The new Basel capital accord: Rationale, design and tentative implications for India

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1. Introduction

The structure and operations of banks in India, have been evolving rapidly during the last two decades. With the revolution in information technology and an associated increase in competition, at both the national and international levels, the major financial intermediaries have become global in geographical coverage and universal in their financial functions, encompassing banking, securities and increasingly, insurance.

This increasing competition combined with difficult financial conditions in the early 1980s, put downward pressure on banks' profit margins and capital ratios (measured as the ratio of capital to total assets) in both developed and developing countries. Commercial banks' concerns about international competitiveness compelled the regulatory community to respond with an international agreement, which was the genesis of the Basel Capital Adequacy Risk-related Ratio agreement of 1988.

A question that immediately springs to the mind is: why do banks need to hold capital? Two reasons have generally been advanced in support of the same. First, bank capital helps to prevent bank failure, which arises in case the bank cannot satisfy its obligations to pay depositor and other creditors. Second, the amount of capital affects returns for the owners (equity holders) of the bank. Following Mishkin and Eakins (2003), we examine each of these in turn.

As regards the first issue, let us consider a simple numerical example. Consider two banks: one with capital to asset ratio of 10 per cent (high capital bank) and another with capital to asset ratio of 4 per cent (low capital bank), and let the hypothetical balance sheets of the two banks be as given below (with all figures in Rs. crore):

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High Capital Bank				Low Capital Bank			
Assets		*Liabilities*		*Assets*		*Liabilities*	
Reserves	10	Deposits	90	Reserves	10	Deposits	96
Loans	90	Capital	10	Loans	90	Capital	4

Suppose both banks make some loans, only to discover subsequently that Rs. 5 crore of their loans become worthless. When these bad loans are written off (valued at zero), the total value of assets declines by Rs. 5 crore, and so bank capital, which equals total assets minus liabilities, also declines by Rs. 5 crore. The balance sheets of the two banks thus becomes:

High Capital Bank				Low Capital Bank			
Assets		*Liabilities*		*Assets*		*Liabilities*	
Reserves	10	Deposits	90	Reserves	10	Deposits	96
Loans	85	Capital	5	Loans	85	Capital	-1

The high capital bank is able to take the Rs. 5 crore loss in its stride, because its initial cushion would imply that it still has a positive net worth (bank capital) of 5 after the loss. The low capital bank, on the other hand, had a negative net worth after the loss; in other words, it turns insolvent. Capital therefore acts as a cushion to lessen the chance of the bank turning insolvent**.**

Second, it is commonly agreed that a basic measure of bank profitability is the return on assets (RoA): it indicates how much profits are generated on average for each unit of asset.[2] However, what the bank's owners (equity holders) care about most is how much the bank is earning on their equity investment. The information is provided by the other basic measure of bank profitability: return on equity (RoE). There is a direct relationship running between RoA (which measures how efficiently a bank is being run) and RoE (which measures how well the owners are doing on their investment). This relationship is determined by the equity multiplier (EM), which defines the amount of assets per unit of equity capital. In other words, the EM traces the interlinkage between RoA and RoE.[3] Linking to the earlier example, the high capital bank initially has Rs.100 crore of assets and Rs.10 crore of equity, which gives an EM of 10 (=Rs.100 crore/Rs.10 crore). The low capital bank, by contrast, has only Rs.4 crore of equity, so its equity multiplier is higher, equalling 25 (=Rs.100 crore/Rs.4 crore). Suppose that both these

[2] Return on Asset (RoA) = Net profit after taxes/Total asset; Return on Equity (RoE) = Net profit after taxes/Equity capital; Equity Multiplier (EM) = Total asset/Equity capital

[3] To see this, note that RoE= Net profit after taxes/Equity capital=(Net profit after taxes/Total asset)*(Total asset/Equity capital)=RoA*EM.

banks have been equally well run, so that they both have same return on assets of 1 per cent. The RoE for the high capital bank equals 1%*10=10 per cent; while RoE for the low capital bank equals 1%*25=25 per cent. In other words, the equity holders of the low capital bank are better placed than those of their high capital counterparts. This would mean that, given the return on assets, the lower the bank capital, the higher the return for the owners of the bank.

The above discussion suggests that bank capital imposes benefits as well as costs on banks. Bank capital benefits owners of a bank in the sense it makes their investment safer by reducing the likelihood of bankruptcy. On the other hand, bank capital is costly, because the higher it is, the lower will be the return on bank equity for a given return on assets. In determining the amount of bank capital, managers would need to factor in this trade-off: The increased safety that comes with higher capital (the benefit) and the lower return on equity that comes with higher capital (the cost). It often happens, however, that because of both *moral hazard* and the *principal-agent* problems, banks may be induced to hold less bank capital than optimal. To override this contingency, it is customary for national regulatory authorities to impose minimum capital requirements on banks. The emergence of the European Community provided a fillip to the harmonization of financial practices (including bank capital requirements) and it was but natural that this process of harmonisation should gradually take on an international aspect.

It is in this context that the Basel Capital Accord of 1988 of the Bank for International Settlements (BIS, 1988) is an event of paramount importance to the banking world. It was the outcome of a long-drawn out initiative to strive for greater international uniformity in prudential capital standards for banks' credit risks. The objectives of the Accord were not only to strengthen the international banking system, but also to promote convergence of national capital standards, thereby ironing out competitive inequalities among banks across countries.

The 1988 Basel agreement was not a legal document. It was designed to apply to internationally active banks of member countries of the Basel Committee on Banking Supervision (BCBS) of the Bank of International Settlements (BIS) at Basel, Switzerland, but the details of its implementation were left to national discretion. The reasons for the primarily G-10[4] centric structure of the institution of the 1988 Accord are not far to seek.

[4]G-10 comprises Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, United Kingdom and United States; the group was subsequently extended to incorporate Luxembourg, Switzerland and more recently, Spain.

First, over 80 per cent of global banking assets rest with banks incorporated in these countries. Therefore, the focus of banking systems in these countries was a priority agenda. Second, with state-of-the-art information technology being used by banks in these countries, it was believed that a pro-active approach to banking supervision in these countries would necessarily stave off any failures and also addresses the dangers of contagion stemming therefrom. While these facts might have had a fair degree of credibility in an autarkic world of the 1980s, the inference may not be as valid in the globalised world of today. Moreover, the way in which the minimum capital adequacy ratio of 8 per cent was incorporated in regulatory regimes varied across countries, and several applied more stringent standards. The impact of the 1988 Accord rapidly spilt beyond the original G-10 countries and by 1999, it formed part of the regime of prudential regulation not only for internationally active, but also for domestic banking systems in more than 100 countries (BIS, 1999). The major success of these regulatory standards was to raise the capital levels in banking systems, especially in G-10 countries. As observed by Jackson *et.al.*(1999), the average ratio of capital to risk-weighted assets of major banks in the G-10 countries increased from 9.3 per cent in 1988 to 11.2 per cent in 1996.

From the very beginning, the 1988 Accord was subject to criticism, which was hardly surprising in view of the fact that the Accord had to accommodate banking practices and regulatory regimes in countries with varied legal systems, business norms and prevalent institutional structures. Criticisms were mainly directed at its failure to make adequate allowance for the degree of reduction in risk exposure achievable through diversification and at its arbitrary and non-discriminatory calibration of certain credit risks. Illustratively, a credit to a blue-chip corporate was treated in the same fashion as a loan to a lesser-known financial company. The uniform weight attributed in almost all circumstances to private borrowers (regardless of their creditworthiness) was considered an incentive to regulatory arbitrage, under which banks were tempted to exploit the opportunities afforded by the Accord's classification of risk exposure to increase their holding of high-yielding, but also high-risk assets for a given level of regulatory capital. However, recurring crises over the past two decades in both the developed and developing world have provided graphic evidence of the fact that, given the globalisation and univeralisation of banking operations, the onset of banking crises can impact the banking systems in both the home and host countries in equal measure through contagion effects. Since banking crises are difficult to predict and can have devastating effects on

the macro-economy, proactive supervision of banks in developed economies while necessary, is not sufficient to prevent failures. Thus, with both international and domestic banking systems coming increasingly under the same regulatory umbrella and the growing interest in adoption of international standards being shown by the non G-10 countries, the distinction between 'internationally active' *versus* 'domestic' banks, on the one hand, and 'sophisticated' *versus* 'less sophisticated' banks, on the other, tends to have limited relevance than in the past (Narain and Ghosh, 2003).

In view of these factors, the Basel Committee proposed a *New Capital Adequacy Framework* (hereafter referred to as the "Basel II") in June 1999 incorporating three major elements or "pillars": (a) *minimum capital requirements*, based on weights intended to be more closely aligned to economic risks than the 1988 Accord; (b) *supervisory review*, which set basic standards for bank supervision to minimise regulatory arbitrage; and, (c) *market discipline*, which envisages greater levels of disclosure and standards of transparency by the banking system. Ever since its publication, the Basel II has generated intense debate among policymakers and academia alike. Various questions have been raised in this connection: does the Basel II discriminate against developing countries? Will the Accord engender a reduction in the flow of resources to emerging markets? Considering the fact that a number of economies including India are envisaging implementing the Basel II, these are questions of topical relevance.

It is in this context that, against the light of the historical backdrop of the 1988 Accord, the present paper focuses on the Basel II, its objective, the building blocks and the concerns expressed about the same. The discussion is structured as follows. A brief discussion on bank regulation I contained in Section 2. A historical backdrop of the Basel II and its broad contours is given in Section 3. Section 4 is devoted to the possible implications for the emerging market economies of the Basel II. Section 5 focuses on the reactions to the Basel II, especially from the viewpoint of developing countries, with some emphasis on the Indian position. Section 6 develops a simple empirical model to examine the factors influencing capital position of banks in India. Apart from presenting the concluding observations, the last section also attempts a prognosis of the future scenario vis-à-vis the Basel II.

2. The Regulation of Banks

There are three key types of market failure in banking, *viz*., those relating to externalities, information asymmetry and monopoly (Goodhart, 1998). The most obvious type of potential externality in banking relates to the risk of contagious runs, when failure of one bank leads to heightened risk of failure by others. The possibility of runs, even for sound and solvent bank, arises basically from their function of 'maturity transformation': offering savers alternate forms of deposits according to their liquidity preferences, while providing borrowers with loans of desired maturities. As regards information asymmetry, if it is difficult or costly for the purchaser of a financial service to obtain sufficient information on the quality of the service in question, they may be vulnerable to exploitation by financial intermediaries. Such phenomena are of particular importance to retail users of banking and other such financial services, because clients are often seeking advice or safekeeping for a sizeable proportion of their wealth, contracts are often one-off and involve a commitment over time.

In regard to financial regulation, however, there is a slight change in emphasis in the objectives of regulation in the sense that the focus is on maintaining systemic stability and protecting the interest of the customer. Maintaining systemic stability is important because the social costs of financial distress are high in the form of the contagion effect. A wholesale customer, such as a corporate or large net worth individual, should be in a position to have the capacity and resources to make informed choices. But, a retail customer, such as small saver or small borrower, cannot incur the cost of getting information, acquire or employ skills to analyze, have large enough volumes to learn from experience, big enough portfolio to spread risks, and as such will be unequal in relation to the financial intermediary. Above all, economies of scale are likely in monitoring of information on a collective basis. In brief, the why of financial regulation needs to be considered essentially in the light of the primary objectives, namely, maintaining systemic stability and protecting the interests of the retail customer; and implicitly other objectives will have to be secondary.

There has been significant debate on whether banks are special, and should be treated as such. The rapid development of capital markets, increasing importance of non-bank sources of financial intermediation and the emergence of 'one-stop financial services' have led to the erosion of importance as well as uniqueness of banks as financial institutions. There are, however, three major reasons adduced for treating them as special. First, they are participants in the payments system and hence are the backbone

of the financial system. The systemic risks of any one bank being affected either on account of its banking operations or on account of non-banking operations are high. Second, the banks contract for liquid deposits to acquire illiquid assets and hence are vulnerable to liquidity crisis. This would underline the need for a lender of last resort. Third, the banks are the major service providers for retail customers and are, therefore, on a separate footing in terms of consumer protection, especially since the customers of a bank are typically risk-averse. In other words, while retaining incentive for banks to be always solvent, there is constructive ambiguity in extending liquidity by lender of last resort. Thus, banks, particularly those with access to payments system are generally treated as a separate class in a regulatory framework – particularly in developing countries.

Regulation policy needs to recognize and admit that the fact of regulation does not guarantee that there will be no risk of failure or insolvency of a regulated unit. There is always a danger that people perceive that mere act of an entity being regulated provides a guarantee from the regulator that it is risk-free to transact business with the unit. The risks arise due to several problems, mainly related to lack of information. First, it is difficult to precisely assess even for the regulator how good the internal controls in a regulated entity are on an on-going basis. More importantly, there is no way of perfect and continuous assessment of adherence to the external rules imposed by the regulator.

Regulation may be institution-based or function-based or even product- or market-oriented. In other words, a regulator may regulate banks, though banks may involve themselves in other activities such as being an intermediary in capital markets. Alternatively, the capital market regulator may regulate all activities relating to public issue or trading in securities whether those functions are performed by banks or non-banks. Similarly, all institutions which take public deposits may be regulated by one regulator. Yet another approach is to consider regulation in terms of markets say government securities, or money market or forex. In India, for instance, capital markets and insurance activities were regulated by Ministry of Finance till the Securities Exchange Board of India (SEBI) and Insurance Regulatory and Development Authority (IRDA) were set up recently while Development Financial Institutions (DFIs) have recently begun to be regulated / supervised by Reserve Bank. While most banks are regulated by the RBI, some are under dual control of Government and RBI. The Department of Company Affairs (DCA) regulates deposit-taking activities of corporates

other than banks and non-banking financial companies registered under companies Act, but not those which are under separate statutes.

3. The New Basel Accord: Genesis and Major Features

A Brief Historical Backdrop

The 1988 Accord reflected a consensus of the member countries of BIS as to the proportions in which various suitable financial instruments could be permitted to be part of the banks' capital base. It is perceived that a bank should maintain a certain amount of capital (numerator) depending on its riskiness of its asset portfolio (denominator) to cover for the risks of failure. Three basic categories of capital could be purported to serve these purposes: debt capital, equity capital and hybrid capital (which combines features of equity and debt). There existed wide divergence in market and regulatory practices among Basel member countries regarding which instruments could be considered for possible inclusion in the three basic forms of capital. Accordingly, the solution adopted for the 1988 Accord involved distinguishing between two tiers: tier I (comprising equity shares, disclosed reserves and capital reserves) and tier II (comprising less pure forms of capital like hybrid debt instruments, sub-ordinated debt[5] and undisclosed reserves); furthermore, tier II (or 'supplementary') capital in the aggregate was limited to a maximum of 100 per cent of tier I capital (Box 1). The pattern of risk weights on assets was accordingly specified, linking the capital position of banks to its risk-weighted assets. The ratio, thus arrived, was not to fall below 8 per cent.

The 1988 Accord was subject to amendments intended to refine and extend its treatment of banks' exposure to credit risk and the list of eligible instruments for inclusion in capital. For example, the 1996 *Amendment to the Capital Accord to incorporate Market Risks* accommodates two alternative ways of measuring minimum levels of capital for market risks: one based on banks' own internal risk- measurement models and the other on a standardised methodology under which capital requirements are estimated separately for different categories of market risk and then summed to give an overall capital charge.

[5] Capital with maturity not below 5 years.

Box 1: Capital Adequacy

Capital adequacy is the aggregate of Tier-I and Tier-II capital, of which the latter is not to exceed 100 per cent of the former. In the Indian context, the following items form part of Tier-I and Tier-II capital.

Tier-I: (a) Paid-up capital, (b) Disclosed free reserves, (c) Capital reserves representing the surplus arising out of sale proceeds of assets, (d) Reserves (excluding revaluation reserves) *less* (a) losses, including accumulated losses, (b) Equity investments in subsidiaries and (c) Intangible assets

Tier-II: (a) Undisclosed reserves, (b) Cumulative perpetual preference shares, (c) Revaluation reserves (at a discount of 55 per cent), (d) Hybrid debt capital instruments, (e) General provision/general loan loss reserves (subject to a ceiling of 1.25 per cent of risk-weighted assets), (f) sub-ordinated debt and (g) investment fluctuation reserve.

How do we calculate a bank's Tier-I and Tier-II capital? Consider the following hypothetical balance sheet of a representative XYZ bank

Assets	Amount	*Liabilities*	
Cash in hand and balances with RBI	10	Equity capital	10
Call Money	5	Sub-ordinated debt	5
Investments	30	Deposits	65
Loans	50	Borrowings	5
Fixed Assets	5	Other Liabilities	15
Total	100	Total	100

Under the BIS-weighting norms as adopted to the Indian context, cash and balances receive zero risk weight, investments receive zero risk weight[6], call money receive 20 per cent risk weight and loans and fixed assets have 100 per cent risk weight. Therefore, the total risk weighted assets of the XYZ bank would work out to be:

RWA=0% x (10+30)+20% x 5+ 100% x (50+5)=56

Tier I capital: 10/56 = 17.9%

Tier 2 capital: 5/56=8.9%

BIS capital ratio = Tier 1+ Tier 2 = 17.9%+8.9%=26.8%

However, the picture is much more complicated than these simple calculations suggests. For instance, suppose the bank has off-balance sheet items (e.g., financial guarantees) on its books. In that case, the amount of such guarantees would have to multiplied by a credit conversion factor to arrive at an on-balance sheet equivalent and further multiplied by the appropriate risk weight and added to the on-balance sheet risk-weighted assets to arrive at the total risk-weighted assets.

As the reform of banking regulation became an important policy agenda of developing and transition economies (a tendency given impetus by the East-Asian financial crisis), the appropriateness of the Basel standards to such economies became a subject of debate. *Inter alia*, the question was raised as to whether economies vulnerable to macroeconomic shocks and with fragile financial sectors necessitated a more stringent standard than the 8 per cent ratio. At the same time, financial sector stability assessment came to dominate the policy agenda of international agencies with the health of the banking sector and the overall capital position becoming a matter of prime focus. The *Core Principles for Effective Banking Supervision* (BIS, 1997) emphasised the need for banking supervisors to set minimum capital requirements for banks in order to adequately reflect the risks undertaken by banks and simultaneously the need to define the components of capital bearing in mind banks' ability to absorb losses. While such

[6]Since 1999-2000, investments have been subjected to a market risk of 2.5 per cent. We ignore market risk considerations from the analysis.

developments were underway, it was increasingly realised that in addition to credit risk (which was the preponderant focus of the 1988 Accord), the growing complexity of banking operations and the move towards a market-driven financial sector in the aftermath of financial liberalisation across large parts of the globe (Williamson and Mahar, 1998) brought to the fore other forms of risks, such as liquidity risk (risk of default arising from cash flow mismatches), market risks (risk arising from adverse movements in market variables, such as interest rate) and operational risks (risks arising from failure of systems and controls).

New Basel Accord

The proposals in the BIS document *A New Capital Adequacy Framework* began in the aftermath of the turbulence in financial markets which followed the Russian Government's forced restructuring of its own short-term debt and its moratorium on the servicing of a wide range of private sector external obligations in August 1998 and the rescue operation of the Long-Term Hedge Fund, which followed in the autumn (Fleming, 1999).

The objectives of the Basel II, as enunciated by the BIS are five-fold: (a) promoting safety and soundness of the financial system; (b) enhance competitive equality; (c) comprehensive approach to addressing risks; (d) greater sensitivity to he degree of risk involved in banks' activities; and (e) focus on internationally active banks, with the capability of being applicable to banks with varying levels of complexity and sophistication (BIS, 2001).

The Basel II rests on three pillars: (a) minimum capital requirement, (b) supervisory review process, and (c) market discipline. In other words, the idea inherent has been to introduce greater risk sensitivity by supplementing the present quantitative standards by introducing two additional pillars (pillars 2 and 3), thereby providing a more balanced approach to the capital assessment process (Table 1).[7] We will delve into each of the three pillars separately.

[7] See BIS (2001), RBI (2001), and Saunders and Allen (2002) for a discussion of the three New pillars of the New Basel Accord.

Table 1: Proposed New Accord versus 1988 Accord: Salient Features

The 1988 Accord	The Proposed New Accord
Focus on a single risk measure	Emphasis on banks' own internal methodologies; two additional pillars: Pillar 2 (supervisory review of capital adequacy) and Pillar 3 (market discipline)
One-size-fits-all approach	Flexibility; menu of approaches to ascertain capital requirements
Broad-brush structure	Greater risk sensitivity
Focus on credit risk alone	In addition to credit risk, emphasis provided on market risk and operational risk

Source: Compiled from BIS (1988) and BIS (1999)

Minimum Capital Requirements

Much of the concern about the Basel II comes from the first pillar of minimum capital requirements. As per the January 2001 Consultative Paper (BIS, 2001), banks can choose from the following three evolutionary variants to measure the risks, *viz*., (a) a basic standardized model (modified version of the existing approach), (b) an internal rating based (IRB) foundation model, and (c) an advanced IRB model. While the basic standardized model is based on the ratings of the external rating agencies like Moody's or Standard and Poor's, a basic requirement for the foundation or advanced IRB model is to develop the bank's own internal rating system. It may be noted that depending on which model is chosen the capital requirement will vary. This has important implications for the emerging market economies.

Furthermore, as far as the minimum capital requirement of a bank is concerned, it needs to be noted that the Basel II makes a distinction between credit risk, market risk and operational risk, so that,

Regulatory Total Capital = Credit Risk Capital Requirement + Market Risk Capital Requirement + Operational Risk Capital Requirement

The definition of capital in the Basel II has been retained unchanged from that of the original Accord.

What are the methods of calculations of the above three kinds of risks? At the risk of oversimplification, Table 2 below summarises the basic approaches to ascertaining minimum capital requirements.

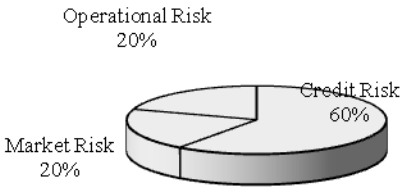
Table 2: Variants of Risk Calculation in Basel II

	Credit Risk	Market Risk	Operational Risk
Standardized	Standardized	Standardized	Basic Indicator
Advanced	Foundation IRB Advanced IRB	Internal (e.g. RiskMetrics, historical or Monte Carlo simulation)[8]	Advanced Measurement

Source: Compiled from BIS (2001).

What is the importance of these types of risks in the portfolio of a typical commercial bank? Hammes and Shapiro (2001), following McKinsey's analysis on actual capital risk allocation (as opposed to regulatory capital) of a typical commercial / investment bank, report that credit risk consists of the majority share in the banks' portfolio (Chart 1).[9]

Chart 1: Risk Decomposition of a Typical Commercial / Investment Bank



Source: Hammes and Shapiro (2001).

Note that, in calculating the capital ratio, the total risk weighted assets (or the denominator) will be calculated as follows:

*Total Risk Weighted Assets = 12.5 * [Market Risk Capital Requirement + Operational Risk Capital Requirements] + Sum of Risk Weighted Assets compiled for Credit Risk.* [10,11]

[8] A widely used technique to measure market risk is Value at Risk (VaR), which gives the maximum loss on a portfolio over a given horizon with a specified confidence level.

[9] The November 2001 modifications to Basel II reduce the share of operational risks to 12 per cent.

[10] Note that 12.5 is the reciprocal of the minimum capital ratio of 8 per cent.

[11] See Saunders and Allen (2002) for details on credit risk measurement under Basel II.

The Standardised Model for Calculating Credit Risk

Much of the discussion stimulated by the Basel II has focused on its standardised approach to the risk weighting of different elements among the assets of banking books. This is because of the proposed reliance on external credit assessment institutions in delineating risk weights. The calibration of sovereign risk weights is considerably finer than that of the 1988 Accord; with the highest risk weight allowed being 150 per cent, instead of 100 per cent as in the 1988 Accord. The *Third Consultative Document* of the Capital Accord by the BIS (2003) has observed that risk-weights can be based on assessments made either through internal rating-based approach, or alternately, through external ratings made by external agencies. National supervisors would be responsible for determining whether an ECAI meets the six-fold criteria of objectivity, independence, transparency, disclosure, resources and credibility in discharging the rating process. The low penetration of external ratings agencies in emerging markets means that external ratings might not be very meaningful (Ferri *et al*., 2001).[12]

The Basel II puts forward two alternative options for the risk-weighting of banks. The first would be linked to the weighting attributed to the country in which the bank is incorporated. The weight attributed to the bank would be one category less favourable than that applying to the country (Table 3; option 1). However, there would be a ceiling of 100 per cent on the weights for exposures to banks of all but the lowest rated countries, for which the ceiling would be 150 per cent. The second option would involve recourse to external agencies own ratings of banks. Under this option, claims on banks with a rating of AA- or better would be assigned the lowest risk weight, which increases gradually as the sovereign rating of the country declines. Under this option (unlike the first), inter-bank claims would also be differentiated by their maturity, but the benchmark for such differentiation has been tightened from a residual maturity of upto 1 year (in the 1988 Accord) to an original maturity of upto 6 months (in the Basel II).

[12] In the Indian context, only a few banks have accessed external ratings agencies (Nachane and Ghosh, 2004).

Table 3: Risk-weights of Basel II:
Exemplified with Standard and Poor's Rating

Claim		AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Sovereign		0	20	50	100	150	100
Banks	Option 1[a]	20	50	100	100	150	100
	Option 2[b]	20	50	50	100	150	50[c]
Corporates		20	100	100	100	150	100

a: risk weighting based on risk weighting of sovereign in which the bank is incorporated
b: risk weighting based on the assessment of the individual bank
c: claims of a short original maturity les than six months on banks with a rating above BB+ would receive a weighting that is one category more favourable than the usual risk weight on the bank's claims subject to a floor of 20 per cent or the level of the risk weight applying to its country of incorporation.
Source: BIS (2001)

The weights in the New framework also provide for differentiation in the case of non-financial corporates to recognise variations in their credit quality. Illustratively, a weight of 20 per cent is attributed to entities with credit rating of AA-or better (subject to the proviso that no corporate should receive a weight lower than that of its country of incorporation); corporates with rating below B- would be assigned 150 per cent risk weight. Other changes in the standardised approach concern the weights for off-balance sheet items and treatment of securitised assets.

The Internal Rating-based (IRB) Approach

The IRB framework for corporates, sovereign and bank exposures build on current best practice in credit risk measurement and management. While, the standardized approach is, in principle, close to the existing arrangement, under the IRB approach, banks will be allowed to use their internal estimates of borrowers' credit worthiness, subject to supervisory validation.[13] Under the IRB approach, banks will be required to classify banking book exposures into the six broad classes of assets which underlie different credit risk characteristics *viz*., (a) Corporate, (b) Bank, (c) Sovereign, (d) Retail, (e) Project finance, and (f) Equity. For the fist three types of exposures, the Committee has developed both foundation and advanced methodologies for the estimation of risk components (there is no distinction between foundation and advanced methodologies in the retail framework). For corporate, bank, sovereign, and retail risks,

[13] There are, however, some differences between the existing approach and the standardised approach proposed in the New Basel Accord. Under the standardised approach the risk-weights have been enlarged to encompass exposures to a broad group of borrowers with reference to rating provided by the rating agencies so as to take care of greater risk differentiation.

there is a specific set of risk weights. For each of these classifications, exposure risk weights are derived from the specific continuous foundation of risk weighted asset and is defined as the product of risk weight of transaction and a measure of exposure.

The basic structure of the IRB approach is as follows. A bank's internal measures of credit risk are based on an assessment of borrower and transaction risk. Most banks have an internal rating grade assigned to a borrower, and estimate an implicit probability of default (PD) associated with borrower in each of these internal grades. Besides, banks not only measure the likelihood of a default but also estimate the extent of loss in case of a default. This will depend on two elements, *viz*., (a) loss given that the borrower defaults (LGD), expressed as a percentage of exposure, and (b) exposure at default (EAD), providing the bank's exposure to the borrower at the time of default. The risk weights (RW) under the IRB are expressed as a single continuous function of the PD and LGD, so that risk-weighted assets (RWA) will be written as, RW(PD,LGD) * EAD.

Foundation IRB Approach: The calculation of total RWA under the IRB approach is a two-step process. First, taking into account for each instrument its PD, LGD (and also maturity, wherever applicable), the first step for the bank would be to calculate a baseline level of RWA by summing the individual exposures after multiplying by their respective IRB risk weights. Secondly, the banks' total RWA for non-retail exposure classes is calculated by adding to this baseline level and adjustment for the degree of single borrower risk concentration within non-retail exposure classes. As this adjustment factor may be positive or negative, the total RWA could go up or down after the adjustment. The LGD values in this case are set by supervisory rules.

Advanced IRB Approach: In the advanced approach, the banks can estimate the LGD of an exposure, subject to meeting additional, more rigorous minimum requirements for LGD estimation. In this approach, the range of eligible collateral is not restricted. However, banks would be required to consider the risks which the restrictions in the foundation approach are designed to address. Accordingly, the additional minimum requirements are considerably more rigorous than those required of banks using foundation methodologies. Mention may be made in this context that VaR models are part of the internal models approach for measuring market risk in the Basel Accord II. Basically, a VaR estimate is simply an appropriate percentile of the bank's portfolio loss distribution. For any given bank portfolio, one can calculate a loss distribution, showing the probability of various amounts of loss. The 99 per cent VaR, for example, is the loss magnitude, which will be exceeded only with 1 per cent probability. Stated otherwise,

"the 99 per cent VaR of a bank portfolio is Rs. **X**" means that one can assert with 99 per cent confidence that the bank's losses from this portfolio will be less than Rs **X**.

In addition, the new Basel Accord provides a menu of approaches towards measurement of operational risk. Three such approaches have been proposed: *basic indicator approach, standardised approach* and the *advanced measurement approach*. Under the first approach, operational risk capital allocation is based on a single indicator (*viz.*, Gross Income) as a proxy for operational risk exposure. Under the second approach, banks' activities are divided into eight business lines (corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services, asset management and retail brokerage). The capital charge for each business line is calculated by multiplying gross income by a factor (denoted as beta) assigned to that business line. Under the third approach, the regulatory capital requirement will equal the risk measure generated by the bank's internal operational risk measurement using both qualitative and quantitative criteria. The qualitative criteria include independent operational risk management function, active involvement of board of directors / senior management in oversight of operational risk management process, regular reporting of operational risk exposure and loss experience and documentation of risk management system. The quantitative criteria include the demonstrated ability of the bank to capture potentially severe 'tail' loss events and sufficient 'granularity' in risk measurement systems to capture the major drivers of operational risk. In addition, the process of operational risk measurement would also need to include four key elements: track of internal loss data, use relevant external data, employ scenario analysis to evaluate its exposure to high severity events and finally, capture key business environment and internal control factors that can change the operational risk profile of the bank. In other words, these approaches are gradually increasing in the degree of sophistication and have built-in incentives to encourage banks to continuously improve their risk management and measurement capabilities and undertake more accurate assessment of regulatory capital.

Supervisory Review Process

The second pillar of the New Basel Accord focuses on improving the supervisory review process and views the role of supervisory review as a critical complement to capital requirement and market discipline. It emphasises that, despite improving the risk sensitivity of the minimum capital requirements, supervisors need to take a comprehensive view on how banks handle their risk management and internal capital

allocation process. Subject to shortcomings in these, supervisors could require higher than the minimum capital target from a given institution.

The discussion is concerned primarily with the application of the following four principles: (a) supervisors expect banks to operate above the minimum regulatory capital ratios and should be able to require banks to hold capital in excess of the minimum; (b) a bank should have a process for assessing its overall capital adequacy in relation to its risk profile, as well as a strategy for maintaining its capital levels; (c) supervisors should review and evaluate a bank's internal capital adequacy assessment and strategy, as well as its compliance with regulatory capital ratios; and (d) supervisors should seek to intervene at an early stage to prevent capital from falling below prudent levels.

Market Discipline

The potential of market discipline to reinforce capital regulation depends on the disclosure of reliable and timely information with a view to enabling banks counterparties to make well-founded risk assessments. In a recent discussion paper, the BIS has elaborated the recommendations of the Basel II concerning the nature of information which should be disclosed under this pillar (BIS, 2000). These include (i) the structure and components of bank capital, (ii) the terms and main features of its capital instruments, (iii) the accounting policies used in the valuation of assets and liabilities and for provisioning and income recognition, (iv) qualitative and quantitative information about its risk exposures and its strategies for risk management, (v) its capital ratio and other data related to its capital adequacy on a consolidated basis, and (vi) a breakdown of its risk exposures. The information needs to be supplemented by an analysis of factors affecting the banks' capital position. Moreover, banks are encouraged to disclose ways in which they allocate capital among their different activities. The disclosures envisaged under this pillar need to be made on a semi-annual basis.

The Third Consultative Document

In the light of the comments received on the second consultative paper, the BIS issued the Third Consultative Document (CP3) in April 2003. As compared to the Second consultative document, the salient differences in the revised document pertain to, among others, applicability of advanced and foundation IRB approaches for commercial real estate lending, alternative approach to operational risk and lowering of risk weights on lending that is fully secured by mortgages on residential property. The salient differences contained in the Third Consultative Document is detailed in Box 2.

Box 2: Major Features of the Third Consultative Document (2003)

Pillar 1: Minimum Capital Requirements

- At national discretion, banks will be able to risk weight all corporate claims at 100 per cent without regard to external ratings.
- New section on the treatment of past due loans (other than mortgages). Risk weights 150 per cent or 100 per cent dependent on whether specific provisions cover more or less than 20 per cent of outstanding loans.
- A credit conversion factor of 100 per cent will be applied to the lending of banks' securities or the posting of securities as collateral by banks, including repo.
- Backtesting requirements for use of VaR are set out.
- PD floor of 0.03 per cent introduced for retail PD.
- At national discretion, a bank can use an Alternative Standardised Approach (footnote 91 of BIS, 2003). For the retail and commercial banking business lines, the regulators are proposing an index other than Gross Income.

Pillar 2: Supervisory Review Process

- New Section identifying important issues that banks and supervisors should particularly focus on, including a number of key issues, which are "not directly addressed under pillar 1" as well as "important assessments that supervisors should make to ensure the proper functioning of certain aspects of Pillar 1".
- A bank should ensure that it has sufficient capital to meet Pillar 1 requirements and the results of Pillar 1 stress tests.
- Supervisors to assess banks' application of the reference definition of default and its impact on capital requirements.
- Supervisors may increase the capital required-to prevent "cherry picking"-where the poorer quality assets and most of the credit risk of the underlying exposures remains with the bank.

Pillar 3: Market Discipline

- The table of requirements has been amended in respect of the disclosures required.
- The Committee observed that considerable efforts have been made to ensure that the disclosure requirements of the Basel II focus on capital adequacy, and do not conflict with broader accounting disclosure standards with which banks need to comply.

Source: BIS (2003a), April.

The Plan for Transition to the New Accord

Subsequent to the release of the Third Consultative Document, BIS conducted the Quantitative Impact Study (QIS 3) in October 2002, which focused on the proposed minimum capital requirements under pillar 1 of the Basel II. The results of the exercise, pertaining to more than 350 banks in 43 countries, were released in May 2003. The findings indicated some increases in capital requirements, relative to current for all the

country groupings[14]. While the reported increases in capital requirements were "small" in the foundation IRB approach, there were 'reductions in capital requirements with those under the current Accord' under the advanced IRB approach (BIS, 2003). The BIS also published a document delineating the time frame for migrating to the Basel II (Table 4).

4. Possible Implications for Emerging Market Economies

Against the backdrop of the aforesaid discussion, the present section dwells on the issue of the likely impact of the Basel II on developing and /or emerging markets.[15]

One of main arguments about the effect of the Basel Accord II on the developing and / or emerging market economies rests on the postulate that the bulk of the borrowers in these countries fall under the speculative grade. In particular, it has been argued that speculative-grade borrowers will suffer from a dramatic rise in debt costs and from the heightened cyclicality (see below) of global bank credit expected as a result of Basel II (Reisen, 2001). If the 'internal ratings-based' approach suggested is implemented, then there will be a substantial rise in risk weights. By contrast, the 'standardised' approach, which links risk weights to ratings by eligible external credit assessment institutions, would leave banks' regulatory capital charges, risk-adjusted returns and hence required spreads largely unchanged (except for the very lowest rating notches). Thus, to the extent it increases the capital requirement of the banks, it might have adverse repercussions on the credit portfolios of the banking sector.[16]

Table 4: Timetable for Implementing Basel II

Date	Action Point
October 2002	Basel Committee, in conjunction with national supervisors, launched quantitative impact survey (QIS 3) with a view to enable banks to conduct (within December 20, 2002) a concrete and comprehensive assessment of how the Committee's proposals would affect their particular firm.
Second Quarter, 2003	In light of responses received from QIS 3, the Committee will assess whether adjustments would be required in the proposed aggregate level of regulatory capital in the banking system and the updated version of the proposals would be released for public comment.
Fourth Quarter,	Finalisation of the New capital Accord.

[14] Comprising G-10, European Union and Others.

[15] See Ray (2001) and Ward (2002) for a discussion on the issues relating to implications of Basel Accord for the developing countries.

[16] It has also been argued that Basel II will raise the volatility of private capital flows to speculative-grade developing countries, and hence their vulnerability to currency crises (Griffith-Jones and Spratt, 2001).

2003	
2004-06	Adaptation and development of necessary systems and procedures by banks and supervisors so as to bring them in conformity with the New capital Accord. The banks adopting internal rating based (IRB) approach and advanced measurement approach (AMA) will be required to conduct parallel calculations with the current Basel Accord for one year prior to implementation.
End 2006	Implementation of New capital Accord.

Source: BIS (2002), July.

From a developing country perspective, the OECD / non-OECD distinction in risk-weights in Basel I is somewhat arbitrary and provides a distorting incentive for developing countries to seek OECD membership (Griffith-Jones and Spratt, 2001). Most importantly, the lower (20 per cent) risk-weights attached to short-term loans for emerging markets created a bias in their favour; on the other hand, credit to non-OECD banks with over one year maturity was discouraged by a far higher (100 per cent) risk weight. The removal of the OECD/non-OECD distinction under the Basel II is likely to have negative consequences for lowly-rated OECD countries. Countries like Mexico, may find that the conditions attached to loans more closely reflect their actual rating rather than the fact of their OECD membership. Conversely, highly rated non-OECD countries (such as Chile) are likely to benefit from more favourable terms. Thus, the alterations to the current treatment of maturity should remove some of the incentives towards short-term lending to banks rated below AA-. Consequently, it might lengthen the aggregate maturity of such lending. Overall, however, as a result of the Basel II capital requirements could align better with actual risk. This could benefit the highly rated sovereigns, banks and corporates regardless of OECD membership.

One of the major critiques of the New Basel Accord is perhaps the adoption of internal rating based (IRB) system. Two allegations are made in particular. First, that the application of IRB is costly and discriminates against the smaller banks, and secondly, that it will exacerbate cyclical fluctuations. Let us take up each of these aspects separately.[17]

Theoretical model have demonstrated that if the bank is capital constrained, then the Basel II will intensify the difference in bank lending rates and in bank loans between corporate borrowers with different probabilities of default (Chen, 2002) or make the

[17] It needs to be recognised that some of these issues have been addressed in the *Third Consultative Document*, released by BIS in April 2003.

entire banking system worse off, if all of them attempt to raise capital *simultaneously* from the capital market (Hellmann *et. al*, 2000). This is especially so in case such markets are not sufficiently deep and liquid (as is often the case in developing economies).

Discrimination against the Smaller Banks

A major impact of the New Accord could be an increase in the quantity of loans to borrowers rated above BBB and a fall in loans to borrowers rated below BBB (Griffith-Jones and Spratt, 2001). Given that the majority of the latter kind of borrowers are likely to be in the developed world, one major impact on the developing world will be a reduction in overall levels of lending from internationally active banks. What lending does occur is therefore likely to be concentrated in highly rated sovereigns, corporates and banks. In fact, as pointed out in Jackson (2001), for any bank, the effect of the internal ratings approach on required capital will depend on the risk profile of its particular book - high risk books will demand more capital than allotted currently and low risk books less. Table 5 compares the capital requirements under the current accord, the standard approach and the IRB foundation for senior unsecured corporate borrowers. The lower the rating the higher is the increase in capital requirement under the IRB foundation *vis-à-vis* current capital levels.

Table 5: Capital Requirements for Unsecured Corporate Borrowers

Ratings	Probability of Default (PD)	Current Capital	Standard Approach	IRB Foundation
AAA*	0.03	8.0	1.6	1.13
AA*	0.03	8.0	1.6	1.13
A	0.03	8.0	4.0	1.13
BBB	0.20	8.0	8.0	3.61
BB	1.40	8.0	8.0	12.35
B	6.60	8.0	12.0	30.96
CCC	15.00	8.0	12.0	47.04

* Floor PD is set at 0.03.
Source: Jackson (2001).

Pro-cyclicality

One of the most significant charges leveled against the New proposals is that they will exacerbate pro-cyclicality in their lending since the substantially increased provisions which can result from deteriorations in loan quality in cyclical downturns can lead to greater restrictiveness regarding new lending (European Central Bank, 2001; Ghosh and Nachane, 2003). In the case of an economic downswing if capital requirement becomes a constraint, then the bank may shrink its credit disbursement in an excessive way. Thus, it may exacerbate the recession / economic slowdown *via* the Fisherian debt-deflation spiral.[18]Another important potential source of more pro-cyclical bank lending which might result from the New Accord is the reliance on credit rating agencies in setting risk weights under the standardised approach to credit risk. This is one of the reservations expressed about reliance on credit rating agencies. Others concern the limited coverage of the ratings of existing agencies, the difficulty in establishing guidelines that would assure high quality of rating agencies and the closely related problem of incentives provided by the Basel II for the proliferation of new agencies and the likelihood of use of unsolicited credit ratings.

Furthermore, when the risk-profiles of the lenders are assessed on the basis of an internal rating, the elements of pro-cyclicality are going to be higher still. In fact, Danielsson *et al.* (2001) has interpreted this pro-cyclicality of regulation as an inherent conflict between regulation and macro-economic stabilization.[19]

Such elements of pro-cyclicity are inherent even in the existing Accord. There is however, the fear that greater risk sensitivity under New Basel Accord will aggravate this tendency. The drive for risk-weights to more accurately reflect PD is inherently pro-cyclical in that, during an upturn, average PD will fall - and thus incentives to lend will increase. Conversely, during a downturn, average PD will increase and, as a consequence, a credit crunch may develop with all but the most highly rated borrowers facing difficulty in attracting funds. The Basel Committee has recognised this concern,

[18] Ed Crooks, the economic editor of the *Financial Times*, puts it succinctly, "… the effect of the capital requirements could be to encourage banks to lend more in the good times and discourage them from lending in hard times. That in turn could mean that economic cycles are more severe: the peaks of the booms will be higher, because credit is easy, and the troughs of the busts lower, because no one can borrow" (*Financial Times*, January 17, 2001).

[19] To quote, "regulation not only renders bank crisis more likely but could also destabilize the economy as a whole by exaggerating fluctuation" (p.15). Similar concerns have been expressed by Altman and Saunders (2001).

but argued that it would be outweighed by the benefits of a risk-sensitive capital framework. The findings of the Quantitative Impact Survey 3 seem to validate this point.

Impact on International Capital Flows

A basic aim of the Basel II is to ensure that the regulatory capital of the international banks should be in alignment with the credit quality of their loan portfolio. Thus, for lending to low quality borrowers capital charges are likely to be higher. This had led some commentators to argue that the resultant risk sensitivity would lead to a curtailment of supply of capital to emerging economies.

There are two channels through which Basel II could affect the supply of capital to the emerging markets, (a) cross-border flows to such markets, and (b) credit flows within such markets. As far as the cross-border flows are concerned, because of the withering away of the distinction between OECD and non-OECD countries, it is clear that the requirement for regulatory capital for loans to low-rated OECD countries (like Turkey) would rise (Hayes and Saporta, 2002). Similarly, the average regulatory minimum to low credit quality countries is also likely to go up. If such additional regulatory requirement imposes a capital constraint higher than the economic capital of the banks, then the credit flows to the emerging markets could be affected adversely. As far as the credit flows within emerging markets are concerned, if most of the banks of the emerging markets adopt the standardized approach, it would be unaffected.

How far do these conjectures get translated in terms of calculations of credit risk? While both Reisen (2001) and Griffiths Jones and Spratt (2001) predict dramatic increases in spreads for the low-rated countries, Weder and Wedow (2002) found that such increases in spreads is found to be rather low. Using the November (2001) version of Basel II, and the S&P rating as of December 2001, the capital requirement for India is found to be unaltered at 8 per cent under both Basel I and the Basel II (standardized approach). The requirement under IRB approach (using a one year PD) was, in fact, found to be lower at 6.15 per cent! While the scenario for India is found to be reasonably bright, for countries like Venezuela or Russia the difference in the capital requirement between the standardized approach and the IRB approach is rather large (Table 6).

While this may not have any immediate concern for India, it is a fact that the credit flows do become more sensitive to the external credit ratings. In is in this context, that the comment of the RBI about the undesirability of unsolicited external credit agencies needs to be taken all the more seriously, so that international capital flows via

the banking channels are not subjected to the vagaries of international rating arbitrage. As observed in the Third Consultative Document of the BIS (2003), external credit assessment institutions need to satisfy the six criteria of objectivity, independence, transparency, disclosure, resources and credibility in order to be recognised for assigning ratings by types of claims or by jurisdiction.

Table 6: Capital Requirements By Emerging Market

(Per cent)

Country	Rating S&P December 7, 2001	Basel I Capital Requirement	Proposed New Accord Capital Requirement (Standardised)	Base II Capital Requirement (IRB Approach)
Singapore	AAA	8	0	0
Hong Kong	A+	8	1.6	0
Chile	A-	8	1.6	0
Czech Rep	A-	0	1.6	0
Estonia	A-	8	1.6	0
Hungary	A-	0	1.6	0
Korea	BBB+	0	4	2.24
Poland	BBB+	0	4	2.24
Latvia	BBB	8	4	2.07
Malaysia	BBB	8	4	2.07
Lithuania	BBB-	8	4	5.3
South Africa	BBB-	8	4	5.3
Thailand	BBB-	8	4	5.3
Mexico	BBB-	0	4	5.3
Philippines	BB+	8	8	6.62
India	BB	8	8	6.15
Colombia	BB	8	8	6.15
Brazil	BB-	8	8	11.09
Peru	BB-	8	8	11.09
Russia	B+	8	8	12.63
Romania	B	8	8	16.39
Venezuela	B	8	8	16.39
Pakistan	B-	8	8	22.97
Turkey	B-	0	8	22.97
Ecuador	CCC+	8	12	29.11

Indonesia	CCC	8	12	29.11
Argentina	SD	..	..	..

Source: Weder and Wedow (2002).

5. Reactions from the Developing Countries

Generic Concerns

The Basel II has evoked diverse reactions from various groups of economies. A number of views have emerged in this context. A view which is widespread among developing countries has been that the regulatory regime for bank capital should be able to make a contribution to the stability of capital flows. One of the major proposals along these lines is that supervisors in major countries should vary the capital requirements on banks' international lending in response to changes in the risk of different borrowers. A widespread concern among developing countries is that if the announcements of agencies simply parallel changes in market sentiment then developing countries could be affected adversely. The outcome could even be worse in the sense that recourse to ratings for setting risk weights for capital standards might magnify the instability of bank lending. Another point of major concern to developing countries is regarding the coverage of ratings of the major agencies. In India, for example, in early 1999, out of 9,640 borrowers enjoying fund-based working capital facilities from banks only 300 had been rated by any of the major agencies (Raghavan, 2001). In this context, the present section takes a look at select reactions from various quarters to Basel II.

Several comments emphasize that the Basel II would considerably increase the complexity of responsibilities for both supervisors and banks and would impose substantial additional costs. This has led to the suggestion that the Basel II provide for a more gradual phasing in of its implementation than presently envisaged. In particular, attention has been drawn to the special problems occasioned by the implementation of the IRB approach, the greater difficulties in this respect of banks not belonging to the category of "internationally active".

There is also widespread recognition of the advantages to banks of the IRB approach, but this is combined with the belief that its introduction would generally be more difficult in developing countries than their developed counterparts, owing to weaker managerial and supervisory capacity and limited availability of historical data on the former. The suggestion has thus been made that there should be a relaxation of the requirement that a banking group using the "foundation" IRB approach for some

exposures be required to adopt it across all exposure classes and across all significant business units (groups, subsidiaries and branches) within a reasonably short period. Instead, it has been proposed that national supervisors should be allowed to adopt a more selective application of the "foundation" approach'; segments not covered being subject to the standardised approach.

Many comments have been critical of the aggregation in the Basel II of expected and unexpected losses as well as of the way in which part, but typically not all, loan-loss provisions are included in the regulatory capital. This reflects a preference for treating expected losses as a cost of doing business to be covered by provisions (amount set aside to cover default on loans), while requiring capital for unexpected losses. Several points have been raised in this area: for example, the eligibility of only part of the provisions for inclusion in regulatory capital could act as a disincentive to banks to carry adequate provisions; and the lack of guidelines in the Basel II on provisioning could blur the process of attributing provisions to prospective future loan losses with the result that some of the banks' credit risks may be covered both by regulatory capital and by provisions not recognised as being part of such capital (so-called "double counting"). Concerns about the treatment of expected and unexpected losses are accompanied by the need for clearer guidelines on the subject as also for national supervisory discretion regarding their application.

International bodies like the World Bank in their comments have raised two sets of concern for the application of New Basel Accord for developing economies. First, it has been pointed out that the application of the IRB system could turn out to be extremely difficult for a number of developing countries. In particular, "even G-10 supervisors may find it difficult to verify the accuracy of a bank's internal rating system, let alone most supervisors in developing and emerging economies. As the determination of the adequate level of capital is expected to include some form of banks' judgment subject to supervisor's review, the risk of distortions is even increased" (World Bank, 2001). Secondly, a risk sensitive framework, that might trigger volatility within the banking system, may have some adverse consequences on capital inflows. However, if the banks adopt a forward-looking approach, the risks of such potential volatility could be minimal.

The comments by leading rating agencies like Moody's Investors Services also stressed the possibility of the disadvantage that the smaller banks might face due to adherence to Basel II. Many of the smaller banks - savings, co-operative and specialised - would find it more difficult to diversify their activities towards "fee - generating

business"; in fact, too much of such diversification could even be harmful. The Moody's go one step further and note categorically that, "It is unlikely that many of these banks will have the financial resources, intellectual capital, skills and large-scale commitment that their larger competitors have to build performing sophisticated systems to allocate regulatory capital optimally for both credit and operational risk" (p.3).

Specific Concerns

The proposed approach to capital requirements for operational risk under the New Accord has been the concern of a large number of countries. Their major focus has been the B*asic Indicator Approach,* regarded as the framework likely to be employed by most developing countries. The capital charges which would result from application of this approach are criticized as being too high and not adequately reflective of the lesser complexity of banking operations (and thus, lower operational risk) in developing countries. The point has also been stressed that gross income to which the capital charge would be proportional under the basic indicator approach is frequently not closely correlated with operational risk in a simple way (if at all). There have also been criticisms of the proposed floor for the capital charge in the most sophisticated approach to operational risk, the *Internal Measurement Approach*: this, it has been argued, would be a disincentive to its adoption and more generally, to improved risk management in this area. Other observations made concerning operational risk are the need to allow for insurance cover as well as possible recourse to an alternative approach which would put greater reliance on enhanced supervision and on locally set rules for capital charges owing to the difficulty of making generally applicable measurements to operational risk and to the close links between the problems of controlling operational and other kinds of banking risks.

Another recurring subject in the comments of developing countries involve disclosure and select definitional issues. The reservations as to enhanced disclosure focus on two issues-*viz*., (a) the way in which financial markets in developing countries would absorb and respond to greater disclosure and (b) competitive effects. Regarding the first issue, skepticism has been expressed about the capacity of market participants to interpret the increased information resulting from enhanced disclosure. Regarding the second issue, there is concern that the rules of the Basel II for disclosure of proprietary information could impinge unfavourably on a bank's competitive position.

Several comments have been directed at the estimation of capital requirements for equity exposures. Of special interest in the context of restructuring of banks' balance sheets after the recent Asian financial crises has been the attention drawn by Thailand to possible consequences of the rule that minority-owned, non-controlling equity investments should be deducted from capital (or in certain cases, be subject to consolidation on a *pro rata* basis). Such equity investments in countries which have recently experienced financial crises may constitute an exceptionally high proportion of banks' exposures owing to recourse to debt-for-equity swaps as part of debt restructuring, but are not intended to be long-term holdings. Since the rule in the Basel II may lead to further depletion of banks' already low capital, the suggestion has been made that such equity exposures be attributed lower risk weights (*viz*., those under the standardised or IRB approach).

Attention has also been drawn to the sharp rise in risk weights for borrowers with probabilities of defaults above a certain threshold: a rise that is capable of leading to levels of capital for exposures to borrowers of below investment grade substantially higher than under the standardised approach. This is regarded as counter-productive with regard to the Basel II's objective of promoting banks adoption of the IRB approach. On the one hand, banks with large concentrations of low-rated borrowers would have an incentive to use the standardised approach to keep down capital requirements, and, on the other hand, low-rated borrowers would have an incentive to become clients of banks using the standardised (as opposed to the IRB) approach. This inconsistency between the risk weights of the two approaches is one of the several opportunities for regulatory arbitrage which would result from the Basel II, and is widely regarded as likely to be especially important in many developing economies where most borrowers have relatively high probabilities of defaults and low ratings.

Commentators have expressed the view that the rules in the Basel II for the recognition and valuation of collateral in the form of commercial real property would be too restrictive. Attention has been drawn to the fact that commercial real estate tends to be an important source of collateral in developing rather than developed countries, owing to the underdeveloped state of financial markets in the former and thus, the lesser availability of financial instruments suitable for this purpose. It has, therefore, been proposed (subject to appropriate "haircuts" to allow for the volatility of such property) that commercial real estate should be recognised as allowable collateral alongside eligible financial instruments under the standardised approach. Moreover, several countries have

objected to the attribution of a risk weight of 150 per cent on the unsecured portion of loans overdue for more than 90 days (net of specific provisions), preferring a less severe approach, in their view, better reflecting the real risk of such exposures, which would impose an exceptionally high risk weight only on loans overdue for a significantly longer period.

India's Reactions

The Reserve Bank of India (RBI), in its comments on the *Second Consultative Document*, pointed out that Basel II would involve a shift in direct supervisory focus away to the implementation issues, and that banks and the supervisors would be required to invest large resources in upgrading their technology and human resources to meet the minimum standards.[20] It came down forcefully on the increasing reliance on external rating agencies in the regulatory process on the ground that such a move would undermine the initiative of banks in enhancing their risk management policies and practices and internal control systems. It categorically stated that:

> "The minimum standards set even for the Internal Rating Based (IRB) foundation approach are complex and beyond the reach of many banks. Further, while the Basel Committee desires neither to produce a net increase nor a net decrease in minimum regulatory capital, it is felt that the current proposals are going to result in significant increase in the capital charge for banks, especially in emerging markets. The emerging markets with their low technical skills, structural rigidities and less robust legal system, etc. would face serious implementation challenges. RBI, therefore, feels that the spirit of flexibility, universal applicability and discretion to national supervisors, consistent with the macro economic conditions specific to emerging markets ought to be preserved while finalizing the New Accord" (RBI,2001; p.2).

While the Reserve Bank agreed with the view that the focus of Basel II might be primarily on internationally active banks, it contended that after a period of time, all "significant" banks would be expected to adhere to it. It was, however, pointed out that the standardized approach might not suit the needs of the smaller banks.[21] As a

[20] Reddy (2001) has observed that, in the medium term perspective, the main challenge for banks would be to subscribe to Basel II. Given that the new Accord is likely to be more complex and more binding, it would warrant early preparatory work by both RBI and banks.

[21] In this context, the views of RBI is comparable to that expressed by Lawrence H. Meyer, Member of the Board of Governors of the Federal Reserve System that "it is not at all obvious that the proposed standardized approach fits the needs of smaller banking organization engaged primarily in traditional banking activities, but I question whether the added implementation burdens are cost-effective for traditional banking organizations, especially since neither the current nor the proposed capital frameworks yet address what is perhaps the most critical risk factor for smaller banks – geographic and sectoral concentrations of credit risk" (Meyer, 2001).

consequence, it suggested a simplified standardised approach for those banks that are not internationally active. Under this approach, standardized risk weights in the range of 0 per cent to 150 per cent on the basis of internal ratings of banks, could be assigned, subject to mapping of such ratings with the benchmark probability of default (PD) estimated by the supervisor on the basis of pooled data from select banks.[22] The RBI recognized that even this simplified approach is likely to be more extensive and complex than the 1988 Accord, and hence the New Accord may be applied, in phases.

A basic point of difference between Basel II and RBI lies in the relative role of supervisors *vis-à-vis* external rating agencies. The RBI in its comment categorically reiterated that the External Credit Assessment Institutions should not be assigned the direct responsibility for risk assessment of banking book assets. This was primarily to avoid the contagion effect in the eventuality of a financial crisis and the proprietary information that domestic rating agencies have regarding their domestic clients. Furthermore, RBI pointed out that unsolicited ratings by external agencies are generally superficial, and could lead to a potential trade-off between competition and quality in the rating industry. Consequently, it favoured the view that preferential risk weights should be assigned only on the basis of solicited ratings.

In a similar spirit, RBI pointed out that the risk weighting of the banks should be de-linked from the credit rating of the sovereign in which these banks are incorporated. After all, country risk and firm-specific risks could be independent. A related issue is the assigning of weights to sovereign claims. The RBI felt that the national supervisors should be given some discretion to assign lower risk weight in specific cases.

RBI proposed that while internationally active banks may be required to follow the IRB approach, a simplified standardized approach may be evolved for other banks, whereby standardized risk weights in the range of 20 per cent to 150 per cent could be assigned on the basis of internal ratings of banks.

As far as the Internal Rating Based (IRB) approach is concerned, it was argued that the minimum standards set for the same are complex and beyond the reach of many

[22] As a precursor, the RBI pointed out that internal rating systems of banks need to be substantially upgraded and strengthened, keeping in view the best practices and the standards prescribed by the Basel Committee for the IRB approach.
As far as the ambit of 'internationally active banks' is concerned, RBI defined these as banks with cross-boarder business exceeding 20 or 25 per cent of their total business (RBI, 2003b). 'Significant banks', on the other hand, have been defined as those banks with complex structures and whose market share in the total assets of the domestic banking system exceeds 1 per cent.

banks. Instead, it suggested that a simplified standardized approach above might be evolved and applied to banks that are not internationally active. These banks may be allowed to use internal ratings for assigning preferential risk weights, on certain types of exposures, after validation of the internal ratings systems by national supervisors. In particular, it noted that the line of demarcation between the six broad classes of exposures (*viz.*, corporate, sovereigns, banks, retail, project finance and equity) could often be quite indistinct. Therefore, without recognising the institutional framework and geographical spreads such segregation could pose serious implementation problems. Furthermore, the RBI felt that national supervisors might have discretion and flexibility in defining the exposure classes, *viz.*, corporate, retail, sovereign, project finance, etc.

Some recent developments in the run up to the Basel II deserve mention in this context. Subsequent to the publication of the compliance status with the *Basel Core Principles,* the RBI has taken several steps to implement certain important components of Basel II. Illustratively, the Risk Based Supervision (RBS) process was effected from April 2003. With a view to assisting banks in setting up appropriate risk management framework, guidelines on credit risk management, market risk management and risk based internal audit were issued. In response to requests made by banks, the Risk Profile Template (RPT) for use in commercial banks was forwarded to them. Side by side, guidelines on country risk management and provisioning have been issued to banks. These guidelines require banks to formulate appropriate, well-documented and clearly defined Country Risk Management (CRM) policies, with the approval of the respective Boards and address the issues of identifying, measuring, monitoring and controlling country exposure risks. In tandem with these developments, the Third Pillar of Basel II is being bolstered by broadening the range of disclosures that banks have to disclose as part of 'Notes on Accounts' to their balance sheet.

The Reserve Bank has recently come out with its comments on the Third Consultative Paper (RBI, 2003b). The salient features of the observations of RBI can be summarised as under:

(a) Prescribe a material limit (10 per cent of total capital) up to which cross-holdings of capital and other regulatory investments could be permitted.

(b) Rating of only those ECAIs should be eligible for use in assigning preferential risk weights which disclose publicly their risk scores, rating process and procedure and are recognised by national supervisors.

(c) De-linking the risk-weighting of banks from the credit ratings of sovereigns in which they are incorporated.

(d) Discretion and flexibility to national supervisors to define the exposure classes, such as corporate, retail, sovereign and project finance.

(e) Strong case for revisiting the risk weights assigned to sovereign exposures when the exposures are aggregated as a portfolio which enjoy the benefits of diversification.

The RBI emphasised the need to take into account the structural characteristics of different economies in the process of implementing Basel II. Furthermore, the RBI favoured domestic rating agencies in the work relating to assessment because of their up-to-date access to domestic conditions, proprietary information, and legal and regulatory framework (RBI, 2002).[23]

Therefore, while discussions on the present Basel II continues, it needs to be recognised that unless suitably modified, the adoption of the Basel II in its present form would possibly result in a significant increase in the capital charge for banks, especially in emerging markets. Besides, Basel II could enhance the minimum regulatory capital, especially for banks in the developing economies, due to a number of reasons like, (a) withdrawal of uniform risk weight of 0 per cent on all sovereign claims (OECD & non-OECD), (b) explicit capital charge, or (c) imposition of higher risk weights on claims on certain high-risk exposures like venture capital or private equity.

6. Emerging Scenario

Bank capital is intended to reduce the probability of default of debt of a banking firm. In principle, all categories of banking risk that can lead to such losses needs to be covered by capital, and any of them, if left unattended, are capable of eroding the capital base of the institution. Those concerned with the management of banks are inevitably confronted with the interrelationships among different categories of banking risks. Banks' internal controls reflect awareness of this and are designed to deal with the problems which these inter-linkages pose. Recent periods of financial turbulence have brought forth the connections between different categories of banking risks, in particular,

[23] India is also participating in the Quantitative Impact Study (QIS 3) being conducted by the Basel Committee to assess the impact of the Basel II. RBI has since constituted a group of seven banks (three public sector banks, two New private banks and two old private banks) that have begun participating in the exercise (RBI, 2002).

between credit and market risks. These connections have been highlighted in academic as well as policy publications.

Not surprisingly, the efforts of major banks to upgrade their risk management function in response to the increased complexities of banking business are characterised by an increasingly integrated approach to risk management. While there are certain nitty-gritties that still need to be tackled as far as the robustness of these new methods and their ability to predict financial vulnerability are concerned, one might envision further improvements in this area in the near future. Moreover, in various forms, these methods are likely to spread from the larger, more sophisticated institutions to the less-complex rungs of the industry.

The increasingly heterogeneous banking sector with which the BIS is concerned is a source of growing difficulty for global standard-setting, since the objectives of the BIS include a reasonable measure of regulatory uniformity for the institutions covered and thus the reduction in differing competitive advantages accruing from differences in national regulatory regimes. Efforts at harmonisation of banking regulation and supervision have, therefore, been rendered overtly complex by the diverse range of practices in loan classification and provisioning, differences in the legal and institutional frameworks and the varied accounting standards and fiscal regimes to which banks are subject to in different countries. One basic duality is the broad division of the international banking system into those banks, which have been following such standards (and thus, those which conform to 'international best practice') and those that have only recently begun aspiring towards such standards. This duality has, in its wake, led to the call for development of differential standards for sophisticated and less sophisticated banks, for internationally active and domestically active banks and as a corollary, to banks in developed and developing/emerging/transition economies. Mention may be made that the forerunner of banking standards, the 1988 Accord made a distinction between internationally active banks and other banks, while the Basel II speaks, in addition, of a class of sophisticated banks to which international standards could be applicable (Narain and Ghosh, 2003).

Second, the progressive shift in the nature of banking supervision sway from reliance on relatively simple rules and procedures is placing greater demand on supervisors, and in particular, on quantitative skills. The trend is already widespread and likely to gain momentum in the near future. While not all countries will be affected uniformly by these changes, emerging markets with developing banking sectors are likely

to be significantly affected, as supervisory skills begin to command a premium. This might engender a migration of supervisory resources to places where it receives the highest remuneration.

Third, in licensing foreign banks, countries need to take account of their capacity to supervise the activities the banks are permitted to engage in. This is, however, easier said than done. The impact of the WTO GATS arrangements is likely to lead to greater opening of financial markets to foreign competition, with a concomitant effect on the banking sector as well. Large financial conglomerates, with highly skilled personnel and technology orientation, are capable of producing highly competitive types of banking, which domestic banking systems might find hard to replicate. A crisis involving such banks can often engender contagion effects with adverse ramifications for the entire economy. To some extent, supervisors can rely on their counterparts in the country of the bank's parent institution, but there are limits to which such reliance is feasible (Goodhart *et al*., 1998). Moreover, in situations of banking crisis where infusion of capital to local institutions from foreign banking groups is regarded as essential to restructuring, countries can often be left in a weak bargaining position regarding the licensing of the activities which New entrants are permitted to undertake. With the passage of time, one might expect to witness a convergence in banking practices with supervisory standards, which can help attenuate these difficulties, but there is no gainsaying the fact that the process can, at best, be gradual.

Does this mean that banks from developing countries are likely to be put at a further competitive disadvantage *vis-à-vis* large, internationally active banks from the industrialised world? Several commentators have been skeptical of the efficacy of the Basel II to strengthen banks in emerging countries (Rojas-Suarez, 2001; Ward, 2002). Their argument is based on the premise that such countries can be divided into two groups according to their capacity to enforce regulatory capital: (a) those with inappropriate accounting standards and reporting systems and (b) those with high concentration of asset ownership, that allows a degree of maneuverability for market-based financing. Under such circumstances, capital ratios cease to play their desired role since there exists no capital markets to validate the "real" value of capital, as distinct from its accounting value. However, it seems fair to say that an answer to this question at the present juncture can, at best, be tentative. First, the existing proposals of New Basel Accord are still in the process of being *actually* implemented: different countries might face different constraints in implementing them. Secondly, and more fundamentally, in so

far as the proposals are applicable to internationally active banks and to the extent such banks are less dominant in developing country markets, developing countries and emerging markets are *possibly* likely to be less affected by the Basel II.

What are the implications for India as far as the application of Basel II is concerned? The new Accord, when implemented, is likely to have significant implications for the banking system as a whole. Besides requiring increased capital, it attaches urgency to the development of efficient and comprehensive internal systems for assessment and management of risks, setting up and adhering to adequate internal exposure limits and improving internal control generally. The guidelines for risk management and asset liability management provided by the Reserve Bank serve as a useful foundation for building more sophisticated control systems. The feedback received from few banks indicates the need for substantial upgradation of existing management information systems, risk management practices and technical skills. Capital allocation is also expected to be more risk sensitive and, therefore, banks and financial institutions will have to plan in advance so that there are no disruptions in the capital structure. Further sophistication in risk management and control mechanisms will have to evolve as experience with preferential risk-weighting and sensitivity to external ratings is accumulated. A key requirement when the new Accord, after further modification, becomes operational is that of high quality human resources to cope with and adapt to the new environment. Enhancing technical skills and abilities to handle new technologies and new risks, exploiting information flows to price them in, and developing foresight in anticipating changing risk-return relationships will become essential.

One can do no better than to quote from Jalan (2002)'s position about India's stance about Basel II:

> "The Reserve Bank … has supported flexibility, discretion to national supervisors and a phased approach in implementing the (New Basel) Accord. The Accord could initially apply to internationally active – banks with over 15 per cent of their business in cross-border transactions, as proposed by the Reserve Bank – and significant banks whose domestic market share exceeds 1 per cent – with a simplified standardised approach to be evolved for other banks. Material limits on cross-holdings of capital and eschewing of direct responsibility on external credit rating agencies in the assessment of bank assets have also been proposed by the Reserve Bank. It has also expressed its preference for external credit rating agencies that publicly disclose risk scores, rating processes and methodologies".

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