

Demystifying Basel II

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Keynote Address delivered at
FICCI-IBA Conference on
“Global Banking: Paradigm Shift” at Mumbai, India
on 26th September 2006

After years of research supported by several theoretical and empirical studies including rounds of country specific quantitative impact surveys and long drawn consultation with the industry, the Basle Committee on Banking Supervision (BCBS) issued an elaborate framework of *International Convergence of Capital Measurement and Capital Standards – A Revised Framework* (called Basel II Accord) in November 2005. Basel I served banking industry well since its introduction in 1988 but it lagged behind the financial market developments and innovation. It increasingly became outdated and flawed as it relies on a relatively crude method of assigning risk weights to assets, emphasized mostly balance sheet risks relative to multiple risks facing financial firms today. Furthermore, it offered a regulatory approach to capital determination and standard setting which did not capture fully the range of large and complex banking operations and the accompanying range of diverse set of economic risks.

Addressing the perceived shortcomings and structural weaknesses of Basel I, the Basel II Accord – a landmark regulatory framework – offers a newer and comprehensive approach and methodology for financial sector regulatory capital calculation which recognizes well the advancements and innovations in banks’ businesses, policies and structures and the accompanying financial engineering and innovation.

The relevance and significance of Basel II stems from its ability to recognize effectively the different types of risks facing industry and the new products as well as off balance sheet transactions. Some distinct characteristics of Basel II are noteworthy:

- aligns capital of banks with their basic risk profiles,
- it is elaborate and far superior in terms of its coverage and details,
- it has the ability to exploit effectively new frontiers of risk management and gives impetus to the development of sound risk-management systems, which in turn are expected to promote efficiency and more prudent allocation of resources,

- It is perceived to be the harbinger of the future disposition of bank supervision and the evolutionary path on which the banking industry would tread, and

Finally, it is designed to promote financial stability by making the risk-management systems more robust and responsive to tackle the complexities arising out of a host of new risks. Given its complexities, Basel II has been subject of intense debate. The industry has been gripped with complexities of different dimensions of risk and capital calculation methods, data requirements, and costs related to upgrading IT systems and business processes. Meanwhile, regulators are forewarned to facilitate a proper and sequenced adoption of Basle II, while ensuring effective alignment of risk weights and capital requirements in line with Basel II Accord. The debate has brought to forefront some issues and inconsistencies which unless addressed would adversely impact the incentive framework. The final draft of the Basel II incorporated several of industry concerns.

The paper aims to highlight the importance and challenges of introduction of Basel II. Basel II in itself has the ability to meaningfully capture and suggest probable solutions for virtually all dimensions and segments of banking risks. Diversity of approaches and methodology has brought with it criticism and challenges since it may encourage and incentivize some intended and unintended behaviors and practices, while adding to the cost of doing business. The challenges, however, bring new opportunities for global banking systems to adopt more robust risk management approaches which should serve industry well for capital leveraging and taking higher but still manageable risks.

Basel II -- Superior and All-Encompassing Architecture

It is widely recognized that Basel II is a major breakthrough in theoretical and practical world of banking industry and a dynamic framework which will be able to adapt to ongoing innovation and change. Some of the main features (see annexure) of Basel II are noteworthy:

First, while the new Accord maintains the level of capital adequacy requirements at 8% (Tier 2 capital is restricted to 100% of Tier 1 capital) consistent with Basel I, it has shifted emphasis from regulatory to economic capital framework, while giving recognition to new risk mitigation techniques (default protection etc.) and clarifying new trading book capital questions. Careful evaluation of these elements suggests that Basel II is not ideologically about raising as per se capital requirement but focuses on efficient and effective capital allocation. Appropriate and sharpened risk articulation and assessment and safeguards would result in reduced capital requirements. Conversely, ill-conceived financial structures with risky counterparties will attract punitive capital requirements. Basel II in some senses “*serves as a more intelligent solvency capital redeployment.*”

Second, the new Accord has depth and breadth in its architecture and it blends and integrates well, with an element of mathematical rigor, all key prudential and supervision norms, however the rules based approach allows substantive national discretion which has its pros and cons. Basel II at the very basic level consists of the Standardized Approach (SA) which recognizes and defines various asset buckets and assigns them risk weights in accordance with the type and nature of corporate issue and other transactions and delegating its qualitative assessment to external raters. The matrix of risk buckets and weights is considered to have added excessive complexity for less sophisticated banks. The linkage and delegation of quality assessment to external ratings, while understandable, lends excessive confidence on the objectivity and soundness of rating agencies which, in at least developing countries has only thus far rated a small proportion of corporates and issues.

Notwithstanding, the Pillar 1 offers a choice to resort to either a Standardized Approach (SA) which has pre-specified weights or to turn to Internal Rating Based (IRB) approach which involves a foundation and advanced IRB option. These approaches are differentiated on the basis of (i) the available in-house risk assessment expertise, (ii) the size and product mix of the bank, and (iii) overall financial sophistication. There is considerable national discretion for regulators to decide, within the parameters defined under Basel II, on risk weights for different types of finances, treatment of collateral and risk mitigation, etc.

The core pillar is bedecked by two other pillars; and all three pillars are interlinked and intertwined and mutually reinforce each other. Pillar 2 (Supervisory Review) underscores need for strengthening the financial institutions' internal capital assessment processes to capture risks which remained uncovered under Pillar 1 and thus set aside capital in line with the banks' risk profile and control environment. The supervisory review process validates the bank's internal assessments by ensuring that the whole array of risks has been taken care of. Pillar 3 (Market Discipline) complements the other two pillars by requiring disclosures and transparency in financial reporting to promote market discipline.

Third, the Accord encourages banks to recognize all types of risk and take appropriate steps to mitigate these risks, while providing for adequate capital. Besides the credit risk, the Accord for the first time recognizes the operational risk, however, the degree of guidance and complexity in measurement provided within the framework for these risks varies. The **Credit Risk** (the risk of default by the counterparty) is dealt with most comprehensively in the Basel II in line with legacy of the first Accord as well as the banks traditional edge and competence in credit risk assessments.

The inclusion of **Operational Risk**, a fundamental improvement over Basel I, captures risks associated with bank's internal control processes and systems and corporate governance policies and practices. Operational risk calculation explicitly requires capital for "*the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events*" risk. This

definition includes legal risk, but excludes strategic and reputational risk. Three approaches underlie measurement of capital against operational risk:

- (i) Basic Indicator Approach (BIA) –capital for operational risk should be equal to the average over the previous three years of a fixed percentage (denoted $\alpha=15\%$) of positive annual gross income,
- (ii) Standardized Approach capital charge for each business line is calculated by multiplying gross income by a factor (denoted β) assigned to that business line. Beta (ranging between 12-18%) serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line; and
- (iii) Advanced Measurement Approach-- the regulatory capital requirement will equal the risk measure generated by the bank's internal operational risk measurement system using the quantitative and qualitative criteria for the AMA.

Overall the approaches for operational risk assessment are not as nuanced as for credit risk, however the AMA approach does allow for more fine tuning. Once again the banks with better risk assessment would opt for the advance approaches.

Market Discipline pillar underscores need for transparency and disclosure of data and technicalities. The evaluation of banks' risks and its systems and capital adequacy by the market will help ensure integrity and validation of other pillars. For this pillar to work, it needs to be supported by proper accounting rules and more elaborate disclosure of bank's strategies and approaches adopted, risk profile and capital strategy through economic and credit cycle, information of the stress tests, and PD/LGD data.

Fourth, within the pillars, the Accord offers a range of options and incentivizes banks to move from vanilla SA which assigns high risk weights and capital standards to adopting IRB and within it further having the option to choose either the Foundation versus Advanced IRB. These options have clear trade offs but most importantly, IRB offers greater capital relief relative to SA. Nevertheless, IRB systems will only be feasible if they are supported by databases and history on credit losses, rating models and risk management systems etc. and their soundness and integrity has been validated by supervisors.

Banks operating in less developed countries, having limited in-house expertise, and small to medium size are in general opting for SA. The advantage of SA is its relative ease of implementation by even small and mid-sized banks. The main problem, however, is that it would usually result in much higher capital requirements as compared to IRB. There is much less fine tuning of the risk weights, and banks have to rely on external rating agencies. The banks adopting this approach would thus be at a disadvantage against their competitors. Jurisdictions that will stick to the SA for too long may find that their domestic banks are losing ground to the foreign banks operating globally who are more likely to adopt IRB.

Fifth, the IRB approach is being preferred by large global banks, which already competitively price credit risk. The key parameters under IRB approach are PD (probability of Default), LGD (loss given default), M (Maturity) and EAD (Exposure At default). Under the FIRB, the banks calculate PD of their portfolio, while the other parameters i.e. LGD and EAD are prescribed by the regulator. Minimum PD is 0.03% for banks and corporates; no floor has been prescribed for sovereigns. The LGD for senior exposure is 45% and the subordinated exposure attracts a lower recovery of 75%. These rates should be re-examined by the regulators taking into account the ground realities of their respective jurisdictions¹.

The Advanced IRB provides discretion to banks, and as such there is an incentive to move too quickly to AIRB without adequate preparation. The balancing act has to be performed by the regulator, on one hand it has to promote the efficiency of banking capital and pursue more fine tuned risk assessment, and on the other it has to ensure that banks have sufficient resources and expertise to undertake this complex task. The AIRB approach has very **high sensitivity to the changes in LGD and M given the differences in PDs**. In a paper by ING Bank², it is shown that at higher LGD levels e.g. 75% there is a particularly strong impact on the risk weights of bonds of lower rated issuers. On a similar note the variations in maturity M, have greater impact on low rated borrowers as compared to high rated borrowers. It implies that in case of a BBB- rated borrower, the risk weights will be highest for subordinated loans (LGD 75%) having long maturity (e.g. 5 years). At the same time for short term secured loans (i.e. with low LGD) the difference in risk weights will not vary a great deal with the quality of borrowers. The use of AIRB would thus produce winners and losers in the banking sector. The low rated borrowers and users of long term funds would face much higher costs of funds, whereas public sector and other high quality borrowers would gain. **Regulators have to ensure that instead of marginalizing the low rated borrowers any further, policies are in place to enhance the overall credit profile of the business sector in the country.**

The choice of the approach will also **impact sovereign borrowers**. Some countries like Hong Kong and China will gain, because the risk weights associated with their sovereign loans will be lower, whereas Turkey and Indonesia will face higher risk weights. According to ING report, the risk weights of OECD and Non-OECD countries would vary depending on the approach applied by the banks. The table below will give some RW of selected countries:

Country	RW under Basel I	RW under SA	FIRB (M=2.5 LGD 45%)	AIRB (M=2.5)
US	0%	0%	3%	0%
Germany	0%	0%	3%	0.3%

¹ ING Bank. *Estimating the Basel Effect*, July 2006.

² Ibid.

Turkey	0%	100.0%	121.7%	135.3%
Country	RW under Basel I	RW under SA	FIRB (M=2.5 LGD 45%)	AIRB (M=2.5)
China	100%	20.0%	20.8%	11.6%
India	100%	100%	80.0%	106.6%
Singapore	100%	0%	3.0%	2.7%
Malaysia	100%	20.0%	15.3%	23.8%
Hong Kong	100%	0%	10.1%	1.8%

Source: ING Bank. *Estimating the Basel Effect*, July 2006: Figures 18 & 20

The Accord clearly discourages certain exposures as banks earn more pejorative capital treatment for equity style risks which were under-capitalized in Basel I. An ING study has observed that a number of European banking groups have unwound their industrial and non-strategic financial equity holdings as a part of preparation for Basel II.

Given the objectives and scope of Basel II and its architecture, the McKinsey study (2004) highlights that there is a **“Business Case for Basel II”**³ as the accord could impact profits and generate gains from reduced capital charges which of course need to be netted from funding costs. For some banks, given the risk sensitive nature of Basel II, the regulatory capital could be substantially reduced by up to 50 percent in segments such as residential mortgages, which would translate in to savings on funding costs. However, such savings would be subject to conditions: such as requirement that regulatory capital should be higher than economic capital⁴ and presence of regulations such as leverage ratios which may prevent banks from reducing their regulatory capital significantly.

The McKinsey’s research identifies four important Basel II-related risk-management efficiencies which could together raise pretax earnings by 3 to 6 percent. These include:

- (i) Reduced charge-offs through better default-prediction and collection processes
- (ii) Improved pricing discipline on loans and risk selection through risk-based pricing to and reduced risk from new business opportunities.
- (iii) Reduced operating expenses by streamlining loans and underwriting processes
- (iv) Reduced operational loss expenses through the use of proper mitigation techniques.

Substantial savings can also be achieved through freeing up of regulatory capital, depending on the risk characteristics of loan portfolio. For example, a bank

³ Kevin S. Buehler, Vijay D’Silva, and Gunnar Pritsch, *“The Business Case for Basel II.”* The McKinsey Quarterly 2004, Number 1.
⁴ The amount of risk capital, assessed on a realistic basis, which a bank requires to cover the risks that it is running or collecting. Typically this is calculated by determining the amount of capital that the firm needs to ensure that its realistic balance sheet stays solvent, over a certain time period, with a pre-specified probability. Firms and financial services regulators should then aim to hold risk capital of an amount equal at least to economic capital.

carrying substantial mortgage loan portfolio would free up regulatory capital when it moves to Basel II. In case of operational risk, for big banks that must adhere to Basel II, moving to a proposed advanced measurement standard might generate savings from 20 to 25 percent of the capital requirements for operational risk if regulatory capital exceeds economic capital.

Realizing these savings, however, would require substantial investment. For large, diversified global banks, the cost of implementation is estimated at \$100 million but can be as high as \$250 million, and the process could well take up to three years. For diversified regional banks, the cost is estimated at \$25 million to \$50 million.⁵ It is important to remember that many banks would incur much of this cost even without Basel II, since they must upgrade their risk-management capabilities to keep pace with changing markets and remain competitive.

Basel II Implementation – Opportunities and Challenges

Globally there is a deep interest in Basel II. World wide there is a strong commitment for it but the pace of implementation would vary from economy to economy and bank to bank. Presently, on one hand there are differences in economy and institutions' risk management processes, state of tech know how, customers portfolio, and on the other hand, the state of development of rating agencies, external auditors, and above all, regulators varies across economies. By virtue of their better infrastructure, resources, and size of operations, the large internationally active banks particularly in Australia, Japan, Singapore, Hong Kong and Korea are expected to adapt to the new regime in relatively shorter span of time. Meanwhile, economies with less sophisticated, small and fragmented financial structure would be implementing Basel II gradually and remain confined to adoption of SA.

Notwithstanding, in next few years, Basel II will drive and shape the bank's business strategies, policies and structure, its risk measurement and capital calculation methods, its internal controls and processes, data requirements, and IT systems. Although the ultimate aim is to achieve the intended benefits by way of enhanced risk management and lower capital requirements, the actual Basel II implementation is turning out to be complex and challenging involving substantial funds outlay for changes in IT, internal controls and processes and human resources. These challenges offer opportunities to the banks as well, to strengthen and transform themselves to better compete both within and outside domestic markets.

Banking industry worldwide today faces several issues and challenges which unless effectively addressed would impact the pace of adoption and implementation of Basel II. These include

- 1) Good and Reliable Data and Information
- 2) Development of sound risk-management system
- 3) Asymmetry in supervision
- 4) Imperfect Markets

⁵ Kevin S. Buehler, Vijay D'Silva, and Gunnar Pritsch, "The Business Case for Basel II." The McKinsey Quarterly 2004, Number 1

- 5) Pro-cyclicality
- 6) Access to finance for disadvantaged
- 7) Operational costs
- 8) Cross-border challenges.
- 9) Challenges for the corporate Sector
- 10) Cost and volume of capital
- 11) Relevance of Basel II assumptions in the Asian context
- 12) The Problem of Adverse Selection

Good and Reliable Data and Information is critical to proper risk assessment. In absence of this, Asia's banks by and large are initially adopting SA for measuring their credit risk. Under SA, the role of the External Credit Assessment Institutions (ECAIs) and external auditors magnifies but coverage and penetration of both is limited. In the absence of reliable ratings for different assets, banking industry will not be able to fully exploit the flexibility of Basel II and most credit risks will tend to end up in the unrated 100% category and as a result there will be little change in capital requirements relative to Basel I. Furthermore, the erratic behavior of loss data due to frequent volatility of economic cycles would deter the proper assessment of risks under IRB and hence the actual capital allocated might not be truly reflective of economic capital. In view of these, national regulators are striving to encourage both further development of national rating and scoring mechanism and encouraging banks planning to adopt IRB to collate reliable and longer trail of data on its basic inputs. The application of more advanced approaches also depends on business continuity planning and sophistication of the IT resources among banks as well as regulators.

Development of Sound Risk-Management Systems. The foremost challenge facing the banks in implementation of Basel II is to develop well-functioning, efficient and integrated risk-management systems. While the treatment of market risk remains the same under Basel II, banks need to strengthen their risk-management systems to properly define and assess credit and operational risks and to recognize the inherent interdependence of such risk. To capture credit risk under IRB, banks will have to generate exposure data and calibrate it properly to differentiate between borrowers' default risks – a complex task in developing countries given the level of industry expertise, lack of historical data and absence of adequate technology. Most challenging is estimation of operational risks since most banks do not have required systems and technology to calculate operational risk or determination of capital standards. By increasing the sophistication of the operational risk assessment and management processes, banks can save on capital charge for operational risk. To strengthen risk-management systems, banks and supervisors invariably require capacity building both in terms of human and technology resources to enable them to properly assess the risk-profile and associated capital requirements. Supervisors and banks will have to achieve synergies in their operations to meet the high demands of Pillar II.

Asymmetry in Supervision. When different market participants are regulated by separate supervisors, it is difficult to maintain comparable quality of policy formulation and vigilance. The asymmetry of regulatory regime can arise

within one country e.g. between banks and securities firms, as well as on cross-border level. The Basel Accord provides an opportunity for developing common standards; yet it requires a much closer cooperation, information sharing and coordination of policies. In many developing countries, only the banks are coming under the ambit of Basel II and not other financial services providers, thus creating some scope of regulatory arbitrage.⁶ The presence of a large number of internationally active banks in the region requires close cooperation among supervisors across the globe to resolve the home-host issues. It would become all the more important for the jurisdictions where the approaches for Basel II would differ.

Imperfect Markets. The functioning of risk assessments system of banks is affected by distortions in markets namely dominance of large players, high asymmetry of information, and lack of market depth. The price manipulation by significant market players can distort the true market value of securities' portfolio. To make any meaningful assessment of market risk and encourage market discipline, the imperfections have to be removed from the financial markets. The regulator should have the capability to assess the price risk, and identify situations in which market values of portfolios have been over/ under stated by the regulated institution through price manipulation.

Pro-cyclicality. One of the initial criticisms on the Basel II Accord was related to pro-cyclicality. The new accord could generate more pronounced business cycles in an economy particularly in recessionary period when the borrower's credit risk increases, as measured by IRB, and the banks will curtail lending, while in boom time they will expand lending. However, under the new accord the deterioration of a portfolio should begin to be reflected in the bank's capital adequacy ratio at a much earlier stage, and no further deterioration should occur in the capital adequacy ratio at the moment it is recognized as an accounting loss.⁷ Pro-cyclicality can be addressed by several ways. For example supervisors have discretionary powers under Pillar 2 to demand additional capital during a business cycle expansion or banks can adjust the value of probability of default (PD) in IRB system based on the historical trend in business cycle. However, the adjusting of the IRB parameters has to be consistent and transparent.

Access to Finance for the Disadvantaged. Keeping in view that the new accord would require banks to hold higher capital allocation for assuming higher credit risk, there is a concern that small businesses and poor segments of the society would receive no or very costly credit. Even under the old framework, the problem of access to finance for low income segments is quite significant for developing countries. Given the wider prevalence of poverty, particularly in the South Asian region, the governments' efforts to combat poverty might receive serious blow and hence cannot be addressed in isolation. However policies should be made to bring more segments in the ambit of financial services, without seriously compromising the banks' risk profile.

⁶ Challenges and implications of Basel II for Asia by Y. V. Reddy 3 May 2006

⁷ Basel II – towards a new common language; by Ryozyo Himino, BIS Quarterly Review September 2004

Operational Costs. The installation of risk assessment systems would obviously carry massive initial costs. Some of these costs would be explicit e.g. cost of IT systems, hiring of new staff, trainings etc. There will be, however, several implicit costs e.g. adjustments in historical processes, and frequent adjustments of the new systems in the beginning of the learning curve. Moreover, compliance failures can result in incurrence of legal costs. In order to contain the costs of implementations for the banking sector, the banks should aim to⁸ (i) devise simpler work flows to keep processes easy to understand, (ii) have frequent proactive interaction with the regulator to ensure that compliance systems are developed correctly the first time, (iii) ensure that legal department works closely with compliance and risk management, and (iv) create swift corrective procedures for any compliance failures.

Cross-Border Challenges. The challenges discussed above become more pronounced in a cross-border environment. One of the main benefits of Basel II is to provide a common language to banks and regulators to communicate about risks embedded in an entity or transaction globally. However the difference in readiness across countries would make this quite difficult to achieve. The differences in preparedness of banks would hinder information sharing across sectors and across borders. Moreover, this may also create restriction in credit flow from banks of developed countries into the emerging economies, because these banks may be discouraged due to high capital allocation for such investment. The most basic step is to ensure that whatever is the stage of development vis-à-vis the Basel II implementation, at least adequate information disclosure rules (Pillar III) are in place. This would help in building the confidence level of foreign donors and banks.

Challenges for the Corporate Sector. Since the risk-sensitivity is at the core of Basel II, the flow and cost of credit to firms is going to vary depending upon their respective risk-profile. Those with high risk and low credit worthiness are going to be loser whereas the other with low risk and high credit worthiness shall derive benefit, as banks would have to allocate their capital accordingly. This impact can be deduced from the emerging, peculiar clientele structures for the banks adopting SA and those going for the IRB. The IRB bank would find little attraction in lending to low rated borrowers because they would have to incur a capital charge which would be higher than 8%, while SA banks might be indifferent regarding their lending to such borrowers because they anyhow would have to incur the capital charge of 8%. By the same token, IRB banks will be forced to attract high rated borrowers through more favorable pricing of products whereas the SA bank would not be able to compete with the IRB bank on price to capture those high rated customers. Consequently, high rated customers would tend to converge into IRB banks and the low rated customers with the SA banks. This not only holds serious connotation for small, local banks of the developing economies because of the higher risk of default and possible deterioration in their

⁸ Basel II Banking Revolution for Asian Banks, by Li-May Chew

asset quality but also for the non-financial firms on low rated spectrum as they might witness serious constraints in their access to credit at fair terms.

Cost and Volume of Capital. Some studies have pointed out that Basel II would impact cross-border capital flows to developing countries, particularly reducing access and raising the cost of commercial loans from developed markets. This is largely because developing countries carry low sovereign ratings which attract higher capital charge. Yet another possible implication is that international banks might find reduced incentive to expand their operations into these countries, thus further exacerbating their problem of low capital. However, the situation might favor those countries of the region, which are enjoying superior sovereign ratings by virtue of their economic and financial strength. Under the SA, countries like China, Singapore, Taiwan, Malaysia, etc. are going to benefit, as they will attract less than an 8% charge⁹.

Relevance of Basel II assumptions in the Asian context. The risk weights/ implied correlations for different exposures under standardized or IRB approaches are based upon certain assumptions which may not be applicable in the Asian context. For example, 35% risk weight for mortgage lending is based upon PD estimates and LGD of rather developed European/US markets and may not be adequate as the losses in secured real estate lending in countries like Japan, Korea, Taiwan, Thailand and Indonesia have at times exceeded 35%.¹⁰ Therefore it highlights the need for the supervisors in Asia to assess whether these assumptions are equally applicable to their jurisdictions as well or not.

The Problem of Adverse Selection. Under IRB, high quality corporate lending attracts a lower capital charge, while low quality borrowers require a higher charge than the 8% charge under Basel I. Under IRB therefore banks would prefer high quality over low quality borrowers, while under SA banks will have relatively greater incentive to lend to lower quality borrowers, particularly those that are not externally rated, given that these will continue to attract an 8% capital charge irrespective of the underlying risk. The possibility that high risk borrowers will migrate to banks following SA is a concern for Asia given the risk it poses for less sophisticated banks.

Conclusion

Basel II is recognized to have “revolutionized” the risk assessment, management and mitigation systems and offered financial industry innovative and sophisticated approaches to weighing these risks. Concurrently, Basel II has catalyzed new supervisory approaches which have encouraged regulators to start thinking of aligning their national regulations along the Basel II Accord. Most countries have now defined a road map and timetable for adoption of Basel II by industry and to position themselves to conduct the required due diligence for supervision of more advanced approaches to regulatory framework. However, the progress on Basel II implementation varies among the regions reflecting mainly

⁹ ING Bank. *Estimating the Basel Effect*, July 2006.

¹⁰ FitchRatings Special Report “Asian Banks and Basel II”, January 2005

differences in their financial and technological readiness. The speed of adoption could be explained by a succinct analogy that one can travel a certain distance by taking the high-speed autobahn while in Europe, however, the same distance would require a lot more time in developing countries context given the quality of the roads.

The Mutually Reinforcing Pillars

The Basel II framework has substantive breadth and depth. It prescribes different approaches for different sized banks and/or domestic versus internationally active banks and recognizes properly different buckets of assets and assigns risk weights while incorporating the quality of issues/assets through rating mechanism. To allow this flexibility Basel II is elaborate and is bedecked with three mutually reinforcing pillars:

- Minimum capital requirement (MCR --Pillar I)
- Supervisory review process (Pillar II)
- Market Discipline (Pillar III)

All three pillars complement each other to form an overarching risk-management structure for the promotion of financial stability.

The **Pillar 1** provides for minimum capital requirement for 3 main risks i.e. credit risk, operational risk and market risk:

- For credit risks, the banks have a choice to adopt a Simplified Standardized Approach (SSA) with a uniform risk weight of 100 percent for corporate loans or based on Standardized Approach (SA) which allows use of ratings of the external credit assessment institutions (ECAIs). Alternatively, banks can opt for Internal Rating Based (IRB) which involves development of internal rating systems to measure capital against credit risk. Banks can adopt Foundation IRB (FIRB) using their own data to estimate probability of default (PD), Loss Given Default (LGD) and Exposure at Default (EAD). FIRB banks will depend on fixed weights approved by their supervisors whereas under Advanced IRB they may use their own estimates.
- Operational risks captures risks associated with internal processes, systems, and people. Capital for this risk is prescribed by (i) Basic Indicator Approach (BIA), (ii) Standardized Approach and (iii) Advanced Measurement Approach.
- Market risk relates to losses due to changes in prices, interest rate and equity prices. If opting for standardized approach capital is calculated against market risks by using the parameters as specified by the regulator or under internal approach banks develop their own systems and models to capture risk under this category.

The Pillar I of MCR is interconnected and reinforced with the two other pillars.

Pillar II or the Supervisory Review Process. Under this, financial institutions should have their own internal capital assessment processes to capture risks which remained uncovered under Pillar 1 and thus set aside capital in line with the bank's risk profile and control environment. The supervisory review process validates the bank's internal assessments by ensuring that the whole array of risks has been taken care of. Three risks in particular ought to be considered under Pillar 2: risks that are not fully captured by the Pillar 1 (e.g. credit concentration risk); those factors not taken into account by the Pillar 1 (e.g. interest rate risk in the banking book, business and strategic risk); and factors external to the bank (e.g. business cycle effects). Besides using qualitative assessments, both banks and regulators, could employ forward-looking stress tests to identify possible events or changes in the market conditions that could adversely impact the capital adequacy.

Pillar III seeks to enhance disclosure and transparency by strengthening banks' financial reporting system and by encouraging market discipline and allowing the key stakeholders to assess key pieces of information on the scope of application, capital risk exposures, risk assessment processes, and capital adequacy of the institution. Pillar III complements and reinforces the first two pillars and infuses market pressures to bring in better risk management and adequate levels of capital in the banks and keep key stakeholders fully informed about the risk profile of banks and enables them to take prudent decisions while transacting business with them.