk element, for instance, will hit banks specializing in areas - such as custody or asset management - that involve little lending and therefore in the past have needed little capital to meet the minimum regulatory capital. Almost any bank with a

lot of retail business – except for sub-prime lending and perhaps credit cards – can expect its minimum capital to fall as the risk weight for retail exposures is to be reduced.

The adoption of the new Accord requires a significant improvement in supervisory resources. The supervisory authorities are expected to build up their expertise substantially in both quantitative and qualitative terms. The Pillar 2 requires supervisors to have tools to evaluate the adequacy of banks' internal risk management systems/internal capital assessments and to have means of requiring banks to hold capital in excess of the Pillar I minimum, where necessary. The adoption of the IRB approach, even under the foundation level requires considerable investments in IT/human resources and rigorous supervisory oversights. The data management capabilities of banks will be critical for the adoption of IRB approaches that require the banks to estimate the credit quality of their borrowers internally.

The reliance on ECAIs under the standardised approach for assigning risk weights is another area of concern. The rated entities, especially in developing countries, which have exposure to the banking system, are very few in number. Further, the use of external credit rating agencies in the regulatory process may act as a disincentive for the banks to improve their credit risk management systems.

5.0 Developing Countries and the New Accord

Jonathan Ward (2002) points out that the new accord has not been designed with developing countries in mind, and it is likely to fail in developing countries. The developing countries experience greater macroeconomic volatility, and greater volatility of external flows and greater vulnerability to external shocks. Further the skills are scarce in developing countries. Supervision and market discipline require skilled supervisors and market participants. Even the more basic capital requirements rely on the skill of bankers since any capital adequacy rule relies on the valuation of assets that have no market price.

The developing countries will be under pressure to implement the new accord. Though according to the official view the implementation of the Accord is voluntary, in reality it is not entirely voluntary. Countries, that do not implement, risk sanctions in several ways. The lending programmes of the international institutions linked with conditions attached, and these conditions may include compliance with international regulatory standards.

Given their resources and capacity the option of implementing Basel II in full is not a viable option for developing countries in the near future. Implementing a restricted form of Basel II, using only the simple capital adequacy options and relying only to a limited extent on supervision and market discipline, would economise on scare resources. The option of incorporating certain provisions of the new accord in to their current version, which has been proposed by a group of non-G10 regulators, may be a better option; however, inclusion of Pillars 2 and 3, would require significant improvements both in supervisory resources and disclosure standards. Alternatively, developing countries could take the Basel framework as a starting point and, using the guiding principles, simplify the regime and adapt it to local circumstances.

Most of the banks in Sri Lanka are in the early stages of developing their risk management systems and the supervisory environment also is not yet prepared to validate and enforce the sound practice standards applicable to banks under the advanced internal risk measurement approaches. The new accord contains incentives to improve internal risk management systems of banks. Banks in Sri Lanka are not sophisticated enough to adopt the new accord in the near future, in whatever the form. However, few foreign banks operate in Sri Lanka will be in a position to adhere to internal rating based capital measurement systems.

The Sri Lankan version of capital adequacy takes into account only the credit risk and there is no explicit charge for market risk. The 1996 amendment to the capital accord with regard to market risk has not been incorporated yet in Sri Lanka.The market risk component of the existing accord is to be retained even in the new accord. In this background it seems the viable option for Sri Lanka would be, while taking steps to implement the amendment with regard to market risk, to introduce specific measures to enhance the risk management capabilities of banks. This would lay the foundation for the adoption of a more risk sensitive approach for capital measurement at least at a future date.

The quality and content of market information disseminated by banks in Sri Lanka also need mprovement in order to enhance market discipline. The supervisory resources need to be improved with a view to equipping the bank examiners to perform the additional tasks they are supposed to undertake under the Basel II methodology.

6.0 Conclusion

The critics point out that the new accord, in which several options to credit and operational risks are available, replaces one form of regulatory arbitrage with another. The IRB approach generates higher capital requirements than the standardized approach on lower-quality assets, but lower requirements on higher-quality assets. Banks on the IRB approach will tend to acquire all the high-quality assets and banks on the standardized approach all the low-quality assets – the assets for which the standardised approach undercharges. Banking groups will be tempted to ‘cherry-pick’ between the two regimes, but even if they do not, the banking system will do it automatically.

Unless suitably modified, the adoption of the new accord in its present format would result in a significant increase in the capital charge for banks, especially in the emerging markets. The benefit of risk mitigation techniques also may not be available as most of the banks in emerging markets are not in a position to comply with the preconditions stipulated by the Basel Committee.

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