Chapter 2

Literature Review on the Basel Capital Accord
LITERATURE REVIEW ON THE BASEL CAPITAL AWARD

The ongoing reform of the Basel Accord relies on three “pillars”: capital adequacy requirements, supervisory review, and market discipline. Yet the articulation between these three instruments is far from clear. On the one hand, the recourse to market discipline is justified by common-sense arguments about the increasing complexity of banking activities, and the impossibility of banking supervisors’ monitoring of these activities in detail. It is therefore legitimate to encourage monitoring of banks by professional investors and financial analysts as a complement to banking supervision. (MONETARY AND ECONOMIC STUDIES (SPECIAL EDITION)/OCTOBER 2005).

The Basel Committee's proposals have stimulated an intense academic research. A large number of papers have been dedicated to credit risk modeling, with a particular focus on the consistency between the IRB risk-weighting framework and the empirical evidence on credit risk.

2.1 Pillar I-Minimum capital requirement

The discussion of Pillar I bypasses a number of important issues concerning the definition and measurement of capital, in particular, what is capital; is dividing capital into tiers appropriate and, if so, what should be the criteria; role of “subdebt;” what is the relationship between capital and loan loss reserves; and how should loss reserves be determined over the business cycle (Borio, Furfine, and Lowe, 2001; Laeven and Majnoni, 2003; and Shadow Financial Regulatory Committee, 2000).

The higher degree of risk-sensitivity provided by the IRB approach is certainly welcome, in particular when we consider the extensive literature arguing that uniform capital requirements can induce banks to increase risk-
Several empirical papers report evidence for different countries that banks subjected to capital adequacy requirement curtail their lending in response to a negative shock to their regulatory capital.

Such a reduction in bank loans would not affect the real output, as long as firms can quickly find alternative sources of finance. But given the presence of asymmetric information in the financial market, this may not be feasible for some borrowers, so that they are forced to curtail their investment. A fall in loan supply is therefore likely to affect the smaller firms most adversely, since they tend to have little access to financial markets. Hence, if banks cannot raise capital flexibly and some firms are dependent on bank loans, a fall in bank capital or an increase in capital adequacy requirement leads to a reduction in aggregate loan supply and output.

Altman and Saunders (2001) compared the capital charges under the Standardized Approach to those obtained under the foundation Internal Ratings-Based (IRB). They argued that for banks with an average quality portfolio, there is no incentive to shift from the standardized to the foundation IRB approach.

Milne and Whalley (1999, 2001), Milne (2001a), interpreted that bank capital regulation increases capital requirements which in turn reduces bank appetite for risk in the short run and has little impact in the long run.

The recent literature suggests that capital adequacy regulation may also affect the monetary transmission mechanism. If some firms are “bank dependent”, the responsiveness of loan supply to changes in monetary policy determines the strength of the transmission mechanism. Chami and Cosimano (2001) and Van den Heuvel (2002) argued that capital adequacy regulation gives rise to a financial accelerator. In both papers, a tight monetary policy reduces banks’ capital and constrains their ability to lend, if they are subject to capital adequacy requirement.
Finally, Kirstein (2002) examined whether banks have an incentive to reveal the quality of their loan portfolio under the IRB approach. He comes to the conclusion that this is the case only if the regulator validates the internal ratings and imposes a fine on the banks that overestimated the quality of their loans.

Frey and McNeil (2002) addressed the non-coherence of VaR as a risk measure in the context of portfolio credit risk. They show that VaR is not subadditive, which questions its use for the definition of capital requirements, as is proposed under the new Basel Accord.

Jackson, Perraudin and Saporta (2002) compared the solvency standard implied by the new Accord to the solvency standard banks chosen by their own capital setting decision. They concluded that for large international banks, the minimum regulatory capital requirement would not be binding.

A smaller number of papers look at the new Basel Accord from an incentive perspective.

Gordy (2002) demonstrated that such a risk-bucketing approach, i.e. capital requirements which only depend on the characteristics of an individual exposure, is consistent with an asymptotic single risk factor credit portfolio model, itself based on the Merton (1974) options-based model of firm default.

Roy (2003) studied the impact of capital requirement on risk taking by commercial banks of seven OECD countries within the framework of the simultaneous equations framework. He found that changes in capital and credit risk were negatively related over the period studied, which supported the argument that stringent capital requirements went hand in hand with greater financial stability in addition to imposing a higher capital buffer against unexpected credit risk losses. However, they also found evidence indicating that the regulation was ineffective in raising the capital ratio of
In a simple static model, Kashyap and Stein (1994) have shown that if the capital adequacy requirement is binding, bank loans may not respond at all to a monetary expansion. In a more general but similarly static framework, Tanaka (2002) showed that the monetary transmission mechanism is weakened if banks are poorly capitalized, or the capital adequacy requirement are very stringent under these circumstances, they have little scope for expanding their loan supply in response to a monetary expansion. In a dynamic context, Van den Heuvel (2002a) illustrated that the effects are more subtle. Although the loan supply of a poorly capitalized bank may not initially respond to an expansionary monetary policy, it tends to overreact after the first quarter. This was because a lower interest rate increases banks' profits and hence reduces the probability that the capital adequacy requirement will bind in the future. Thus, if banks are initially poorly capitalized, loan supply will not respond to an expansionary monetary policy in the first instance, but its dynamic effect may well be stronger.

2.2 Pillar II- Supervisory Review

Supervisory review “is intended... to ensure that banks have adequate capital to support all the risks in their business” (Basel, 2003, p. 138) determined both by Pillar I and by supervisory evaluation of risks not explicitly captured in Pillar I, e.g., interest rate risk and credit concentration. “Supervisors are expected to evaluate how well banks are assessing their capital needs relative to their risks and to intervene, where appropriate.

This interaction was intended to foster an active dialogue between banks and supervisors such that when deficiencies are identified, prompt and decisive action can be taken to reduce risk or restore capital” (Basel, 2003, p. 138). This supervisory responsibility was spelt out further in three of four key principles
developed for supervisory review. Principle 2 of Pillar II states that “supervisors should take appropriate supervisory action if they are not satisfied with” (Basel, 2003, p. 142) their review and evaluation of the adequacy of the banks’ internal models. Moreover, principle 3 states that “supervisors 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” (Basel, 2003, p. 144). Principle 4 states that “supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels... and should require rapid remedial action if capital is not maintained or restored” (Basel, 2003, p. 144). But nowhere in CP3 are supervisors granted the tools and authority to perform these functions. This makes it less likely that country not currently granting regulators such powers will introduce them when adopting Basel II.

Calem and Rob (1996) designed a dynamic (discrete-time) model of portfolio choice, and analyzed the impact of capital-based premia when regulatory audits are perfect. They showed that regulation may be counterproductive: a tightening in the capital requirement may lead to an increase in the risk of the portfolios chosen by banks, and similarly, capital-based premia may sometimes induce excessive risk taking by banks. However, this never happens when capital requirements are stringent enough.

Froot and Stein (1998) modeled the buffer role of bank capital in absorbing liquidity risks. They determine the capital structure that maximizes the bank’s value when there are no audits or deposit insurance.

regulation. They showed that VaR regulation was better, since it reduces the frequency of audits needed to prevent risk shifting by banks.

Milne and Whalley (2001) developed a model in which banks can issue subsidized deposits without limit to finance their liquidity needs. The social cost of these subsidies were limited by the threat of regulatory closure. Milne and Whalley (2001) studied the relation between two regulatory instruments: the intensity of costly auditing and the level of capital requirements. They also allowed for the possibility of banks' recapitalization. They showed that banks' optimal strategy was to hold an additional amount of capital (above the regulatory minimum) used as a buffer against future solvency shocks. This buffer reduced the impact of solvency requirements.

Finally, Pagès and Santos (2001) analyzed optimal banking regulations and supervisory policies according to whether or not banking authorities are also in charge of the deposit insurance fund. If this was the case, they showed that supervisory authorities should inflict higher penalties on the banks that do not comply with solvency regulations, but should also reduce the frequency of regulatory audits.

Following Leland (1994), Bhattacharya et al. (2002) derived closure rules that can be contingent on the level of risk chosen by the bank. Then they examined the complementarities between two policy instruments of bank regulators: the level of capital requirements and the intensity of supervision.

2.3 Pillar III-Market Discipline

Market discipline may be defined as actions by stakeholders to both monitor and influence the behaviour of entities to improve their performance (Bliss and Flannery, 2002). Pillar III in Basel II was intended "to complement the minimum capital requirements (Pillar I) and the supervisory review process (Pillar II) ... [and] to encourage market discipline by developing a set of
disclosure requirements which will allow market participants to assess... the capital adequacy of the institution” (Basel, 2003, p. 154).

However, as argued by D’Avolio, Gildor, and Shleifer (2001), “market mechanisms . . . are unlikely themselves to solve the problems raised by misleading information . . . For the future of financial markets in the United States, disclosure [of accurate information] is likely to be critical for continued progress.” In other words, financial markets will not by themselves generate enough information for investors to allocate their funds appropriately and efficiently, and in some cases will even tend to spread misleading information. This means that disclosure of accurate information must be imposed by regulators.

Décamps, Roger and Rochet (2002) examined the optimal mix between the three pillars. They showed that market discipline can reduce the minimum capital requirement needed to prevent moral hazard.

Unfortunately, the requirements for effective market discipline are not discussed in the section on market discipline in CP3. Rather, the section discusses in great detail what information on a bank’s financial and risk positions need be disclosed to the public (Lopez, 2003).

In a recent empirical study of disclosure in banking, Baumann and Nier (2003) found that more disclosure tends to be beneficial to banks: it decreases stock volatility, boosts market values, and increases the usefulness of accounting data.

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As argued by Rochet and Vives (2004), too much disclosure may trigger bank runs and/or systemic banking crises. This happens in any situation where coordination failures may occur between many dispersed investors.

2.4 Studies on Implementation of Basel II across the world

Hanson and Starley (2004) in a primary data survey conducted by using Ernst & Young scale found that data gathering for internal ratings model development was the topmost credit risk management challenge, while identification of key risk indicators was the topmost operational risk management challenge. Among the various credit risk tools under implementation, credit risk modeling, credit risk warehousing, data cleaning tool, portfolio credit risk analysis tool, reporting tool for risk disclosure had been implemented to a certain extent ranging between 25-40%. However, as far as credit scoring system was concerned, the implementation was only within 10-15% range.

In a study published in July 2004, in the special supplement of The Banker based on survey data, it was found that among Asia and Emerging markets the apprehensions that capital position will worsen was maximum (25%) while in Canada and Australia this proportion was 10%, in America 6%, in Europe there was no such feeling. As regards the contemporary status of Basel II programs the compliant solution roll out was ready between 20% to 50% for various issues with an average of around 30%. With reference to Banks targeting IRB approach the US banks were at the top while Japanese, Asian and South African/Brazilian banks were at the bottom rung. On the issue of reliance on IT for FTE resources the Canadian and Australian banks led the tally (42%) as against just 4% for Asia & emerging markets and US markets. The reliance on non-IT FTE resources was maximum in European large banks (49%) while it was minimum in US banks (17%). As far as FTE resources (IT + Non-IT) for Basel II programs were concerned the Canadian and European banks led the tally (75%) while European large banks (71%), European
medium banks (41%), Asia and emerging markets (24%) and US banks (21%) followed them in that order.

In a study, on the readiness of Thai Banks for Basel II’s Pillar II and Economic Capital Management? (July 3, 2006). Implementing Basel II according to the requirements of the Basel Committee on Banking Supervision and the Bank of Thailand, most of the commercial banks usually focus on Pillar I - Minimum Capital Requirement at the moment. However, the banks should also be aware that other requirements are just around the corner described in Pillar II - Supervisory Review Process.

**Four key principles under Pillar II**

The Bank of Thailand had issued the circular on 6 March 2006 for the draft of supervisory review process commonly known as Pillar II of Basel II which comprise of four key principles.

**Principle 1:** The banks should have a process for assessing their overall capital adequacy in relation to their risk profile and strategy for maintaining their capital levels.

**Principle 2:** The Bank of Thailand has the responsibility to review and evaluate banks’ internal capital adequacy assessments and strategies as well as the ability to monitor and ensure their compliance with regulatory capital ratios.

**Principle 3:** The banks should have the ability to maintain their capital in excess of the minimum regulatory capital ratios in case that the Bank of Thailand views the minimum capital not appropriate or adequate for banks’ risk profile.

**Principle 4:** The Bank of Thailand may intervene at an early stage to prevent capital from falling below the minimum level required to support the risk characteristics of banks and request rapid remedial action if capital is not maintained or restored.
In interpreting these key principles, the supervisors are moving to a position where they will require banks to define clear business and risk strategies which demonstrate how business models ensure that risk can be safely borne. They will also insist on the implementation of systems to assess whether the level of capital is consistent with the risk profile of the bank and a strategy for maintaining such capital level.

**Pillar II challenge**

While Pillar I of Basel II provide three distinct approaches for credit and operational risk and options within each one. Even though it provides a certain degree of flexibility, it still has a high degree of standardisation. Pillar II just provide the desired flexibility and at the same time address factors not covered by Pillar I including a) risk considered but not fully captured such as credit concentration risk, b) factors not taken into account such as interest rate risk in banking book and strategic risk and c) factors external such as business cycle effects.

Moreover, in case that the banks select to apply the Internal Ratings-Based approach for credit risk and the Advanced Measurement approach for operational risk, under Pillar II, the supervisory will assess the compliance with the minimum standards and disclosure requirement to ensure that all requirements are being met both as qualifying criteria and on a continuing basis.

Under Pillar II, the supervisors will evaluate the bank’s risk management system and provide recommendations or intervene. Accordingly, the banks are convinced to enhance risk management techniques and improve risk monitoring and management.

**Economic capital management as a helpful tool**

Under Basel II requirement of Pillar II, it will be impossible for banks to discharge their risk management responsibilities and comply with the regulations without a comprehensive risk and capital management framework;
consequently, the economic capital is rapidly moving importance in the banking industry. In European countries, the supervisors regard economic capital management as a means to guarantee that the bank has sufficient capital to cover its risks and protect investors, shareholders and customers from the risk of insolvency.

At the strategic level, economic capital analysis assists the management to determine the optimal capital level consistent with the determined risk appetite. At the operational level, it offers a much more accurate means of assessing performance of each business unit, product and service. This will enhance the way to be more effective decision making on product and marketing expansion and portfolio remodel, and also allow accurate risk-based pricing and elimination of unprofitable business units.

Last but not least, economic capital also makes it easier to communicate the bank's capital strategy, risk management and value-based performance to supervisors, shareholders, investors and customers as well as rating agencies who are increasingly focusing on assessing bank's risk management and risk-bearing capacity in an economic capital context.

For those banks just starting out on Pillar II and economic capital processes, they constitute a challenging agenda as they will require dedicated effort and resources and expert guidance.


The study revealed that:

Many banks were still at relatively early stages of their Basel programmes when the survey was carried out, and some may have struggled to catch up, particularly in the Asia Pacific region, given the 2007 implementation
date then proposed in the draft Accord. The revised time frames (for some at least) may have come as a welcome extension to many. At the same time, many banks clearly perceived the advantages to be gained from Basel II, especially in its potential to enhance credit ratings and thus drive benefits across the business.

As banks have progressed in their Basel preparations, they appear to have shifted their attention away from their initial focus on the possibility of a lower capital requirement. There is a realisation that Basel is less about reducing regulatory capital, and more about running the whole business more effectively and efficiently.

- More than 90 percent of respondents have started a Basel project.
- Over half of the participants are still in the pre-study / assessment phase in their credit risk projects.
- Less than 25 percent of respondents have started implementation for credit risk, and less than 15 percent have begun implementing operational risk processes.
- Less than 10 percent of respondents have started the testing and validation phase in either area (which, based on our experience, consumes 25 to 30 percent of total project time)
- Almost 60 percent of respondents see the short time frame for implementation as the main cause for concern.
- Over 60 percent of respondents agreed that their adopted approach would improve their credit rating system, process quality and management of operational risk.
- Almost 80 percent of respondents agreed that implementing Basel II will provide a better foundation for future developments in risk management and risk-sensitive capital assessment.
Many banks in Asia Pacific see the New Accord as a compliance requirement. This may explain the relatively early stages of their Basel programmes since few Asia Pacific central bankers have announced their requirements. Asia Pacific banks that operate globally/regionally see the New Accord as more than just a compliance requirement, have progressed further with their Basel programmes.

In a report published in 2005, Indian banks were well behind schedule for the implementation of Basel II, according to a survey of 252 financial entities across 36 countries by consulting firm KPMG.

In an assessment of impact of Basel-II by Carvalho (2005) concluded that implementation of Basel-II instead of providing greater safety against risks will add up to the cost of lending.

An impact assessment of Basel II in developing economies with special reference to Bangladesh was done by Md. Akhtaruzzaman. A pilot testing model for Basel II parallel calculations was employed to measure the impact of capital requirements of a commercial bank in Bangladesh. The result showed that capital requirement to comply with Basel II increased by 41.94% as compared to Basel I. However, despite this phenomenal change in capital requirements, the author suggested that the norms are for strengthening the banking systems globally and this objective should not be lost. In his view developing economies need to be prepared and to adapt to the changing global conditions and to adapt the norms to their own advantage.

In an overview of Indian Banks' prepared for Basel II, G. Sankaranarayan, Sr. Vice President, Indian Banks' Association opined that the overall position as regards preparedness of Indian banks for embracing Basel-II is satisfactory. He based his views on the Indian Banks' past performance in nineties when they adopted the Basel I standards without encountering any
major hurdles. He found Indian banks to be confident enough to adapt to the Basel-II recommendations in the given timeframe.

In a study by Central Bank of UAE (2006), it was assessed that Basel II implementation in the UAE was expected to have a positive effect on the financial system's stability and soundness. It was expected that Basel II would encourage banks and other financial institutions to improve their risk management systems and corporate governance. It was anticipated that the implementation process in the UAE would take place gradually with the ultimate intention for the banks to adopt more advanced methods. The need of bank's internal experts, central bank's experts and external experts was also emphasized for successful implementation. A need for formation of joint working groups towards reaching a consensus in framing regulations was also felt.

In a seminar organised by the Central Bank of UAE on course for Basel II implementation in which experts and senior representatives from KPMG, Ernst & Young and PricewaterhouseCoopers shared their thoughts with the audience in respect of the issues arising it was emphasized that a lot of discussion is required to be made in respect with various issues concerning the local banks and foreign banks operating in UAE. It was cited that countries around the world have opted to implement the different elements of Basel II in stages that suit the particular environment in their own markets and a similar approach should also be adopted in UAE after considering various issues involved.

Issac John (2007) stated that the UAE Central Bank expects banks to adopt the 1996 Amendment to Basel II, in accordance with the Basel II requirements, in phases, and must be compliant with the standardised approach to credit risk evaluation by the end of this year.
As part of the strategic initiative to implement Basel II in the UAE, the central bank and external consultants conducted a comprehensive diagnostic review and Gap Analysis, with the objective to verify the status of Basel II readiness of all banks. Based on expectations of banks, the analysis indicates that Basel II implementation in the UAE is expected to have a positive effect on the financial system's stability and soundness.

Hussein A. Hassan Al-Tamimi (2008) conducted a study to measure the preparations of UAE. Based on the results of the analysis in this study, it was concluded that the UAE banks were ready for the implementation of Basel II. This conclusion was supported by the fact that the UAE banks have sufficient resources for the implementation of Basel II, which represents a prerequisite for the implementation. The readiness of the UAE banks for implementing Basel II is also supported by the common understanding of Basel II by the employees of the UAE banks and the satisfactory level of education on Basel II. The results also indicate that there is no difference between UAE national and foreign banks in their readiness for the implementation of Basel II, which gives a positive impression about the competitive advantage of the national banks. Finally, the results support the importance of training and education on Basel II as one of the requirements of the implementation.

Criticism of Basel II

In a report by Indian Bankers' Association the KPMG findings have been cited as 'Risk Management Revolution disguised as Regulation'. They had acknowledged the fact that any attempt to regulate the complexity that current global financial infrastructure presents is far from easy. The complexity involved in modeling has been termed as 'modeling risk', which can be reduced by back-testing the model, but not eliminated entirely.
The criticism has been done under the sections "Pro-cyclicality", "Fearsome complexity", "Heavy implementation costs", "Credit risk concerns" and "Concerns of National Supervisors".

Pro-Cyclicality

Risk-based financial regulation is inherently pro-cyclic. The pro-cyclicality springs from the treatment of risk as an exogenous variable, whereas in reality, it is endogenous. The actions of a market participant based on a predictive model affects the market and if many participants are using the same model, their combined actions render the basic assumptions of the model on the heterogeneous nature of the market (normal distribution) false.

'Requiring banks to run their capital through a stress test to assess what impact worsening economic conditions will have on their loan portfolios, and requiring bank supervisors to evaluate those models independently, increases the safety of the bank. This is one of the measures that will help the banks to be less pro-cyclical because they will have taken into account the whole (business) cycle,' counters Jaime Caruana, Chairman of the Basel II Committee in an interview to Reuters.

The US Comptroller of Currency, John D. Hawke Jr., considered CP3 (Consultative Paper 3) published by Basel Committee as having 'mind-numbing complexity'. 'Can anyone reasonably assume that a mandate of the complexity of Basel II will be applied with equal forcefulness across such a broad spectrum of supervisory regimes,' asked Hawke.

Fearsome complexity

The meek answer from BCBS was that the complexity of the new accord resulted from the complexity it seeks to address. 'This (Basel II implementation) is a task of extreme complexity involving the intersection of computer science, mathematics and finance,' said Dr. Ron Dembo, founding
chairman of Algorithmics Inc., a Toronto-based company specializing in financial risk management software.

Heavy Implementation Costs

Datamonitor estimated that financial institutions worldwide will spend close to US$ 4 billion over two years on upgrading databases and other systems in order to comply with Basel II. Aberdeen Group estimated that banks will spend US $3.2 billion in the next four years preparing for Basel II. 'Asian banks are expected to spend between seven to ten per cent of their global IT and business operations budget on Basel II compliance for the next four to six years,’ observes BIS.

While such estimates were music to the ears of software suppliers and consulting firms, the moot question for banks were 'what benefits will accrue from this investment?' and 'how long will the pay back period be?'

Credit Risk Concerns

Using the standardized approach, un-rated corporate borrowers attract less risk weight (100 per cent) than the lowest rated borrower (150 per cent) giving incentives to high-risk borrowers to remain un-rated.

Another argument against Basel II is that it does not resort to full credit risk modelling--it fails to take into account portfolio effects of risk mitigation through diversification.

The New Accord is criticized on the ground of being as much prescriptive as to be lacking in trust for national supervisors. Also, Pillar II requires national supervisors to give up arms-length supervision in favour of participative implementation.

Concerns of National Supervisors

Supervisors also need to invest heavily in people and technology to perform their duties as envisaged in Basel II.
Perceived Impact

Adapting to Basel II will be more demanding for some institutions than for others, based on factors including current risk management practices, business size, geographical spread, risk types, specific business, portfolio, and market conditions.

Apart from banks and regulators, who are directly affected by Basel II, customers, rating agencies, capital markets and other financial companies (outside the scope of Basel II) will also be affected. Banks will have to implement an enterprise-wide risk management framework, which will entail establishing relevant processes and gathering, integrating and analysing large amount of data. Using quantitative methods to manage risk - and to deploy capital based on risks - requires high quality and high frequency data.

Impact on various entities in financial markets

Customers will find that they have to cope with increased demands for timely information from banks that are on IRB approaches. Risk-based pricing of credit products will become the norm as banks begin differentiating customers as per their risk profiles. Riskier borrowers are likely to find their borrowing costs going up and/or credit lines tightened up.

Rating agencies may face more competition as the market for them will expand and deepen, which will be a driver for them to be more transparent in their rating process.

Good quality rated corporates will prefer capital markets to banks for their funding. Securitisation and credit derivatives will increasingly be used as credit risk hedging tools.

Basel II is also likely to impact financial institutions that do not have to comply with it. Non-banking corporations such as credit card companies, leasing companies, auto manufacturers and financiers, or retailers’ financing
arms may not have to fulfill the potentially extensive disclosure requirements prescribed by Basel II nor make investments in managing operational risk, which will put them at a competitive advantage vis-à-vis banks.

In an attempt to assess the impact of Pillar I requirements of capital adequacy, BCBS did undertake a few quantitative impact surveys (QIS), the last of which is referred to as QIS-3. The results indicated that, in general, banks’ required capital will decrease with respect to credit risks and increase with respect to operational risks. However, in Asia and other emerging markets, several factors may raise the required capital even for credit risks, as real estate continues to be widely used as collateral for business loans, and the standardised approach, which is the most likely approach for many banks, places a 150 per cent risk weight on non-performing loans. Basel II will increase the level of capital that is required for banking institutions in the emerging markets, mainly owing to the new operational risk charge, which will be higher if the basic indicator approach is used.

**Impact on emerging markets and smaller banks**

'I don't believe that any responsible supervisor can or should make a judgment about the impact of BASEL II on the capital level it supervises on the basis of QIS-3,' observed Hawke, emphasizing the need for national level impact study.

By application of differential risk weights on the basis of sovereign rating as a benchmark, the capital inflows in emerging markets could be seriously affected as most of the borrowers in such markets will be categorised under the speculative grade.

Smaller banks would find the investments on Basel II compliance too big for their existing budgets.
Implications for India

The official position of the Reserve Bank of India (RBI), as emphasized in its response to CP3 of BCBS, is as follows, 'In its (Basel II) attempt to strive for more accurate measure of risks in banks, the simplicity of the present Capital Accord is proposed to be replaced, with a highly complex methodology which needs the support of highly sophisticated MIS / data processing capabilities. The complexity and sophistication essential for banks for implementing the new capital accord restricts its universal application in the emerging markets.' RBI had also suggested that a common definition of 'internationally active banks' be provided by BCBS. Even the United States of America is not adopting the new accord for all of its banks. But, in the same response, RBI has also affirmed that it is 'fully committed to implement the best international practices'.

The response from the Indian banking industry was equally positive. 'Indian Banks are not averse to making the investment of the effort to embrace global practices,' asserts V. Leeladhar, chairman, Indian Banks' Association (IBA) and chairman and managing director, Union Bank of India. H.N. Sinor, chief executive officer, IBA, added 'Basel II is a reality that no progressive country can afford to ignore. It provides an opportunity for global integration and ushering in international best practices.'

Rana Kapoor, managing director, YES Bank (the latest entrant to new generation private banks in India), held that 'Indian banks have a demonstrated track record of compliance – the system subjected itself voluntarily to the Financial Sector Assessment Programme (FSAP) of the International Monetary Fund (IMF) and was found to be in compliance with the relevant principles.'

P.S. Shenoy, chairman and managing director, Bank of Baroda, believed that Basel II compliance would eventually result in banks acquiring a competitive edge, stating 'Banks that move proactively in the broad direction
outlined by the Basel Committee will have acquired a definite edge over their competitors when the new accord enters the implementation phase.' The largest banking conglomerate in India, State Bank of India, has already declared its firm resolve to become Basel II compliant.

Viewed against these brave words from the major Indian banks, the Indian regulator RBI, appears to be more cautious and pragmatic, holding a view that 'Banks in emerging markets would, therefore, face serious implementation challenges due to lack of adequate technical skills, under development of financial markets, structural rigidities and less robust legal systems. Besides banks, supervisors would be required to invest considerable resources in upgrading technology systems, and human resources to meet the minimum standards.'

Having successfully implemented the 1988 Basel Accord, the Indian banking industry is poised to implement the 1996 Amendment for inclusion of market risk in capital adequacy calculations this year. Sinor expected Indian banks to eventually embrace Basel II, albeit slowly and 'without making noises'. Supporting the phased approach taken by RBI with respect to Basel II, Sinor feels that 'the new accord provides incentives to banks for improving their credit portfolio through risk management'. Leeladhar expressed confidence that 'in any event, banks will reap the benefits of improved systems and efficiency in the long term'.

Initially, banks in India will have to adopt the standardised approach (possibly the simplified one) for credit risk, and the basic indicator approach for operational risk calculations. RBI had done a selective impact study last year using these approaches on data sourced from seven major banks. The results of both the RBI study and the QIS-3, suggest an increase of one to two per cent on account of credit risk and eleven per cent on account of operational risk, in the minimum capital requirements, moving from Basel I to Basel II. Kapoor provides the roadmap, saying 'Most (Indian) banks are likely to start
with simpler, elementary approaches, just adequate to ensure compliance to Basel II norms and gradually adopt more sophisticated approaches. The continued regulatory challenge will be to migrate to Basel II in a non-disruptive manner. Competitive compulsions will ensure that banks make the necessary investments in the appropriate technology and qualified, experience professionals to adopt advanced approaches.'

Shenoy felt that 'The new accord will reward those banks that use a more sophisticated IRB approach to measure and manage risk.' Countered by Niall S.K. Booker, chief executive officer, HSBC India and chairman of the IBA Committee on Basel II, 'There is the possibility that in international markets access may be easier and costs less for banks adopting a more sophisticated approach.... however in a market like India it seems likely that the large domestic players will continue to play a very significant role regardless of the model used.' Meanwhile, Leeladhar remain hopeful that banks will ultimately adopt the IRB approach for credit risk.

The additional capital charge on account of operational risk is considered 'harsh' by bankers and software suppliers unanimously. But all of them agree that it will benefit banks in the long term by making them sensitive to operational risk. Sinor expected that the operational risk charge will eventually be calibrated down as the implementation progresses.

It is, however, certain that efforts have begun at major public sector banks and some new private sector banks in India, to prepare for the new paradigm of enterprise risk management.

'Public sector banks in India will initially focus on credit risk,' predicted H.S. Rajashekhar, principal consultant - risk management at iflex Solutions, adding that 'there is a need to develop a business case on adoption of Basel II prescriptions'. Rajashekhar also felt that proprietary risk models will be used as competitive tools. Aruna Rao, executive vice president, Polaris
Software Labs, and Manoj Kunkalienkar, executive director, ICICI Infotech, agree, voiced that Basel II was not a short term opportunity like Y2K but an evolving commitment to align with global practices in risk management.

C. Krishnan, head - risk management practice, Tata Consultancy Services, felt that Basel II will favour, at least in the short term, the bigger banks who have the technology advantage, but considered this as an opportunity for domestic banks to catch up with the big league in the long term. Agrees Leeladhar 'While the new accord may initially appear to favour those established in development markets, the ultimate beneficiaries will be those banks that can upgrade their systems to sophisticated levels in the minimum possible time.'

Booker supported the adoption of advanced approaches. 'The cost of IT development is almost certainly less in India than elsewhere,' said Booker and asserted further that 'there may be a faster payback for the more advanced method of internal ratings despite the greater level of investment required as the payback in terms of reduced capital utilisation at least on the credit side may be quicker depending of course on each banks cost of capital.'

Sinor was confident that 'Customers in India will not be marginalized. Instead, there will be qualitative changes in lower rated corporates and SMEs towards improving their rating to obtain a price advantage.

It was generally agreed the implementation of Basel II is likely to provide momentum for mergers and acquisitions in the Indian banking industry. Shenoy thought that 'The higher disclosure requirements in the banking sector might lead to a growing tendency towards structural changes in the form of mergers and acquisitions.' Kapoor provided another reason, stating 'as more and more banks move towards the advanced approaches, the gap between the strong and weak banks will increase further, making the weaker banks
potential takeover targets'. Booker and Sinor attributed it to economic logic, with Basel II just accentuating it.

As this report was about to go to press, Kishori J Udeshi, deputy governor, RBI, in her speech at the \textit{World Bank/IMF/US Federal Reserve Board 4th Annual International Seminar on Policy Challenges for the Financial Sector: Basel II} at Washington on June 2, 2004, summed up the Indian response to Basel II. Here are a few excerpts from her speech, which describe RBI's current approach:

- 'We are now not debating whether to go forward with Basel II but how to implement Basel II. In fact, understanding Basel II concepts is one step away from agreeing to it in principle. Implementing Basel II is another long step away from understanding it'.

- \textit{RBI's approach to the institution of prudential norms has been one of gradual convergence with international standards and best practices with suitable country specific adaptations. Our aim has been to reach global best standards in a deliberately phased manner through a consultative process evolved within the country. RBI had in April 2003 itself accepted in principle to adopt the new capital accord}'.

- \textit{RBI has announced, in its Annual Policy statement in May 2004 that banks in India should examine in depth the options available under Basel II and draw a road-map by end December 2004 for migration to Basel II and review the progress made thereof at quarterly intervals}'.

- \textit{At a minimum all banks in India, to begin with, will adopt Standardized Approach for credit risk and Basic Indicator Approach for operational risk. After adequate skills are developed, both in banks and at supervisory levels, some banks may be allowed to migrate to IRB Approach}'.


• India has three established rating agencies in which leading international credit rating agencies are stakeholders. However, the level of rating penetration is not very significant as, so far, ratings are restricted to issues and not issuers. Encouraging ratings of issuers would be a challenge.

• Basel II could actually imply that the minimum requirements could become pro-cyclical. No doubt prudent risk management policies and Pillars II and III would help in overall stability. We feel that it would be preferable to have consistent prudential norms in good and bad times rather than calibrate prudential norms to counter pro-cyclicality.

• Banks adopting IRB Approach will be much more risk sensitive than the banks on Standardised Approach, (so) the banks on Standardised Approach could be inclined to assume exposures to high risk clients, which were not financed by IRB banks. Due to concentration of higher risks, Standardised Approach banks can become vulnerable at times of economic downturns.

• Keeping in view the cost of compliance for both banks and supervisors, the regulatory challenge would be to migrate to Basel II in a non-disruptive manner. We would like to continue the process of interaction with other countries to learn from their experiences.

From an Indian perspective, it appears that Basel II compliance may be a challenge in the short term but it will certainly prove to be an opportunity in the long term.

Implication in UAE

The challenges facing UAE banks while they implement Basel II guidelines were highlighted at the Financial Technologies Middle East (FTME) – Riskraft Consulting Ltd, roundtable conference in 2007 for Risk Managers entitled ‘Basel II and Beyond’. The biggest challenge faced by the banks is the quantification of operational risk – the risk of failure of systems, processes and
people. This challenge is magnified due to the lack of credible, quality and granular data.

The Risk manager from the UAE stated that most of the banks may need more than six months to be compliant with Basel II accord. The responses from the industry were positive with the summation that Globalization of UAE’s financial sector is a reality and its banks must subject themselves to global standards and disciplines to remain competitive. Adoption of the risk intelligence system provided under the Basel II norms not only leads to better and prompt compliance but increases efficiency and productivity of the banks. It becomes a source of competitive advantage in the international financial market.

Arshad Khan, Director, FTME commenting on progress of compliance effort though “Banks in UAE are very well conversed with the benefits that Basel 2 compliance will bring for them. That’s the reason that even though they are facing several challenges still sincere efforts are being put-in to become compliant in the near future. Compliance with these norms helps banks in emerging economies to prepare themselves for global competition and adopt best international practices, particularly in risk management. ‘Basel II compliance program should be viewed by UAE banks as a source of competitive advantage rather than as just another regulatory issue.” Dr. A K Nag, Chief Consulting Officer of Riskraft defended the importance of Basel II thought “Basel II compliance mitigates various kinds of risks that any bank is exposed to. Mitigation of such kind of risks is an important part of their overall risk assessment program. In the absence of proper information management framework, banks in emerging economies do not have the required risk profile of their borrowers. Availability of detailed data can be used to price various banking products differentially for different types of customers”.

From the UAE perspective, its implementation is seen as essential for domestic banks in emerging market economies to maintain their independence.
<table>
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<th>S. No.</th>
<th>Author</th>
<th>Management Aspect/ Focus of Survey</th>
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<td>2.</td>
<td>KPMG International (2004)</td>
<td>Organising &amp; Strategic planning</td>
<td>All banks of Thailand</td>
<td>Review of Secondary data from Bank of Thailand</td>
<td>Emphasis on economic capital was laid. No discussion regarding Pillar-3 or impact.</td>
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<td>3.</td>
<td>KPMG International (2004)</td>
<td>Finance, Organising and Planning</td>
<td>303 institutions 39 countries</td>
<td>Primary data/ survey method</td>
<td>Short time frame a major concern. Majority viewed Basel-II to be a better foundation for future development in risk management. Regional differences observed.</td>
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<td>4.</td>
<td>KPMG International (2005)</td>
<td>Finance, Organising and Planning</td>
<td>252 institutions 36 countries</td>
<td>Primary data/ survey method</td>
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<td>6.</td>
<td>Md. Akhtaruzzaman</td>
<td>Finance</td>
<td>–</td>
<td>Pilot testing model</td>
<td>Capital requirements shown to grow up</td>
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Table 20: Methodology Adapted by Different Studies in the past
2.5 Gaps in Literature

1. There are almost no studies to study the impact of Basel-II framework in comparative terms.

2. Most of the studies have been targeted to assess the availability of physical and tangible facilities but there is no study to assess the psychographic setup in terms of acceptance and readiness for the Basel-II framework.

3. Basel-II is being implemented in phases. Most of the available studies are before the start of Pillar-II implementation and are usually the pre-implementation assessments. Only a few studies are available which take stock of the contemporary situation in banks.

4. No study has taken up the issue of impact of ownership on acceptance of Basel-II, though the priorities in banking sector change with the change in ownership pattern.

2.6 Conclusion

The review of literature revealed various gaps in literature primarily those related to study the perception of the decision-makers regarding various aspects related to the provisions, implementation and preparedness. Apart from that there is no contemporary research on the issue of status of banks on different stages of implementation. The present study tries to take stock of the situation at a time when the Pillar II implementation is almost at the verge of completion. In the further chapters of this work an attempt will be made to fill these gaps.