



ROUND TABLE

Basel III implementation: Issues and challenges for Indian banks

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KEYWORDS

Basel III;
Capital regulation;
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Abstract The Basel III framework, whose main thrust has been enhancing the banking sector's safety and stability, emphasises the need to improve the quality and quantity of capital components, leverage ratio, liquidity standards, and enhanced disclosures. This article first lays the context of Basel III and then incorporates the views of senior executives of Indian banks and risk management experts on addressing the challenges of implementing the Basel III framework, especially in areas such as augmentation of capital resources, growth versus financial stability, challenges for enhanced profitability, deposit pricing, cost of credit, maintenance of liquidity standards, and strengthening of risk architecture.

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Context note

In a banking entity assets are created as a process of intermediation by accepting deposits; the basic function of intermediation itself is a source of credit and liquidity risks for any banking institution. Further, banks are exposed to various market and non-market risks in performing their functions. These risks expose banks to events, both expected and unexpected, with the potential to cause losses, putting depositors' money at risk. Expected losses may

be mitigated by a combination of product pricing and accounting loss provisions, while capital funds are expected to meet unexpected losses. Thus the primary role of capital in a banking institution is to meet the unexpected losses arising out of portfolio choice of banks and to protect the depositor's money.

Basel capital accords

Banks and the regulators all over the world have been concerned about these risks, and the formal framework for banks' capital structure was evolved in 1988 with the introduction of the "International Convergence of Capital Measurement and Capital Standards", popularly known as Basel I, issued by the Basel Committee on Banking Supervision (BCBS). Following Basel I banks were required to maintain a minimum capital adequacy of 8% against risk weighted assets (RWA). Here Basel suggested a portfolio approach to credit risk by assigning appropriate risk weights

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against each asset (for example, housing loans carry 50% risk weight and corporate loans carry 100% risk weight). The capital components include long term debt funds also by categorising qualitative equity capital as Tier I and others as Tier II. Although the Basel Accord was signed only by the G-10 countries plus two more nations, more than 100 countries across the globe have made these norms mandatory in their domestic banking systems. In India, the Reserve Bank of India (RBI) implemented Basel I norms from 1992 onwards. The post 1990 scenario world over saw banks increasing their trading activity by investing in securities which exposed banks to price risks, and responding to this, in 1996, the Basel Committee suggested that banks maintain capital funds against market risk by following either the standardised measurement approach (SMA) or internal measurement approach (IMA) to meet the unforeseen losses arising out of market risks.

Basel I was criticised for its rigidity of “one-size fits” approach and absence of risk sensitivity in estimating capital requirements. After several discussions and revising multiple drafts, in 2004 the BCBS came out with a comprehensive framework of capital regulation popularly known as Basel II. Basel II was built up on three mutually reinforcing pillars – minimum capital requirements, supervisory review process, and market discipline. Under Basel II, banks were required to maintain the minimum capital requirement of 8% against the risk weighted assets, while RWA was computed by considering the three major generic risks – credit, market, and operational risks. To estimate the capital requirements for credit risk and operational risk, Basel-II proposed a menu of approaches – standardised, foundation internal ratings, and advanced internal ratings approach. However, for market risk Basel II continued with the 1996 framework which suggested both standardised and internal measurement models.

The European Parliament approved all the three Basel II approaches for all European Union (EU) banks in 2005 and formally adopted the agreement in 2006. The EU implemented the standardised and foundation approaches as early as 2007 and the advanced approaches by 2008. In the US, the rules apply only to the 19 largest, internationally active “core” US Banks. (Core banks are those with consolidated total assets of \$ 250 billion or more or with consolidated total on-balance sheet foreign exposure of \$ 10 billion or more.) However, some banks voluntarily adopted the rules (“opt in” banks). In India, from 2007 to 08 onwards, banks have followed estimation of capital requirements by following the standardised approach for all the three risks – credit, market and operational risks.

Although Basel II was a very comprehensive capital regulation framework architected on sophisticated risk quantification models, it failed to address certain issues which emerged during the financial crisis of 2007–08 (Fratanni and Marchionne (2009), Acharya et al. (2011), Reddy (2009)). First, Basel II, a risk sensitive framework, proved to be pro-cyclical; in good times, when banks were doing well, and the market was willing to invest capital in them, Basel II did not impose additional capital requirement on banks. On the other hand, in stressed times, when banks required additional capital and markets were wary of supplying that capital, Basel II required banks to bring in more of it. During the crisis, it was the failure to bring in additional capital that forced major international banks into

a vicious cycle of deleveraging, thereby hurtling global financial markets into seizure and economies around the world into recession. Second, by following value at risk (VaR) models banks maintained capital requirements against trading book exposures assuming that these could be liquidated, and substantial banking book assets were parked in trading book, which helped banks to optimise the capital requirements. These trading book exposures include the securitised bonds, derivative products, and other toxic assets. The third issue was the absence of any explicit regulation governing leverage. Basel II assumed that its risk based capital requirement would implicitly mitigate the risk of excessive leverage. Unfortunately, excessive leverage of banks was one of the prime causes of the crisis. The fourth issue was that Basel II did not consider liquidity risk as part of capital regulation. During the financial crisis unaddressed liquidity risk cascaded into solvency risk; the data shows that the Federal Reserve, the European Central Bank (ECB), the Bank of England, the Bank of Japan, and the Swiss National Bank have together injected USD 2.74 trillion to meet liquidity requirements.¹ Finally, Basel II focussed more on individual financial institutions and ignored the systemic risk arising from the interconnectedness across institutions and markets, which led the crisis to spread to several financial markets (Acharya and Richardson 2009). Since the beginning of the financial turbulence in 2007, the total reported write downs and losses of banks globally have exceeded 888 billion dollars. Some estimates of the overall expected losses by banks and other financial institutions are in the range of 2.2 trillion dollars.²

In response to the 2007–09 global financial crisis BCBS issued Basel II.5, which was designed to estimate capital requirements for credit risk in the trading book of a bank. Basel II.5 was intended to prevent inappropriate placement of securities in the book that would provide the most favourable accounting treatment of securities at a particular point in time. In that order, the Basel Committee issued a series of documents to address specifically counterparty risk in derivative transactions, strengthening of liquidity standards, and market risk framework. Consolidating all these, the BCBS released the Basel III framework entitled “Basel III: A Global Regulatory Framework for more Resilient Banks and Banking systems” in December 2010 (revised in June 2011).

According to the BCBS, the Basel III proposals have two main objectives:

- To strengthen global capital and liquidity regulations with the goal of promoting a more resilient banking sector.
- To improve the banking sector’s ability to absorb shocks arising from financial and economic stress.

Enhancements of Basel III over Basel II

The enhancements of Basel III over Basel II come primarily in four areas: (i) augmentation in the level and quality of

¹ IMF, Global Financial Stability Report Market updated, 28 Jan 2009, p-2.

² IMF, Global Financial Stability Report Market updated, 28 Jan 2009, p-2.

Table 1 Minimum regulatory capital prescriptions (as % risk weighted assets).

		Basel III (as on January 2019)	Current (Basel II)	Basel III (as on March 31, 2018)
A = (B + D)	Minimum total capital	8.00	9.00	9.00
B	Minimum tier 1 capital	6.00	6.00	7.00
C	of which:			
	Minimum common equity tier 1 capital	4.50	3.64	5.5
D	Maximum tier 2 capital (within total capital)	2.00	3.00	2.00
E	Capital conservation buffer (CCB)	2.50		2.5
F = C + E	Minimum common equity tier 1 capital + CCB	7.00	3.60	8.00
G = A + E	Minimum total capital + CCB	10.5		11.5
H	Leverage ratio (ratio to total assets)	3.00		4.55

(Source: Address by Dr. Duvvuri Subbarao, September 4, 2012).

capital; (ii) introduction of liquidity standards; (iii) modifications in provisioning norms; and (iv) introduction of leverage ratio. These are elaborated as follows

Increased quantity and quality of capital

Basel III contains various measures aimed at improving the quantity and quality of capital, with the ultimate aim of improving the loss-absorption capacity in both going concerns and liquidation scenarios. Retaining the minimum capital adequacy ratio of 8%, the Tier I capital ratio increased to 6% with the equity component stipulated at 4.5%³ (Table 1). The new concepts introduced by Basel III are of capital conversion buffer and countercyclical capital buffer (CCB). The capital conversion buffer ensures that banks are able to absorb losses without breaching the minimum capital requirement, and are able to carry on business even in a downturn without deleveraging. This is not part of the regulatory minimum. So while the 8% minimum capital requirement remains unchanged under Basel III, there is an added 2.5% as capital cushion buffer. The implications of having a buffer are low dividend payout and low bonus to employees. So if the banks go for this buffer, the fundamental question before them is how they are going to reward their shareholders and incentivise their employees as the profits are likely to decrease. Banks are already constrained in payment of dividends because there is a statutory minimum ratio where the profits have to be transferred. In such a case, how will banks attract more capital? There is a trade-off for banks between being prudent and increasing profit.

The countercyclical capital buffer is a pre-emptive measure that requires banks to build up capital gradually as imbalances in the credit market develop. It may be in the range of 0–2.5% of risk weighted assets which could be imposed on banks during periods of excess credit growth. There is also a provision for a higher capital surcharge on systemically important banks.

Basel III strengthens the counterparty credit risk framework in market risk instruments. This includes the use of stressed input parameters to determine the capital requirement for counterparty credit default risk. A new

capital requirement known as credit valuation adjustment (CVA) risk capital charge for over-the-counter (OTC) derivatives has been introduced to protect banks against the risk of decline in the credit quality of the counterparty.

Increased short term liquidity coverage

The Basel Committee has further strengthened the liquidity framework by developing two minimum standards for quantifying funding liquidity; Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSRF). The LCR standard aims at a bank having an adequate stock of unencumbered high quality liquid assets (HQLA) which consist of cash or assets that can be converted into cash at little or no loss of value in private markets to meet its liquidity requirements in a 30 calendar day liquidity stress scenario. The two components of LCR are stock of HQLA and the total net cash flows over the next 30 calendar days. The NSRF is designed to encourage and incentivise banks to use stable sources to fund their activities. It helps to reduce dependence on short term wholesale funding during times of buoyant market liquidity and encourages better assessment of liquidity risk across all on- and off-balance sheet items. Net Stable Funding Ratio requires a minimum amount of stable sources of funding at a bank relative to the liquidity profiles of the assets, as well as the potential for contingent liquidity needs arising from off-balance sheet commitments, over a one-year horizon.

The implications here would pertain to the type of current short term markets available for banks to provide liquidity, the type of long term markets needed, the cost of deposit, and the impact on the profitability of banks. One issue with reference to liquidity is how the regulator would consider the statutory liquidity ratio (SLR) securities. Banks are already investing around 25% of their deposits in the SLR securities which is a substantial amount. A question has also been raised about the relevance of cash reserve ratio (CRR). All these have implementation implications for deposit pricing, cost of funds, and profitability.

Reduced leverage through introduction of backstop leverage ratio

The newly introduced leverage ratio acts as a non risk sensitive backstop measure to reduce the risk of a buildup of excessive leverage in the institution and in the financial

³ Basel II did not prescribe any minimum equity capital component but it was generally accepted as 2%.

system as a whole. The leverage ratio requirement would hence set an all-encompassing floor to minimum capital requirements which would limit the potential erosive effects of gaming and model risk on capital against true risks. A 3% minimum Tier I leverage is recommended by Basel III. In India, banks are required to meet this norm from January 1, 2018.

Strengthening of provisioning norms

Another issue raised by the Basel III reforms is of provisioning norms; currently there is a standardised approach to provisioning in the banking system. It is a typical accounting approach, wherein if a loss is incurred, banks have to make a provision to cover it. But Basel III is talking about a move from “incurred loss approach” to “expected loss approach”. For an expected loss approach what should be the measure? Spain (Saurina, 2009) introduced Dynamic Provisioning which involves computing some portion of the fixed element, and some portion of the dynamic moving element. The Turner Report (FSA, 2009) also emphasised the need for Dynamic Provisioning. The information required is credit cost data, credit migration, and probability of default. The question is, what method should be used? The RBI has already released an approach paper⁴ on this and is working on the introduction of a suitable framework.

Enhanced disclosures

The second pillar of Basel II is market discipline, which involves more of disclosures. Disclosures made by banks are essential for market participants to make more informed decisions. Basel III further strengthens the disclosures, where banks are required to disclose on composition of the regulatory capital and any adjustments to the regulatory capital.

Basel III issues for Indian banks

Additional capital

As banks go on increasing the risk weighted asset portfolio to meet the growing economy’s credit requirements, they would need additional capital funds under Basel III. Different estimates of additional capital infusion have been announced by various agencies. The international credit ratings agency, Fitch, estimates this figure to be at around USD 50 billion, while ICRA projects a figure of around USD 80 billion. Macquarie Capital Securities predicts that there will be a USD 35 billion dilution in the existing capital of public sector undertaking (PSU) banks subsequent to adoption of the stringent Basel III capital accord.⁵ However, the RBI Governor had recently stated that PSU banks presently have a capital adequacy ratio of 13.4%, wherein Tier 1 capital stood at 9.3%⁶ (Table 2). This is a statement on the existing capital dilution. Moreover, additional capital will be required to address the enhanced counter party default, especially in OTC derivatives. The RBI estimates project an additional capital requirement of Rs 5 trillion of which non-

equity capital will be of the order of Rs 3.25 trillion while equity capital will be of the order of Rs 1.75 trillion⁷ (see Table 3 for details). The two important assumptions on which the estimates are made are: risk weighted assets of individual banks will increase by 20% per annum and banks can fund 1% capital requirements through retained profits (RBI 2012). The important questions to be addressed here are: Can individual banks access the capital market to raise this capital? How do current ownership structure and valuations impact the bank’s capital raising proposals? Should the government retain majority ownership? How should the government capitalise the public sector banks? What are the options before the government?

Growth barrier

Growth and financial stability seem to be two conflicting goals for an economy. The Indian economy is transforming structurally and moving towards rapid growth although some seasonal down trends are seen. The main goal of the 12th Plan is “faster, sustainable and more inclusive growth”. The Planning Commission is aiming at a total outlay of Rs. 51.46 lakh crore in the infrastructure sector during the 12th Plan (2012–17). Infrastructure sector investment as percentage of the Gross Domestic Product (GDP) is expected to rise steadily to 10.40% in the terminal year (2016–17) of the 12th Plan. The average investment in infrastructure sector for the 12th Plan as a whole is likely to be about 9.14% of the GDP. The outstanding credit gap for the micro and small and medium enterprises (MSME) sector is estimated at 62%, which is estimated to reduce to 43% in March 2017 with the assumption of minimum 20% year on year (Y-o-Y) credit growth to MSME sector and 10% Y-o-Y credit growth to medium enterprises by scheduled commercial banks (SCBs).⁸ The economists’ projections are that the Indian economy will see higher growth in the manufacturing sector which enhances demand for credit. The financial inclusion project aims to bring several millions of the population under the ambit of the organised financial system which will also enhance their credit requirements.

The preliminary research shows that the largest banks in the world would raise their lending rates on an average by 16 basis points (bps) in order to increase their equity to asset ratio by 1.3 percentage points needed to achieve the new Basel regulation of 7% equity to new risk weighted asset ratio. Increase in lending rate is estimated to cause loan growth to decline by 1.3% in the long run (Cosimano & Haura 2011). When the leverage requirement interacts with the risk based internal ratings-based (IRB) capital requirements it might lead to less lending to low risk customers and to increased lending to high risk customers. Such allocation effects may be counterproductive to the financial stability effects of the leverage ratio requirement (Kiema & Jokivouille, 2010).

In a structurally transforming economy like India with rapid upward mobility, credit demand will expand faster than GDP for several reasons. First, India will shift increasingly from services to manufacture whose credit intensity is higher per unit of GDP. Second, increased

⁴ Discussion Paper on Introduction of Dynamic Loan Loss Provisioning Framework for Banks in India, 2012.

⁵ <http://www.dsij.in/research/blog/month/5/year/2012.aspx>

⁶ Subba Rao, September 4, 2012

⁷ Subba Rao, November 2012

⁸ Planning Commission, An Approach to the Twelfth Five Year Plan (2012-17), Faster, Sustainable and More Inclusive Growth.

Table 2 Capital to risk weighted assets ratio (in %) under Basel I and II – bank group-wise (as at end of March).

Bank group	Basel I			Basel II		
	2010	2011	2012	2010	2011	2012
Public sector banks	12.1	11.78	11.88	13.3	13.08	13.23
Nationalised banks	12.1	12.15	11.84	13.2	13.47	13.03
State Bank of India group	12.1	11.01	11.97	13.5	12.25	13.7
Private sector banks	16.7	15.15	14.47	17.4	16.46	16.21
Old private sector banks	13.8	13.29	12.47	14.9	14.55	14.12
New private sector banks	17.3	15.55	14.9	18.0	16.87	16.66
Foreign banks	18.1	17.71	17.31	17.3	16.97	16.74
Scheduled commercial banks	13.6	13.02	12.94	14.5	14.19	14.24

Note: includes IDBI Bank Ltd.

Source: Based on off-site returns submitted by banks.

Table 3 Additional common equity requirements of Indian banks (Rs in billion).

	Public sector banks	Private sector banks	Total
A Additional equity capital requirements under Basel III	1400–1500	200–250	1600–1750
B Additional equity capital requirements under Basel II	650–700	20–25	670–725
C Net equity capital requirements under Basel III (A–B)	750–800	180–225	930–1025
D Additional equity capital requirements under Basel III for public sector banks (A)			
Government share (if present shareholding pattern is maintained)	880–910	–	–
Government share (if shareholding is brought down to 51%)	660–690	–	–
Market share (if the Government's shareholding pattern is maintained at present level)	520–590	–	–

Source: Address by Dr. Duvvuri Subbarao (September 4, 2012).

investment in infrastructure as projected by the Planning Commission will place enormous demands on credit. Finally, financial inclusion, which both the Government and the RBI are driving, will bring millions of low income households into the formal financial system with almost all of them needing credit. What all this means is that banks need to maintain higher capital requirements as per Basel III at a time when credit demand is going to expand rapidly. The concern is that this will raise the cost of credit and hence militate against growth.⁹ The question here is: With the increased demand for credit, will the Basel III capital framework increase cost of credit? What are the options before Indian banks?

Profitability of banks

Return on equity (ROE) is defined as the product of return on assets (ROA) and the leverage multiplier. As the upper limit for the leverage ratio by Basel III has been set at 3%, the value of the leverage multiplier will come down, resulting in a reduction in the ROE. Table 4 shows that the higher ROE for the SBI group and nationalised banks was associated with a higher leverage ratio, while for new private sector banks, the higher ROE was attributable to higher profitability of assets and lower leverage (RBI 2012).

On an average, Indian banks' ROE is around 15% for the last three years. The enhanced capital requirements under Basel III regime are likely to affect the ROE of the banks and the shareholders' expectations on the minimum required rate of return.

The questions that arise here are as follows: Do shareholders prefer less stable and more risky banks with higher ROE or more stable and less risky banks? What is the cost of meeting higher capital requirements for banks? Do banks pass on these costs to depositors and borrowers? In order to meet the mandate of higher quantum of liquid funds, under liquidity standards of Basel III, do banks have to go for the passive option of lending to the Government by increasing investment portfolio, by crowding out credit to the private sector? To meet the challenges of declined profitability can the banks alter their incentive structure?

Implementing the countercyclical capital buffer

A critical component of the Basel III package is implementation of countercyclical capital buffer which mandates that banks build up a higher level of capital in good times (that could be run down in times of economic contraction), consistent with safety and soundness considerations. Here the foremost challenge to the RBI is identifying the inflexion point in an economic cycle which should trigger the release of the buffers. The identification of the inflexion point needs to be based on objective and observable criteria; it also requires long series data on

⁹ Speech delivered by Dr. Duvvuri Subbarao, Governor, Reserve Bank of India, at the First CAFRAL-BIS international conference on Financial Sector Regulation for Growth, Equity and Stability in the Post Crisis World, Mumbai, November 15, 2011.

Table 4 Profitability and leverage of Indian banks : 2011–12.

Bank group	Return on equity	Profitability of assets	Leverage	Capital to assets ratio
SBI group	16.00	0.91	17.58	0.07
Nationalised banks	15.05	0.87	17.37	0.40
Old private sector banks	15.18	1.15	13.23	0.35
New private sector banks	15.27	1.57	9.72	0.27
Foreign banks	10.79	1.75	6.15	6.95

Source: report on Trend Progress of Banking, 2011–12, RBI.

economic cycles. In an emerging market like India, what macroeconomic data is needed? What are the options before the Ministry of Finance and the RBI?

Risk management

In recent years many banks have strengthened their risk management systems which are adequate to meet the standardised approaches of Basel II. A few banks are making efforts in the direction of moving towards implementation of advanced approaches. The larger banks need to migrate to the advanced approaches, especially as they expand their overseas presence. The adoption of advanced approaches to risk management will enable banks to manage their capital more efficiently and improve their profitability. This graduation to advanced approaches requires three things. First and most important, a change in perception from looking upon the capital framework as a compliance function to seeing it as a necessary prerequisite for keeping the bank sound, stable, and therefore profitable. Second, the graduation to advanced approaches requires deeper and broader based capacity in risk management; and finally, it requires adequate and good quality data.¹⁰ Other banks also need to strengthen their risk management and control system so as to allocate risk capital efficiently and improve profitability and shareholder's return. The important issues here are: On what aspects of risk management should the banks focus? How do they improve the risk architecture? How can banks strengthen risk management capacities so as to generate adequate and qualitative data?

Systemic risk

The financial crisis highlighted the importance of interconnectedness of financial institutions and the significance of systemic risk. With the dichotomous presence of specialised financial institutions like HDFC and several other commercial banks, understanding the concept of systemic risk is critical in the Indian context. At the macro level, how does one measure systemic risk in the Indian context? In some countries, buildup of credit to deposit ratio is considered for measuring systematic risk, but is it relevant in the Indian context? The consolidation phase in Indian banking is in progress. The State Bank of India (SBI) is acquiring its associate banks and a few private banks have been merged with other public and private sector banks. The presence of large size banks encourages risky behaviour in banks. Basel III seeks to mitigate this externality by identifying both Domestic Systemically

Important Banks (D-SIBs) and Global Systemically Important Banks (G-SIBs) and mandating them to maintain a higher level of capital depending on their level of systemic importance. Are there any Indian banks that can be classified as D-SIB's? What should be the criteria for such classification?

Need for a discussion

In the above context the current round table discussion assumes significance and raises the following issues.

- Can individual banks access the capital market to raise capital?
- How do current ownership structure and valuations impact the bank's capital raising proposals? Should the Government retain majority ownership?
- With the increased demand for credit, will the Basel III capital framework increase cost of credit? What are the options before banks?
- What is the cost of meeting higher capital requirements for banks?
- Do banks pass on these costs to depositors and borrowers?
- In order to meet the mandate of higher quantum of liquid funds and liquidity standards of Basel III, do banks have to go for the passive option of lending to government by increasing investment portfolio, by crowding out credit to the private sector?
- On what aspects of risk management should the banks focus?
- How to strengthen risk management capacities so as to generate adequate and qualitative data?
- What macroeconomic data is needed? What are the options before the Ministry of Finance and the RBI?
- Are there any Indian banks that can be classified as D-SIB's? What should be the criteria for such classification?

I take pleasure in inviting the panel members representing various stakeholders of the Indian banking system to present their views, following which the floor is open for discussion.

Basel III implementation: Issues and challenges for Indian banks: Discussion

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¹⁰ (Inaugural Address by Dr. Duvvuri Subbarao, Governor, Reserve Bank of India at the Annual FICCI - IBA Banking Conference at Mumbai on September 04, 2012)

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M. Jayadev

Welcome to the four panelists present here and to the fifth member who is joining us from the US. Mr. Subhasish Roy is Deputy General Manager, Risk Department, IDBI Bank, a public sector bank. Mr. Gobind Jain is a Senior Vice President in Kotak Mahindra Bank. He is working with systems, balance sheet and associated areas. Mr. Mahesh Kumar Jain is General Manager, Syndicate Bank and is currently in treasury operations at Mumbai. All three have been working in the area of risk management for a long time. Mr. Gagan Deep Singh is Assistant Vice President – Treasury Analytics at Genpact India. He is working with market risk models, and he is a risk management modelling expert. The fifth panellist Mr. Rajendra Prasad is joining from us the US. He is Vice President, Citibank at Tampa, Florida. He has worked with several banks in consultancy positions especially in the area of market risk and credit risk.

Let me invite Mr M. K. Jain from Syndicate Bank to speak first.

M. K. Jain

Basel III is a regulatory prescription necessitated by certain flaws or lacunae observed in Basel II. Basel III has certain implications for banks in India and across the globe.

I will first touch upon *capital requirement*. There has been much discussion across the globe about Basel III, and how the capital requirements of the G 20 countries and India are different. There are a few differentiators between Basel II and Basel III. In Basel II there is no minimum requirement of common equity capital (CET) but it is presumed as 50% of Tier I capital requirement and hence estimated as 2% of total minimum capital requirement. Whereas in India, it is estimated as 3.6% because of total Tier I capital requirement of 6% and restriction of hybrid instruments to the extent of 40%. The increase of CET from 2 to 5% for banks in advanced countries will have large implications in raising common equity capital to the magnitude of billions or trillions of dollars.

But in India there exist certain benefits which are not available in other jurisdictions. Deductions from capital have been harmonised and generally applied at the level of common equity. These deductions will not have much impact on Indian banks. At present, deferred tax asset (DTA), goodwill etc. are already deducted from Tier I capital. We do not have much of trading and over-the-counter (OTC) derivatives. Similarly, valuation of liabilities does not exist in India. The impact of reciprocal cross holdings will also be insignificant considering the prudential limits fixed by RBI.

As far as common equity is concerned, it is not unlike the other players in the world. In India, the market for hybrid instruments has not been active. The question arises as to whether there will be a market for hybrid instruments in India with non-viability clause. As a result, most Indian banks already have no option left but the option of raising equity. At present, Indian banks are operating at more than 10% of the Tier I capital adequacy ratio and 50% of the banks are operating at more than 8% of Tier I capital. But going forward, banks will need to raise equity capital to meet Basel III requirement and to support credit demand.

The first question posed to me was *how banks will be able to raise the capital and whether the market is conducive to raising that amount of capital*. I can share my views for public sector banks which hold around 70–75% of the market share. In the past five years, Indian banks have raised close to Rs 52,000 crores (Rs 520,000 million) as capital. Broad estimates suggest that banks may need capital close to rupees 500 thousand crores (Rs 5000 billion) in next five years. Of that, around 1.5 hundred thousand crores (Rs 1500 billion) is expected as core equity capital, the major share of which comes for public sector banks. Out of that, the requirement under Basel III alone comes to around 80 thousand crores (Rs 800 billion). Nevertheless the raising of that capital in the next five years is not a very difficult task but will be challenging.

However, how is that capital to be raised? It is connected to the next question, that of market capitalisation. In the banking scenario in India, individual banks have enough potential to access capital markets. The pricing may be different based on the fundamental strength of the bank and market prices of stocks. In India, market cap as percentage of assets of the public sector banks is around 5.5, whereas for private banks, it is around 25.5 and among the public sector banks it ranges from 2.6 (Central Bank) to 8.7 (State Bank of India). At the current market capitalisation, even if the banks dilute majority of government holdings, it will not be sufficient to maintain CRAR (capital to risk weighted assets ratio) at desirable level.

Even if the State Bank of India (SBI), with highest market capitalisation among PSBs, were to dilute its equity capital by 20%, the amount raised by it would be equivalent to less than 2% of the assets. So the question of infusion of equity by government versus raising from the market will arise. In that situation, what are the options available? Should banks raise capital from the market at low prices, which still may not be sufficient to meet capital needs, or should banks approach promoters? The option available with the government is to fund the banks for capital requirement continuously. Though it is difficult for the Government of India (GOI) to infuse capital continuously in view of fiscal concerns, yet it makes business sense for the government to infuse capital to the public sector banks for two reasons. Presently all PSB stocks are under-valued, and large value can be unlocked by GOI in future when market capitalisation improves, given the predictions of India's bright future. No economy can grow unless the banks become credit worthy. Our credit to GDP ratio presently is 55% and credit demand will expand faster than GDP for several reasons. First, the changing thrust of the economy is from service to manufacturing, and the credit intensity of manufacturing is higher than that of service. The

second driver will be infrastructure, and the third, financial inclusion which has not been assessed so far but as more and more banks reach the rural area, the credit demand will pick up. These three factors will lead to credit growth. Hence, GOI needs to infuse capital to meet increasing credit demand and to achieve desirable level of GDP growth.

A valid question has been raised on growth versus cost or growth versus stability. If stability is important, then a little sacrifice on growth in the short term is to be accepted. Indian banks are well placed for Basel III capital requirement and GOI has to support PSBs. It is expected that the cost of capital may go up (on account of hybrid instruments and loss absorbency features in the hybrid instrument) and plough back of internal accruals will be higher resulting in low dividend and payout ratio.

Whether the cost of capital will have an impact on the credit growth is another pertinent question. To some extent it will. The Basel Committee and other independent assessments have concluded that Basel III will impact the GDP ratio. As per assessment of the Macroeconomic Assessment Group (MAG) GDP may decline by 0.22% over a period of time till full implementation of Basel III whereas a study by the IMF assessed a negative impact of 3.2% on the GDP during same period. Without going into the merits of the different claims, the impact of Basel III on GDP is undeniable, and whether the impact on the banking system will be short term or long term, remains to be seen. We personally feel that the impact will be short term. The maximum capital impact may happen from 2015 onwards keeping in view the present level of capital of Indian banks and higher capital requirements will start from that period as per RBI guidelines. As rightly observed by Professor Jayadev, credit demand will be high during that period. So, higher capital needs to meet both regulatory requirement and higher credit growth. This will result in increase in cost of capital and have a resultant adverse impact on profitability.

Q: Do Indian banks (public sector) need to worry about capital since government provides a backstop for capital anyway, like Fannie Mae in the US? Basel is a setup more for private sector banks where capital needs to be provided to match risks? Does it affect public sector banks the same way?

M K Jain: The capital that the government is going to infuse will not be without any riders/conditionalities. The government cannot fund unlimited capital to the public sector banks and insist that banks demanding capital infusion meet certain higher level of performances through MOUs, so that over a period of time banks capital requirement may be self-sustaining. What is the way out for banks? They have to increase their efficiency, and reduce the intermediation cost to offer competitive pricing, otherwise higher cost of credit will impact growth. Basel III is not explicit on capital; capital is an implication. The new regime seeks greater integration of the finance and risk management functions. This will probably drive the convergence of the corporate objective and risk management in delivering the strategic objectives of the business. Probably, going forward, Basel III may also affect business models and banks may be forced to change their

business strategies. It could impact both verticals of business, retail as well as corporate. Banks may be forced to reduce their exposure to large corporates to optimise capital as it won't be easy to get unlimited capital from the government.

Another point for consideration is mandatory requirement of investment in SLR (statutory liquidity ratio) securities. The Basel Committee has not accepted the argument of considering SLR securities as part of the liquid funds. Bankers' view is that as RBI is lender of the last resort, investment in cash reserve ratio (CRR) and SLR can be used to get liquidity support from the regulator in case of need and hence the same may be considered as part of liquid assets to maintain Liquidity Coverage Ratio (LCR) and Net Stability Funding Ratio (NSFR) as required by Basel III. The RBI too is of the opinion that a certain portion of SLR investment may be allowed as part of the liquid asset. If this is not allowed then there will be additional cost to the banks to maintain liquid assets over and above statutory requirements of SLR and the CRR.

M Jayadev: Thank you Mr Jain. Mr. Subhasish Roy, may I now request you to share your views on implementation of Basel III and the challenges for Indian banks,

Subhasish Roy

Basel II was a sought after and important risk management framework before the financial crisis of 2008–2009. After the crisis, Basel II which was considered a more risk sensitive approach as compared to its earlier version Basel I, was found wanting. Thus Basel III was designed to overcome the systemic loopholes in the Basel II framework. In particular, Basel III was designed to address the weaknesses of the past crisis and to make the banking sector stronger and more efficient. The major thrust area of Basel III is improvement of quantity and quality of capital base of the banks with stronger supervision, risk management and disclosure standards. The highlights of Basel III are as follows:

- More thrust on equity capital
- Introduction of capital conservation and countercyclical buffer
- Regulatory adjustments/deductions from common equity
- Introduction of loss absorption features instruments
- Introduction of point of non-viability - loss absorption trigger point (<6.125% of risk weighted assets (RWA))
- Introduction of leverage ratio
- Introduction of liquidity coverage ratio
- Supervisory review and evaluation process (SREP) under Pillar II covers area of unrated exposure, emphasis on credit assessment and broader coverage of counterparty credit risk management policy.

The minimum capital requirement is 8% but when the bank capital touches 6.125% then additional Tier one capital will be converted to equity. This is called loss absorption trigger point and will safeguard the bank.

Basel III has emerged as a follow up to the failure of some international banks. In India even at a difficult time

banks did not experience that type of failure or difficulties and the regulatory norms imposed by the RBI were much more stringent as compared to international standards.

Issues regarding capital to PSBs

Coming to issues regarding the quantum of capital for public sector banks (PSBs), the RBI estimates for additional equity capital requirements under Basel III is around Rs 1500 billion. If the present government shareholding pattern is maintained, then the government's share comes to around Rs 910 billion. However, if the government reduces its shareholdings to 51%, then its share will come to around Rs 700 billion. If you take into account the recapitalisation of banks then the amount the market will have to provide will depend on the extent to which the government can meet the recapitalisation burden of PSBs.

Based on past track record, raising around Rs 700-billion over the next five years may not be very difficult, considering government is the major shareholder. The actual capability is based on individual bank specific factors such as – branding, reputation, financial performance, operational efficiency and so on.

Profitable banks will have less capital requirements as compared to less profitable banks. The question is whether the government should pump such a huge amount of money to public sector banks at this stage. There are three options here. The first option is for the government to reduce its shareholding to 51% so that its share will come down to around Rs 700 billion. The second option is a merger between the banks with very high government shareholding and the banks whose shareholding is marginally higher than 51%. The third option would be for the government to reduce its shareholdings in PSBs below 51% but in all probability the government will not give up its voting rights, so the second option seems most feasible.

There is some talk about a holding level company in which the government will have 100% equity. The company will raise the debt to be invested by institutions and will give equity based on the needs of the various banks. Here the government is only providing security backing, it does not have the burden of raising equity and pumping it into the individual banks. The idea is under consideration by RBI. However, some issues like who will monitor these companies, what will be the capital adequacy ratio, will need to be addressed.

Impact of Basel III and the action required from banks

How will Basel III impact the economy in general and banks in particular?

It may result in higher government borrowing, fiscal deficit, inflation, and pressure on GDP. Lower GDP may also affect investments, credit off-take and banks' profitability. Particularly for banks it could mean higher cost of capital, lower return on equity (ROE), lower yield on assets, and pressure on credit off-take and profitability. A recent study conducted by CARE on the banking industry¹¹ revealed that

a 1% increase in core equity ratio is expected to be met by fall of ROE by 80–100 basis points which shows the extent to which profitability will be affected.

Banks would have very limited scope to increase profitability or minimise cost. Banks with a very low profitability margin will be affected most because they will require more capital as conversion from profit to capital will be less. Under Basel III the capitalisation ratio is arrived at by dividing equity capital by the risk weighted assets. How can banks minimise the risk weighted assets? Banks can change the business mix focussing more on retail/short term loans rather than corporate. Banks need to change their customer mix and ensure proper pricing to maximise risk adjusted return. Banks must seek low cost funding with a thrust on low cost stable deposit base. This could mean opting for the business correspondent or business facilitator model prescribed by the RBI, which would pre-empt the need to operate full-fledged branches while still reaching the goal of financial inclusion. Banks must improve systems and procedures, refining their rating model so as to obtain the proper risk weight, going in for data cleaning and modernising systems and procedures to meet operational needs. Operational efficiency will ensure economising on capital through the lowering of risk weighted assets.

Crowding out credit to private sector

Let us examine the issues that are connected with crowding out of credit to the private sector. Higher deployment of funds to liquid assets may or may not lower yield on assets. It depends upon the individual bank's ability to deploy funds to higher risk-adjusted assets. Lending to the private sector may depend upon the individual bank's risk appetite. Banks need to carry out cost benefit analysis in order to decide on the cost of the bank's failure in not deploying liquid assets vis-a-vis cost of crowding out of credit to private sector. Banks which are capable of attracting larger deposits can lend more to the private sector. The cash reserve ratio and statutory liquidity ratio (CRR & SLR) investments need to be considered for liquidity standards in India.

Measurement of systemic risk

While bank specific risk is relatively easy to identify, systemic risk is much more difficult. In this regard, there is a need for devising objective criteria to identify trigger points of boom and slack in an economy. For this purpose the following parameters need to be considered for market study. These include

- trend in credit/GDP ratio
- market volatility
- sectoral concentration (industry/borrower)
- NPA/GDP ratio
- asset price movement
- inflation
- banks' exposure to sensitive sector
- systemic liquidity index
- fiscal deficit

¹¹ CARE Research, May 9, 2012.

It may be mentioned that to identify systemic risk there is a need for developing a large historical macroeconomic database for above parameters.

Classification of banks

Classification of domestic systemically important banks is important since the failure of a bank can trigger a domino effect. The RBI has decided to study two banks, SBI and ICICI to come up with guidelines for this. The core parameters for classification could be: cross border presence or exposure to the international market; interconnectedness within the economy, either with other banks or financial institutions; size; and complexity.

Ability of PSU banks to raise capital from market

Coming to the point of the ability of the banks to raise capital, going by their track record in the last few years, raising Rs 700 billion from the market does not seem very difficult. Further, there is a misconception that PSBs, because of their low PE-ratio compared to private sector banks, will not be able to raise funds. I feel PSBs can also raise funds from the market and this will largely depend on the individual bank's profitability, marketing/branding strategy, their quality of management, operational efficiency and quality of assets. However their fund raising capacity is constrained because government shareholding cannot fall below 51%.

Having listened to the two executives from public sector banks, let me invite Mr. Gobind Jain from a leading private sector bank to speak on Basel III, capital efficiency and challenges for Indian banks.

Gobind Jain

I will begin by touching upon the need for Basel III. The global financial crisis occurred mostly in the areas of trading book/off balance sheet derivatives/market risk and on account of inadequate liquidity risk management. Banks suffered heavy losses in their trading books and did not have adequate capital to cover the losses. Banks relied very heavily on short term wholesale funding to build long term assets, there was an unsustainable maturity mismatch and banks had insufficient liquidity assets to raise finance during the stress period. The market for liquidity dried up both on asset and liability side during the crisis.

The RBI's proposed framework is applicable at two levels – the standalone bank and the consolidated level (excluding insurance and non-financial activities). The RBI's recommendations for banks stressed improving the quality and quantity of capital, enhancing risk coverage, creating capital conservation buffers, supplementing capital requirement with leverage ratio, tightening rules affecting risk weighted assets, and aggressively implementing the schedule vis a vis the Basel III requirements.

However the present proposals do not cover liquidity standards (separate draft guidelines were released on 21 Feb 2012), countercyclical buffers, and standards for systemically important financial institutions (SIFIs).

Table 5 Improving quantity of capital.

Sr. No	Regulatory capital	RBI (% of RWAs)
1	Minimum common equity tier 1 ratio	5.50
2	Capital conservation buffer (common equity)	2.50
3	Minimum common equity tier 1 ratio + Capital conservation buffer (CCB) [(1)+(2)]	8.00
4	Additional tier 1 capital	1.50
5	Minimum tier 1 capital ratio [(1) +(4)]	7.00
6	Tier 2 capital	2.00
7	Minimum total capital (MTC) [(5)+(6)]	9.00
8	MTC + CCB [(7)+(2)]	11.50
9	Pillar II ICAAP buffer maintenance (example)	2.00
10	MTC + CCB + ICAAP Buffer	13.50
11	Countercyclical buffer (between 0 and 2.5*)	2.50
12	Total capital requirements	16.00

Counter cyclical buffer (*) - Not clear in current RBI guidelines.

If you look at the mandated capital requirement, (Table 5): Improving capital requirement) along with the countercyclical buffer, banks will be required to raise a large amount of money from the market; most of the capital will be in the form of common equity which is a scarce resource and investors would be reluctant to put money in the banks. It will be really tough for the weaker banks to raise additional common equity from the investors. Therefore, every bank has to go through a rigorous procedure of maintaining an investor database in order to raise that kind of money.

I have been asked to address certain specific questions and the first question I am addressing is: *Do individual banks have the potential to access the capital market in order to raise capital?* We must bear in mind that higher capital is not a silver bullet solution to the challenge of ensuring financial stability and access to capital does not necessarily ensure that banks will be financially stable. There are other aspects which need to be looked at such as the risk management framework, the quality of assets, the quality of funding, diversity of funding and so on. Merely prescribing higher capital also could push banks to take on more risk to generate more return on the excess capital. As per a study by CRISIL ratings,¹² banks will need to raise equity capital of Rs 1.4 trillion by March 2017 to meet their growth requirements, while complying with the guidelines. As per ICRA,¹³ out of the Rs 6 trillion capital required over the next nine years, 70–75% would be required for public sector banks and rest for private sector banks.

¹² http://www.moneycontrol.com/news/business/transition-to-basel-iii-will-not-bechallenge-crisil_699592.html.

¹³ <http://www.sify.com/finance/banks-will-need-rs-6-lakh-cr-capital-till-2019-icra-news-banking-kjybEmgijjd.html>.

Indian banks have maintained capital in excess of regulatory minimum – that is the discipline RBI has been forcing on Indian banks. For PSBs, government support is needed to augment core Tier 1 capital, as the government may want to maintain 51% stake. Private banks have already raised Rs 500 billion in the last five years. It is not so difficult for private banks to go to the market and raise the money but the state of the capital market will be the primary deciding factor as also the price discovery in the market. If all or most of the banks approach the capital market simultaneously or when the markets are going through a lean period it will be difficult for the private banks to raise money. Much depends upon the investor base each bank is able to nourish and the confidence it can instill in the investor community.

The next question is: *With the increased demand for credit, will the Basel III capital framework increase cost of credit? What are the options before the banks?* Once the capital requirements are in place, then the banks' response can be classified along operational response, tactical response and strategic response.

Operational response will be on the lines of processes, method and data. Examples of operational response would be risk weighted asset (RWA) optimisation including model refinement, process improvement, enhancement of data quality, reducing credit exposure and through stricter credit approval processes and potentially, through lower limits. The banks will improve liquidity risk management processes including stress testing and development of contingency funding plans, so that minimal liquid assets are maintained. Banks would also need to integrate their subsidiaries through a consistent risk management and capital management approach, expressed as a consistent framework across the group to save on the capital. Banks could also look into increasing efficiency, strategic cost reduction, and reassessing risky processes so that operating costs will be reduced and productivity will simultaneously increase.

The *tactical responses* will be on the lines of pricing, funding, and asset restructuring. Examples of tactical responses include adjusting lending rates, depending on competition within the specific segments and each segment's strategic importance for the bank, reflecting higher capital and liquidity costs through more risk sensitive pricing (and performance measurement on that basis), shifting to long term funding, the reduction of the securitisation exposure, lower trading book exposures and reduced activities in areas such as derivatives, repos and securities financing. Banks will also look at longer term funding (for instance by replacing interbank funding with longer term debt and increasing the maturity of deposits) rather than going for short term funding options.

The *strategic responses* would be along the lines of the business model, organisational structure, and equity. Such responses will be active approach to balance sheet management, undertaking strategic cost reductions, including rationalisation of branch structures, product rationalisation or implementation of a shared services model. Banks will have to look at the kind of equity they can raise, the contingent capital and the amount of earnings they have to retain to reduce the need for raising further capital. At the same time this will affect the

investor community because the investors look at dividends and expect some returns from the banks every year. So it's like a trade-off between retaining capital, retaining earnings and distributing dividends. Banks also have to look at their lines of businesses and make some hard decisions on exiting risky businesses, and businesses that are more capital demanding and also outsourcing or off-shoring non-core functions. Banks may consider changing group structure by buying minority. No matter what actions banks take to reach compliance with Basel III and to restore profitability, all actions should be harmonised to create an efficient approach and achieve the best possible results.

The Reserve Bank of India has debated on the holding structure for the banks in India. The final guidelines are still not out but if the banks meet the holding structure guidelines, then the demand on the capital will be less. Therefore, the current deduction from Tier one and Tier two will go away and under the new regime, all deduction will be from the common equity and to that extent there will be a saving of capital.

The next question is: *Would shareholders prefer less stable and more risky banks with higher ROE or more stable and less risky banks?*

My response is strengthening capital requirements is expected to reduce the banks' ROE. There are options for banks to increase riskiness of assets or increase the risk exposures by expanding maturity mismatches. Banks may indulge in some risk taking practices so that they can increase the ROE. Risky and systemically important banks may also pose a threat to the stable economy and the consequent risk may spill over to the real economy. However, the regulators may not permit high risk taking by banks. The RBI has taken a conservative approach by not permitting banks to take a higher risk. They achieve this by closely supervising the banks. The RBI has already created a conglomerate cell which closely looks at the bank and its subsidiaries, the nature of their businesses, and the kind of risks they are taking. While this would improve the banking sector's ability to absorb shocks and prevent the banks from taking excessive risk it would definitely reduce the return on equity. As far as shareholders are concerned, they range from risk averse to risk taking, depending on the lifecycle in which the shareholder is, whether it is a younger shareholder or a retired person. The bank has to nurture a mix of shareholders or try to have more foreign investors who can invest money in India as returns in India are definitely higher than the returns overseas. Shareholders may necessarily have to live with less risky and more stable banks. On a risk adjusted basis the investors may be indifferent but the absolute returns on investment will go down.

What is the cost of meeting higher capital requirements for the banks?

There would be a reduction in banks' ROE as debt is substituted with expensive equity. The timing of approaching capital markets is important. Therefore, the bank has to start planning in advance if they want to raise capital in a timely manner and at a proper price. Unfavourable markets may mean issuing shares at a higher discount to market price and issuing more equity shares, thereby causing dilution of shareholding and reducing earnings per share. Banks may be impacted by higher costs

of capital and lower returns making it difficult to attract and retain investors. Again, as the cost of capital becomes higher, banks may be unable to provide lending to SME clients/unrated clients. If banks are not able to turn over their assets due to capital constraints, it will impact the GDP and economic growth as well.

Coming to the question of *a few large banks vs. many small players*, the RBI will look at mergers of banks so that capital is conserved or else there will be many small players or new private sector banks. Whether we will see a consolidation in the banking sector or an extension of smaller players will depend upon the perception of the regulators.

Do banks pass on these costs to the depositors and borrowers?

Changes in capital cost, liquidity cost and long term funding cost will impact the cost of making products and will be factored into the pricing of those products. Banks can mitigate the impact through cost-reduction programmes, changing internal change, adopting capital efficiency measures, de-risking and price adjustments. The primary impact will be on retail and corporate business segments. The price adjustments are subject to the competitive environment, so banks may be constrained to increase the price of products at their will. Banks may be able to pass on some of the costs to retail customers given the relatively high margin on these products, and that some of these customers may fall into the "risky" bracket. But it would be difficult for some markets and business segments such as corporate lending markets are more price sensitive and banks may not be able to pass on costs. Corporates would normally in a position to compare the pricing each bank offers. Again, Credit Value Adjustments (CVAs) will impact trades with lower-rated counterparties and trades with counterparties with limited netting ability. So, cost compensation can be through combination of improved collateral and netting arrangement.

In order to meet the mandate of higher quantum of liquid funds, under liquidity standards of Basel III, do banks have to go for a passive option of lending to government by increasing investment portfolio, by crowding out credit to the private sector?

My colleagues who have spoken previously have discussed this question. Indian banks could follow the model of the Bank of New York which has primarily put its assets under the less risky segments and generates returns through its fee based business. But banks in India should concentrate on their developmental role and on economic growth, on providing development finance to not only to the private sector but also to the corporate sector, infrastructure, and housing. So Indian banks cannot avoid their role as financial intermediaries. Some of the banks can still hold excess SLR but the amount will be ascertained with reference to the liquidity coverage ratio (LCR) – the final guidelines for this have yet to be given by RBI. However, if banks become passive investors of funds, they run the risk of not being able to raise capital in the future.

M. Jayadev: Thank you Mr. Jain. Now Mr. Prasad is joining us from Florida (USA). Prasad has rich experience in understanding emerging markets and will give us his views on banks and risk management. Welcome Prasad, hope we have not disturbed your early morning sleep ...

Rajendra Prasad

The first question my presentation will address is:

On what aspects of risk management should banks focus?

Banks must focus attention on the following areas to enhance their risk oversight capabilities.

Risk appetite: Banks need to clearly state their risk appetite, which is the bank's willingness to take on financial risks. Banks must quantify and qualify their risk seeking behaviour

Ultimately, how much risk the bank wants to take on and at what rate of return must be clearly defined. Conceptually, the following metrics and accompanying indicators can assist in articulating the bank's risk appetite: earnings volatility; profitability metrics such as ROE, RAROC, RORAC, EVA; target capital ratios; target risk profile; and zero tolerance of risks Risk appetite should not exceed an entity's risk capacity, and in fact appetite should be well below the capacity.

Reviewing portfolio risks in relation to risk appetite: Banks have to assess the vulnerabilities of their portfolio at regular intervals and determine whether the portfolio is in line with the risk appetite

Being appraised of the material risks and related responses: Because risks are constantly evolving, the goal of risk management is to provide timely information about risks arising across the organisation

Model risk management: Banks need to improve the governance of models being used. Decisions cannot be based on quantitative models alone. Qualitative/expert judgement is a key parameter to minimise the model risk

Stress testing: Stress testing receives lot of significance under Basel III

VaR does not capture catastrophic losses. Hence, Stressed VaR is the key parameter in Basel III capital adequacy calculation.

Strengthening enterprise risk management for strategic advantage: Implementation of enterprise risk management (ERM) provides the opportunity to have integrated view of the risk and the cross-risk interactions

A new risk and finance management culture: Basel III is changing the way banks manage risk and finance. Basel III requires greater integration of the finance and risk management functions. This will probably drive the convergence of the responsibilities of Chief Finance Officer (CFO) and Chief Risk Officer (CRO). Basel III provides a framework for true enterprise risk management, which involves covering all risks to the business

My next question pertains to *improving the risk architecture*

Managing the data: In order to meet the Basel III compliance, banks have to ensure that risk and finance teams have quick access to centralised, clean, and consistent data. The data management requirements of Basel III are significant. If the data is dispersed across different silos it involves more overhead costs compared to those with a more centralised approach to collecting, consolidating, and submitting reports under Basel I, II, and III. Data has to be efficiently managed so as to ensure that calculations for capital adequacy, leverage, and liquidity are done accurately

Transparency/Audit-ability-data lineage: Once a regulatory report has been submitted, it is highly likely that a regulator will follow up with the bank to clarify critical issues about how the results were calculated and how the rules were applied. This will require the bank to identify, check, approve, and submit the data quickly and accurately. This audit process will be especially difficult for banks if the data is dispersed across multiple silos and systems, as it will take longer to search for the relevant information. Banks with a centralised data model will be able to respond faster and more efficiently to these enquiries

Stress testing: This will be difficult to deliver if organisations have their data distributed across multiple silos. It will take more effort, time and it will deliver less accurate results, compared with having a data model where all the critical information is held in a central repository. Placing all the data in a central repository will allow banks to run a wide array of complex stress tests that meet the needs of the business

The ideal solution would be to consolidate the calculation and reporting of Basel III from a single, centralised reporting platform. It would seamlessly integrate with the source systems.

How to strengthen risk management capacities so as to generate adequate and qualitative data?

There are various Enterprise Data Management tools currently available to improve data quality. Banks need to setup sound practices for data governance. That would involve the following:

- Assessing the current state of data quality at your company
- Understanding and fixing the root causes of data contamination
- Creating standards and procedures for data quality
- Enforcing the policies and procedures that govern the data while the data is in their custody
- Periodically monitoring (auditing) the quality of the data in their custody
- Monitoring and advising the end users on proper usage of their data
- Creating the awareness of criticality of data quality

What are the gaps in available macroeconomic data?

Several gaps exist in the macroeconomic statistics, such as

- Breaks within time series economic statistical data produced by many of the ministries and agencies
- The extent of compilation and presentation of statistical data are not in a form that are readily usable and therefore require further analysis
- Some of the economic indicators produced by the agencies are often in conflict with each other due to different methodologies
- Economic statistical data is not sufficiently granular enough to meet user needs.

How to measure systemic risk in the Indian context?

Systemic risk can be defined as joint distress of several financial institutions. Value at risk (VaR) is widely used to measure systemic risk. Value at risk of the financial system

is conditional on a set of institutions being under distress. The financial system is modelled as the portfolio of banks and financial institutions. A financial institution's contribution to systemic risk is the difference between the financial system portfolio CoVar when the institution suffers a large loss and the normal VaR of the financial system portfolio.

Systemic risk can be addressed through various ways such as: systemic capital requirement: Capital requirement proportional to estimated systemic risk; systemic fees: Fees proportional to estimated systemic risk; creating systemic fund; and private/public systemic insurance.

M. Jayadev: Finally, I welcome Mr Gagan Deep Singh to present the technical and consultant's perspective

Gagan Deep Singh

The questions that I will address revolve around aspects of risk management and how to improve the risk architecture of capital market institutions. Though advanced risk management services may not be prevalent in most organisations, we are now learning the need for effective risk management. For example, a case study which was recently discussed in one of our calls with the senior management, involving credit card default by a couple to whom credit cards had been issued separately, brought home the importance of using the social media and improved risk architecture such as big data and cloud services to investigate into the relationships between the people to whom we have extended loan facilities or credit facilities.

There are ample examples in the industry of similar phenomena. Recently, in a presentation at IIMB on credit default swaps (CDS), the paper made the point that after CDS was introduced, defaults increased. They should have decreased because CDS offers insurance and provides more liquidity in the market; they provide more information about the default in the market. The reason for this anomaly, as analysts of big data put forth based on statistical evidence (though they could not offer empirical evidence), was the underlying relationships in the CDS transactions between the companies and those who were paying the premiums leading to fraudulent deals.

I will cite one more example of the use of big data. During the collateralised debt obligations (CDO) market crash in 2008, there was ample evidence based on big data to support the fact that rating agencies which were rating the CDO tranches, had vested interests in rating the tranches (Under Basel II that was then prevalent, there was a provision that an unrated tranche of CDO would get less weight than the triple C tranche of CDO. Tranches that were unrated defaulted earlier than the triple C tranches). So the role of big data has become important post crisis and given these vested interests and fraudulent deals.

Prof Jayadev asked whether regulation should be rule based or principle based. One of the problems as revealed in all these examples is that we are following rule based regulation. We see risk in the form of numbers whereas there is the relationship aspect also to risk which is very big. I will cite one or two more examples from my own experience, which has to do with modelling, particularly the use and misuse of modelling techniques. In one of our

engagements with an Australian bank, we were validating their credit risk models. The bank had a very low default portfolio. However, since they wanted to be Basel compliant, they adopted the internal ratings-based (IRB) framework as prescribed by Basel II, according to which banks had to measure Probability of Default (PD) on their own. They adopted statistical techniques to compute probability of default. One of the popular statistical techniques is the logit model, a statistical model which analyses the ratio between the defaults and no-defaults and uses some statistical transformation to arrive at a PD number. However, this statistical model works only when you have ample default data and ample no-default data. If you do not have the default data, the model will still throw out a number but because it is based on very little data, the number is bound to be ambiguous. We were surprised that the bank was using the logit model despite there being very little default. Therefore, the misuse of models is more prevalent in today's market than the proper use of models. Somebody said the same thing about VAR models. Value at Risk has a match problem and that means VAR which is measured on a portfolio is greater than the VAR measured on individual stocks. This statistical property has been grossly misused by traders. Further, the models which are coming up in order to be Basel compliant are far too complicated and are difficult to explain to the regulators.

M. Jayadev: Now the floor is open to the audience, I welcome my faculty colleagues Professor Venkatesh Panchapagesan, Professor P. C. Narayan and others, research students and other observers to ask questions and for comments.

Discussion

V. Panchapagesan: Risk measurement depends a lot on the accounting. In India, there is a gap between what is reported and the real true NPA. How does that figure in capital risk? There is a capital requirement based on the original. Does the capital requirement change as the degradation happens and is the degradation on what is reported or what is the true value?

M. K. Jain: We have to look at it from two perspectives. One, from the perspective of Income Recognition and Asset Classification (IRAC) norms to classify the account as NPA and the other from the perspective of capital allocation. As per IRAC norms, provisioning against NPAs is only based on originals but for capital requirement under Advanced Approaches of Basel II, restructured accounts are considered as default points to estimate Probability of Default (PD). Second point is definition of default. In Basel II definition of default is in terms of point in time, and not market value of loan to factor migration of the ratings; so that's again a modelling error in Basel II. In trading book, market value is factored in to take into consideration migration of rating but not in banking book. In banking book, it is addressed to some extent by estimating downturn Loss Given Default (LGD) and PD

V. Panchapagesan: There is a follow up question to this. You know that the capital requirement is based on the risk of the underlying assets. The risk can change dramatically

and suddenly and it may take time to raise capital. So what does Basel tell you about the timing?

M. Jayadev: There is the capital cushion buffer that has been suggested in Basel III. That means if bank's risk is increasing, the regulator has to determine the inflexion point and introduce additional capital requirements. However answers to questions such as when and how that point is determined, the metric to be used and so on, are not available in the Basel document.

P. C. Narayan: One of the things that we studied as part of the banking system was the inspection by the Central Bank. The Central Bank tended to be more rigorous with banks whose credit book was in worse shape than others, and banks would be asked to restate their NPA, to recompute the capital, and it would get embedded automatically into the next cycle of financial reporting by the bank. So you suddenly find that a bad performing bank had a capital of 12% as on March 31, 2012, and then it has actually gone down to 10½%

V. Panchapagesan: That's fine when there is a government owning banks, but the moment you go to the markets and you are raising capital with a lower NPA, then it is bound to raise questions. A certain transparency is required if you go to the public markets.

P. C. Narayan: You have raised a question which is very emotional for the Indian banking system, i.e. government ownership of banks. We are not going to solve this problem of capital adequacy in banks unless the government takes a firm decision and it is politically difficult. But they have to do it, to at least bring government ownership down to 33% from the existing 51%. After the first round of nationalisation in 1969, and the second round in 1980, we thought the curve was going to go that way. Now, suddenly, in the economic liberalisation of the mid 90s the government said, we are going to reduce our ownership to 51%. That was path breaking legislation. There is a lot of pressure building up to reduce it from 51% to 33% but it's a political issue, it's not an economic issue. I believe it will happen but like everything else in a democracy it will take time.

M. Jayadev: We always look at banks' performance from the external governance point of view, that is through capital adequacy ratio, NPA ratio, profitability, ROA and so on. The board's activism is not taken into account, and most public sector banks have inactive boards. According to corporate finance theory, board activism is more important for financial performance. If the government focuses on internal governance aspects and activates some of the aspects of the corporate governance framework, some of these issues can be solved. Otherwise banks would be completely CEO- or CMD- driven.

M. K. Jain: Currently, there is a debate on the reason for low market capitalisation of the public sector banks in comparison to private sector banks. Is it only because of fundamentals or something else? It may be due to corporate governance issues.

P. C. Narayan: It's again coming back to the ownership of the government, the one entity that owns 51% and they will have the last word in what the board is going to look like. So, any talk of corporate governance reforms has to be preceded by a capital structure reform. There is enough literature evidence available to establish this.

V. Panchapagesan: There was a point raised about the change in the mix by which the banks would end moving to either short term loans or different types of loans, to meet the Basel requirements. Is this going to lead to a different kind of a problem whereby the credit moves from the banking sector to the unorganised lending market which would cause a bigger systemic risk problem? Non-banking finance companies, private equities and so on are probably not held to the same Basel standards. If I understand this legislation right, it might fundamentally change credit generation in the system and some of the riskier sectors would move towards more unorganised lending which is more of a systemic risk problem.

M. Jayadev: True, we have seen such incidents of systemic risk in microfinance where institutions have failed due to defaults. We have also talked about few institutions dominating -, for example, HDFC, a single product company which is unchallenged by the entire banking sector in this country so far. Are such institutions a benchmarking example or a risk example in the financial services?

P. C. Narayan: Clearly, we have a choice. There is a rapidly evolving shadow banking system in this country. We beat our chest and say that we are a well regulated banking system; what we ignore in that process is that we are creating an unregulated banking system and the Indian version of the crisis that happened in the United States with the investment banks in the hedge funds, could evolve. So, we may actually be creating an environment where people want to look for capital arbitrage. With Basel III they may incentivise the capital arbitrage, that means create financial asset companies which do not have capital adequacy requirements of the same level as a bank. Such a situation will evolve and we had better be cautious about it.

V. Panchapagesan: In India, public sector banks had the implicit guarantee from the government that they won't fail because of possible injection of capital by the government in case of trouble (much like Fannie Mae in the US). Now that implicit guarantee may be worth a lot less since all banks, including public banks, have to maintain certain amount of capital in their balance sheet.

M. Jayadev: True, government ownership itself is an implicit guarantee against failure. The government being the major owner is infusing additional capital to the capital deficient public sector banks, which helps the banks to meet the mandatory capital adequacy ratios and enables their competitive strength in the international market. The capital infusion is enhancing the value of implicit guarantee and boosting depositors' confidence. Probably this may be the reason for lower market valuations of public sector banks in spite of having good financial performance such as ROA.

V. Panchapagesan : Accounting jugglery becomes an important issue - I understand that RBI may treat banks' restructured loans also as NPAs for risk weights...but the banks surely will be tempted to do things to hide their bad loans (which in most cases are caused by political interference in the lending process). For e.g., there is an amendment to the SARFAESI act now lying in the parliament which allows banks to buy foreclosed properties that they themselves put up for auction because of loan defaults. In other words, rather than selling at a loss and booking the loss in the balance sheet, the banks can now

seemingly buy them at a price that will not show any loss, keep the property in their balance sheet and look good.

M. Jayadev: By following prudential accounting norms banks treat restructured assets as NPAs and are making room for provisioning. Internal control systems should address the issue of hiding bad loans and greening of assets. In addition to RBI inspection, concurrent audit, internal audit the board level interventions are to be strengthened. An effective corporate governance mechanism is the need of the hour; currently boards are often inactive.

Regarding the latest amendments to SARFESI and DRT Acts, these are empowering the banks and improving the recovery process. According to the amendments proposed, banks and asset reconstruction companies (ARCs) will be allowed to convert any part of the debt of the defaulting company into equity. Such a conversion would imply that lenders or ARCs would tend to become equity holders rather than being creditors of the company. Further, the amendments also allow banks to bid for any immovable property they have put out for auction themselves. If they do not receive any bids during the auction, banks will be able to set off the debt against the amount paid for this property. This enables the bank to secure the asset in part fulfilment of the defaulted loan.

M. K. Jain: This issue is being addressed in various forums and insurance companies are already working on aspects such as solvency ratio. The RBI has already regulated to prevent shadow banking and issues restrictions to prevent shadow banking.

M. Jayadev: With this we have come to the end of our round table discussion. Thank you all for being present and making this event a knowledgeable discussion. I thank all the panellists for bringing the practitioner's perspective to the table. I clearly see a few research issues for Indian banks in this context;

How will Basel III implementation affect credit growth and loan pricing? What would be the impact of these norms on stock returns of banks? And, finally the relevance of systemic risk in the Indian context and its quantification.

I take this opportunity to thank all the panellists for their valuable time.

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