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Basel III & Indian Banks

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लेखों तथा अन्य रचनाओं में व्यक्त किए गए विचार लेखकों के निजी विचार हैं । लेखकों द्वारा व्यक्त किए गए विचारों के लिए संस्थान किसी प्रकार से उत्तरदायी नहीं होगा ।

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MISSION

The mission of the Institute is to develop professionally qualified and competent bankers and finance professionals primarily through a process of education, training, examination, consultancy / counselling and continuing professional development programs.

ध्येय

संस्थान का ध्येय मूलतः शिक्षण, प्रशिक्षण, परीक्षा, परामर्शिता और निरंतर विशेषज्ञता को बढाने वाले कार्यक्रमों के द्वारा सुयोग्य और सक्षम बैंकरों तथा वित्त विशेषज्ञों को विकसित करना है ।

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editorial

Dr. J. N. Misra
Chief Executive Officer,
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Today, Banks are facing various challenges and implementation of Basel-III is most critical among them. The Basel III capital regulation has been implemented from April 1, 2013 in India in phases and it will be fully implemented as on March 31, 2019. There are various direct and related components of the Basel III framework like increasing quality and quantity of capital, enhancing liquidity risk management framework, leverage ratio, regulatory prescription for Domestic Systemically Important Banks, Countercyclical Capital buffer (CCCB) framework etc. The implementation of Basel III framework will throw up various challenges for banks. While many of the goals behind Basel III-such as greater emphasis on Collateral, Stress Testing, CVA, VaR, Liquidity Risk, and Capital Optimization are understandable, the implementation of such goals and measures and the resulting need for greater consistency across the banking industry remain a major challenge. Accordingly, we have identified 'Basel III Implementation' as the theme for the current issue. The Institute has received seven articles on different topics on the theme from practising bankers / faculty members which forms main content of the issue. Besides, we have included a book review on a contemporary subject.

The second article is by Mr. H. S. Sharma, General Manager, Bank of Baroda. In his article 'Capital Optimization under Basel III' the author mentions broad areas of coverage in Basel III guidelines and explains its implications and challenges for Banks. The focus of the article is on capital optimization strategy. He suggests important areas requiring focus for capital optimization under Basel III such as shift in evolution of risk management from regulatory compliance to business strategy, adoption of technology, adoption of scientific risk management techniques, operational efficiency, portfolio optimization, exploring business model and IT, data quality and data leverage.

The third article is on "Basel Accords and Regulatory Arbitrage' by Mr. Amit Anand, Assistant General Manager-Economist, Bank of India. In this article, the author mentions the dependence on regulatory capital to insulate banks from losses as one of the instruments of the banking regulations under Basel Accords and explains how stringent capital norms in the successive Basel Accords lead to increase in shadow banking activities across the globe. He explains the concept of regulatory capital arbitrage and its guiding principles. The article also enumerates factors explaining shadow banking growth. The article illustrates the impact of regulatory arbitrage through growth in securitization, increase in shadow banking and growth of special purpose non-bank financial institutions, discrimination of traditional banks in terms of higher capital and liquidity requirements besides their regulatory disadvantage. The author suggests continuation of efforts on harmonization of global standards to mitigate systemic risks.

The next article is by Dr. G. Madhavankutty, Chief Manager (Economist), Bank of India. In his article 'Basel-III bonds - how effective are they in shoring up capital adequacy?' the author explains the salient features of Basel-III bonds and their efficacy in supporting capital adequacy of the banking sector. He explains key features of Tier-I and II instruments under Basel II & III and their implications.

The fifth article is 'Basel-III : Implementation in Indian Banking Industry' by Ms. S. Nagamani, Assistant General Manager & Faculty, State Bank Staff College. In her article she explains conceptual issues such as building blocks of Basel III, higher capital requirements under Basel III compared to Basel II, liquidity standards & leverage ratios, provisioning norms, disclosure requirement, RBI guidelines on Basel III transitional arrangements etc.

The sixth article is by Mr. P. S. Khandelwal, Chief Compliance Officer & Principal Officer, IndusInd Bank Ltd on 'Implementation of Basel III regulations - New Generation Private Sector Banks'. He explains evolution of Basel accords over time and mentions capital ratio requirements, leverage ratio, liquidity coverage ratio etc. He explains implementation of Basel III and different approaches for managing risks in New Generation Private Sector Banks (NGPSBs). The author describes challenges before NGPSBs such as additional capital requirements, impact on profitability, risk and data managements.

The last article in this issues is by Dr. P. Usha, Faculty, NIBM. In her article 'Basel III and capital structure of Indian banks' she analyses the immediate impact of implementation of Basel III on the capital structure of Indian Banks. The article mainly examines the impact on the Common Equity Tier (CET I) capital to risk weighted assets ratio (CRAR) and total CRAR in the case of Indian Banks.

This issue carries a book review by Mr. S. K. Datta, Joint Director (Faculty), IIBF on 'Credit Monitoring : A Trainer's Writings for Bankers' written by Dr. T. C. G. Namboodiri. In today's environment, credit monitoring part is a weak link in the total credit management cycle. The book is therefore very apt and timely. We hope that all the articles and the book review will be of interest to you.

We solicit your suggestions and feedback for improvement.

Dr. J. N. Misra

Salient Features of Revised Regulatory Framework for NBFCs

i) The minimum Net Owned Fund (NOF) criterion for existing NBFCs (those registered prior to April 1999) has been increased to ₹20 million. NBFCs have been allowed till March 2017 to achieve the required minimum levels.

ii) In order to harmonise and strengthen deposit acceptance regulations across all deposit taking NBFCs (NBFCs-D) credit rating has been made compulsory for existing unrated asset finance companies (AFCs) by March 31, 2016. Maximum limit for acceptance of deposits has been harmonised across the sector to 1.5 times of NOF.

iii) In view of the overall increase in the growth of the NBFC sector, the threshold for defining systemic significance for non deposit taking NBFCs has been revised to ₹5 billion from the existing limit of ₹1 billion. Non-deposit taking NBFCs shall henceforth be categorised into two broad categories : NBFCs-ND (those with assets less than ₹5 billion) and NBFCs-ND-SI (those with assets of ₹5 billion and above - deemed as systemically important) and regulations will be applied accordingly. NBFCs-ND will be exempt from capital adequacy and credit concentration norms while a leverage ratio of 7 has been introduced for them.

iv) For NBFCs-ND-SI and all NBFCs-D categories, tighter prudential norms have been prescribed - minimum Tier I capital requirement raised to 10 per cent (from earlier 7 per cent in a phased manner by end of March 2017), asset classification norms (from 180 days to 90 days in a phased manner by the end of March 2018) in line with that of banks and increase in provisioning requirement for standard assets to 0.40 per cent in a phased manner by March 2018. Exemption provided to AFCs from the prescribed credit concentration norms of 5 per cent has been withdrawn with immediate effect. Additional corporate governance standards and disclosure norms for NBFCs have been issued for NBFCs-D and NBFCs-ND.

v) NBFCs with assets of less than ₹5 billion shall not be subjected to prudential norms if they are not accessing public funds and those not having customer interface will not be subjected to conduct of business regulations.

vi) Assets of multiple NBFCs in a group shall be aggregated to determine if such consolidation falls within the asset sizes of the two categories. Regulations as applicable to the two categories will be applicable to each of the NBFC-ND within the group. Reporting regime has been rationalised with only an annual return prescribed for NBFCs of assets size less than ₹5 billion.

Source : Financial Stability Report (Including Trend & Progress of Banking in India 2013-14) December 2014.

Capital Optimization under Basel III

H. S. Sharma *

Basel III : A Glimpse

Basel III guidelines were enunciated by the Basel Committee to address the inadequacies observed in Basel II capital framework during the global financial crisis of 2007-2008. Unlike introduction of Basel II over Basel I, Basel III has been designed to supplement Basel II rather than substitute it so as to bring about soundness in the banking and financial system.

The Basel III guidelines broadly cover areas as under :

a. Enhanced Quality and Quantity of Capital : The modification in Basel II rules are enumerated as under :

i. Higher proportion of Common Equity Capital : A higher minimum Common Equity Tier 1 (CET 1) capital ratio of 5.5% prescribed by the Reserve Bank of India (against minimum 4.5 percent of common equity under BCBS rules).

ii. Tier 1 Capital : A higher minimum Tier 1 capital ratio of 7% prescribed by the Reserve Bank of India (against 6 percent under BCBS rules)

iii. Total Capital : Unmodified minimum total capital ratio of 9 percent by the Reserve Bank of India (against 8 percent under BCBS rules).

iv. Capital Conservation Buffer : A mandatory capital conservation buffer in the form of CET 1 capital to the extent of 2.5 percent of RWA. Failure to exceed the buffer will subject an entity to limitations on discretionary payments out of profit like dividends, incentives, bonus, etc.

v. Countercyclical Capital Buffer : A discretionary 0-2.5 percent countercyclical capital buffer to counter the cyclicality in bank's business due to economic cycles.

Both the buffers are required to be built by banks in "good times" to be drawn upon in "bad times."

vi. Grandfathering Of Existing Ineligible Capital Instruments : Under Basel III, the capital eligibility of certain hybrid capital instruments with redemption features will be gradually phased out from 2013 to 2021. Further, the tiering of capital has been greatly simplified and "loss-absorbing" is now the main, if not the sole, criterion for inclusion in qualifying capital.

vii. Regulatory capital adjustments : Basel III requires the deduction from CET1 of items such as goodwill, deferred tax assets, intangibles, defined benefit pension fund assets, treasury shares. Under Basel II rules it largely remained unadjusted. Another significant change is reciprocal adjustments to be made in respect of the capital invested in unconsolidated entities (subsidiaries, insurance entities, etc.) which were previously adjusted on 50:50 basis from Tier I and Tier II capital funds.

b. Enhanced Requirements of Capital for Market and Credit Risk : For market risk, Basel III guidelines took effect in 2011, which is popularly known as Basel II. The enhanced treatment introduces a stressed Value-at-Risk (VaR) capital requirement based on a continuous 12-month period of significant financial stress. It requires calculation of minimum capital on stressed Value-at-Risk (VaR).

Basel III has also introduced higher capital requirements for resecuritisations in both the banking and the trading book. Banks will be subject to an additional capital charge for potential mark-to-market losses known as Credit Value Adjustment (CVA) which is associated with a deterioration in the credit

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worthiness of a counterparty. While the Basel II standard covers the risk of a counterparty default, it does not address such CVA risk, which during the financial crisis was a greater source of losses than those arising from outright defaults.

A multiplier of the 1.25 to the correlation factor worked out under the Basel II formula of Internal Rating Based formula of credit risk capital computation has been stipulated for large regulated financial institution (USD 100 billion asset size and unregulated financial entities). New standards for the capital requirements against credit exposures to central counterparties (CCPs) have been prescribed which was hitherto treated as risk free. RBI's response on this aspect is still awaited.

c. **Leverage Ratio :** Leverage Ratio has been introduced as additional safe guard against excessive risk taking. It is a back-stop measure based on gross exposure and invariant of the level of risk of the assets. It measures leverage of the balance sheet along with off-balance sheet exposures including undrawn commitment of the bank in credit facilities (as denominator) against Tier 1 capital (as numerator). A minimum supplementary leverage ratio of 3 percent as per BCBS guidelines and 4.5% as per RBI has been stipulated.

d. **Liquidity Ratios :** Basel III incorporates a framework for liquidity risk management, consisting of Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) as under :

   i. Liquidity Coverage Ratio (LCR) has been introduced that will address short-term liquidity concerns and require banks to hold unencumbered High-Quality Liquid Assets (HQLA) that can be quickly converted to cash to enable a Bank to survive a prescribed significant stress scenario lasting for 30 days. The ratio is calculated as the "stock of HQLA" divided by "total net cash outflows over the next 30 calendar days," which must be at least 100 percent (when fully phased-in). This has been implemented in Indian banking system with minimum LCR of 60% as on 1st January 2015 which will increase to minimum 100% as on 1st January 2019 in phased manner.

   ii. Net Stable Funding Ratio (NSFR) will address a longer horizon and will be used to promote sustainable medium-and long-term maturity structures for assets and liabilities. The ratio is calculated as the "available amount of stable funding" divided by the "required amount of stable funding," which must be at least 100 percent (when fully phased-in). It is intended to supplement the LCR towards soundness of liquidity. The final BCBS guidelines have been issued on 31st October 2014. The Reserve Bank of India is yet to issue guidelines on it. It will become a regulatory standard from 1st January 2018.

e. **Systemically Important Banks :** It was observed during the recent global financial crisis that problems faced by certain large and highly interconnected financial institutions hampered the orderly functioning of the financial system, which in turn, negatively impacted the real economy. Government intervention was considered necessary to ensure financial stability in many jurisdictions. Cost of public sector intervention and consequential increase in moral hazard required that future regulatory policies should aim at reducing the probability of failure of SIBs and the impact of the failure of these banks. Under the framework G-SIB (Globally Systemically Important Bank) and D-SIB (Domestic Systemically Important Bank) will be identified based on a range of indicators. The Reserve Bank of India has indicated that the guidelines will be effective from 1st April 2016. The name of D-SIB is expected to be declared for the first time in August 2015.

f. **Principle of Sound Compensation Practice** : Compensation practices at large financial institutions are one factor among many that contributed to the financial crisis that began in 2007. High short-term profits led to generous bonus payments to employees without adequate regard to the longer-term risks they imposed on their firms. These incentives amplified the excessive risk-taking that has threatened the global financial system and left firms with fewer resources to

absorb losses as risks materialised. The Reserve Bank of India issued guidelines on sound compensation practices in January 2012 and is a part of Pillar 3 disclosure. Private sector and foreign banks operating in India are required to make disclosure on remuneration on an annual basis at the minimum, in their Annual Financial Statements in the prescribed template.

Implications and Challenges for the Banks

The Basel III guidelines will beyond doubt strengthen the solvency and liquidity soundness of the banks. At the same time it will have far reaching implications and pose challenges on the economy and the financial system. The Banks will be required to maintain more capital funds with higher cost (on account of higher loss absorbency features of non equity capital funds) in their balance sheet. In India where Public Sector banks still play a dominant role in the financial system the government and the Reserve Bank of India are expected to play a more facilitating role so that the banks can conform to the new regulatory requirements.

Further there is either no market for certain types of instruments in India or market is shallow. Few banks have successfully raised few thousand crores of capital funds in the form of Perpetual Debt Instrument (PDI, Additional Tier 1 Capital). No bank has ventured to raise Perpetual non-cumulative Preference Shares (PNCPS, Additional Tier 1 Capital), Redeemable non-cumulative Preference Shares (RNCPS, Tier 2 capital) or Perpetual non-cumulative Preference Shares (PCPS, Tier 2 capital) from the market. The cost of Tier 2 Debt Capital Instruments, which has been the mainstay of non-equity capital instruments for Indian banks, attracts higher cost because of loss absorbency features. Raising capital overseas will have currency risks for the Banks in terms of coupon servicing and redemption. However banks with overseas operations can raise and park it overseas.

To understand the impact of implementation of Basel III let us have a look on the proportionate share of capital instruments, under the Basel II and Basel III norms (both under RBI regulations on full implementation), a bank could maintain to meet minimum capital requirements :

Sr. No.	Capital Type	Basel II	Basel III
1a	Common Equity (CRAR)	2.70	5.50
1b	Capital Conservation Buffer	-	2.50
1c	Countercyclical Capital Buffer	-	0 - 2.50
1d	D-SIB	-	0 - 1.00
1	Total Common Equity	2.70	8.00 - 11.50
2	Additional Tier 1 #	1.80	1.50
1 + 2	Tier 1	4.50	9.50 - 13.00
3	Tier 2	4.50	2.00
1 + 2 + 3	TOTAL	9.00	11.50 - 14.00
# AT1 cannot exceed 40% of Tier 1 under Basel II rules. Under Basel III the maximum AT1 is 1.5 for a minimum Capital Adequacy Ratio of 9%.			

It can be observed from the table above that the leveraging capacity of the common equity to raise other capital instruments has reduced from as much as 3.33 times under Basel II to ranging from 1.44 (11.5/8) to 1.22 (14/11.5) times under Basel III rules. This reduces the riskiness of the Bank's balance sheet but poses challenges of return on the shareholders fund. Although the banks in India have high Tier-1 capital ratios (their capital structure usually comprises equity and reserve), the introduction of capital buffers and Leverage Ratio of 4.5% will pose a significant demand. The shareholders will expect a market related return.

To comply with the requirements of Liquidity Coverage Ratio (LCR) the Banks will be required to deploy a part of their funds in High Quality Liquid Assets where the yield will be under pressure. Hence entire balance sheet management assumes significance.

Each of the three broad ways of boosting capital ratios - increasing retained earnings, reducing risk-weighted assets and issuing new equity - have their pros and cons. Reducing risk-weighted assets by downsizing the loan portfolio will create a shortfall in credit lending, which in turn will make it difficult for small and medium-sized enterprises to obtain loans and will have social and political repercussions. Issuing new equity or even other capital instruments may also lead to a drop in lending activities, since banks will have to raise lending rates to maintain the same level

of returns on equity for shareholders. The stringency of norms intended to bring about soundness may cause adverse impact on the economy. However the standards will be implemented gradually and the impact will be monitored by the guardians of the financial system and the economy to ensure that it does not manifest unintended consequences.

Optimization Strategy : the areas requiring focus

Under the given situation, the optimization efforts have to be focused at increasing profitability and retained earnings by achieving greater operational efficiency and increased income. It requires the banks to evaluate their business model in terms of product offerings, Risk Management, Information Technology, Performance Evaluation, Finance and Treasury operations. The areas requiring focus in Indian Banking scenario are suggested as under:

a. **Paradigm Shift :** The Basel III framework will requires optimal utilization of the resources of the bank. Risk Management has to evolve from regulatory compliance to business strategy. The starting point can be analysis of risk return perspective on an asset in the area of market risk and credit risk accompanied with higher standards of corporate governance. The mental rigidity of topline and/or bottomline at any cost has to be done away with.

b. **Adoption of technology as business drivers :** The availability of computer and computer enabled devices can facilitate business with better customer experience and cost effectiveness. Retail lending which involves higher transaction cost can be managed through suitable automation of the delivery process. It will require a team of business and risk analytics who can develop machine logic and artificial machine intelligence to interact with the customer and give a reliable and business worthy decision to them.

c. **Adoption of scientific risk-measurement techniques :** The classification of products and the application of the correct model to each category can help reduce charges significantly. The new ratios and charges introduced to take stock of market and counterparty risk, such as stressed value at risk (VaR), incremental risk charge (IRC) and credit value adjustment (CVA) among others, can be improved by optimizing the calculation models and ensuring that the right quotes are given on real time basis to the customers, dealers, etc. It will help better understanding of risk adjusted return of positions.

d. **Operational efficiency :** IT and operations require a holistic and sustained organizational focus in order to remain steadfast and efficient in implementing the core business. The system design should be scalable and flexible to align with new business models in less time and at less cost. The use of intelligent systems to assist in optimizing resources with minimal human intervention will support improved operational risk management. Use of Key Risk Indicators (KRI) and Risk Control Self Assessment (RCSA) in an automated environment of Operational Risk management system will evolve the organization to a sound, safe and efficient business operations environment.

e. **Portfolio optimization :** Optimizing risk return business strategy may require exiting positions that are capital-intensive, non-core and unrenumerative. The regulator and the Government should clearly articulate the risk return mechanism in directed lending and create a level playing filed in the financial system. Adoption of advanced approaches - Internal Model Approach (IMA) for market risk and the Internal Ratings Based (IRB) approach for credit risk should typically enable the banks to a RWA relief. Even if the RWA relief is not afforded the Bank's adoption of the qualitative requirements of these approaches will enable them to understand risk adjusted return in a better way and optimize the portfolio accordingly. Internal models can allow sophisticated optimization methods for Value at Risk (VaR) such as marginal VaR. In addition, internal models can lead to a better understanding and risk management of the bank's own portfolio.

f. **Business Model :** To fulfill the new regulatory requirements of Basel III, especially the increased capital and liquidity requirements, and to restore

profitability, a relook at the existing business model and its realignment may be required. The extent of the adjustment may depend upon the overall health of the bank, and the derived risk and funding strategy within the new framework.

Other measures might include a stronger focus on specific customer segments such as retail and small and mid-sized enterprises, an adjustment of the products and services offered, or optimization of the group structure to evaluate different options to optimize the returns on deployed capital funds.

g. **Information Technology, Data Quality and Data Leverage :** Apart from adoption of technology as business driver, as discussed above, there is a need to appreciate that we are living in the data age / information age. A tremendous amount of data has flooded almost in every aspect of our life due to the fact that hardware and software have become the most economic resource in our day to day life and business. This explosive growth in powerful data collection and storage has generated a new discipline that can intelligently assist us in transforming the data deluge into information and knowledge. In Indian Banking System terabytes of data get generated in the computer systems on daily basis. Powerful and versatile tools have evolved in the market to automatically uncover valuable information from the tremendous amounts of data and to transform such data into organized knowledge. The organizations, financial or otherwise, which will have the human skill, computer system, and marketing force to translate this organized knowledge to business strategy, will be successful ones in the so called Information Age.

   Indian Banks are sitting on deluge of data offering immense potential for deriving business knowledge out of it. Some of the initiatives required to transform the data into knowledge are suggested as under :

   i. Unification of data formats for risk and finance data : Due to the evolution of data requirements and the ability of banks' IT systems to manage data there might be disparities among the data formats of different entities. This can lead to deficiencies in general data availability, with data used by one unit often not known by, or available to, other units. For example the derivatives data in Treasury operations may not be accessible to a branch where the same customer has loan transactions and collateral related records. Again the data on credit rating may not be available to either of these two systems. This problem of disparate data but huge data requires a new perspective on data management.

   ii. Clear responsibility for data ownership : Defining clear responsibilities for the ownership of risk and finance data fosters an environment in which new data and modifications of data can be controlled and supervised by a dedicated unit. The Banks in India have arrived at full automation with huge baggage of legacy systems. The data is incomplete and lacks accuracy. A clearly spelt out strategy to clean the existing data and stop new junk data to creep in will transform this data from flood of data to goldmine of data. The idea is to make the data fit for descriptive, predictive and explanatory data mining. The starting point in this direction is to delegate this responsibility and authority as at a fairly higher level with clearly articulated powers and accountability.

The journey on Basel III path has just begun. The path forward is challenging as it will start impacting return and profitability. However a clear understanding of the challenges and addressing them in a consistent and strategic manner will make the players smarter and the financial system more sound. The threat that the laggards in the system will discarded cannot be ruled out.

Basel Accords and Regulatory Arbitrage

Amit Anand *

Background

In their much acclaimed book on financial crises, economists Reinhart & Rogoff (This Time is Different : Eight Centuries of Financial Folly, 2009) trace the history of banking & financial crises to the years before the Christ. The center point of their entire argument was that the more things change in the financial world, the more they stay the same. According to them the Greek debt crisis of 2010 had strong resemblance to the Mexican debt crisis of 1827 and the US sub-prime crisis of 2008 has shown similar plot as those of the past modern banking crises, going back at least as far as eighteenth-century Scotland.

In his predated account - Manias, Panics and Crashes (1978), Kindleberger had presented a more comprehensive record of financial crises, stretching back to before the South Sea bubble. He had argued on the similar lines that several common threads linked these different disasters over the centuries in almost every possible nook and corner of the financial world. In the beginning, manias or bubbles follow some unexpected 'good news' and so reflect progress of some sorts. Subsequently, new opportunities for profit are seized, and then mostly exploited to the excess. When this eventually dawns on investors, the financial system experiences distress and often panic. This when extends to the larger economy, the sufferings percolate to the common man at streets.

Regulations attain centre place here, as any sign of systemic stress needs to be addressed during early stages of its development. History of modern banking regulations, across major banking and financial centers globally, has been chequered. Cross-border coordinated regulation appeared much later when the Basel Committee on Banking Supervision (BCBS) originated on the back of financial market turmoil which had followed the breakdown of the Bretton Woods system of managed exchange rates in 1973. BCBS has been instrumental in coordinating with member regulators and developing regulatory codes in the form of Basel Accords since late-1980s.

One of the major weapons of the banking regulations including Basel Accords have been reliance on regulatory capital to insulate banks from losses. Regulators impose capital requirements in order to help ensure the safety and soundness of banks. There are various reasons why safe and sound banks are good, but the most direct - from the regulator's perspective - is that the government is insuring the bank's liabilities. Since the government is always a stakeholder if the bank becomes insolvent, the regulator wants to reduce the chances of that happening - hence capital requirements.

Successive Basel Accords have made the regulatory capital requirements all the more stringent and Basel III proves to be stringent of them all. In fact, stricter capital norms have given rise to growing 'shadow banking' activities across the globe. Shadow banking activities are banking activities such as credit, maturity, and liquidity transformation that take place outside the regulatory perimeter without having direct access to public sources of liquidity. Shadow banking has expanded rapidly over the last decades and was at the heart of the 2007-2009 financial crisis.

Creative Financing and growth of Shadow Banking

Shadow Banking System (SBS) includes entities which are generally beyond the purview of banking regulator. Players such as hedge funds, money market funds, Structured Investment Vehicles (SIV), private

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equity funds, credit insurance providers, etc. may form part of the SBS. According to the Bank for International Settlements (BIS), investment banks as well as commercial banks may also conduct much of their business in the SBS, but most are not generally classed as SBS institutions themselves.

A shadow banking system can be composed of a single entity that intermediates between end-suppliers and end-borrowers of funds, or more usually it could involve multiple entities forming a chain of credit intermediation. In the latter case, one or more of the entities in the chain might be a bank or a bank-owned entity. Banks might also be exposed to the shadow banking system through temporary exposures (warehousing), through the provision of finance, or through contingent credit lines. In addition, banks can be funded by entities which form part of the shadow banking system (e.g., money market mutual funds).

Though the core activities of some of the shadow banking entities (like, investment banks) are subject to regulation and monitoring by central banks and other government institutions - but it has been common practice for these to conduct many of their transactions in ways that do not show up on their conventional balance sheet accounting and so are not visible to regulators or unsophisticated investors. For example, prior to the 2007-2012 financial crisis, investment banks financed mortgages through Off-Balance Sheet (OBS), securitizations (e.g. asset-backed commercial paper programs) and hedged risk through off-balance sheet credit default swaps.

Prior to the 2008 financial crisis, major investment banks were subject to considerably less stringent regulation than depository banks. In 2008, investment banks Morgan Stanley and Goldman Sachs became bank holding companies, Merrill Lynch and Bear Stearns were acquired by bank holding companies and Lehman Brothers declared bankruptcy, essentially bringing the largest investment banks into the regulated depository sphere.

The volume of transactions in the shadow banking system grew dramatically after the year 2000. Its growth was checked by the 2008 crisis and for a short while it declined in size, both in the US and in the rest of the world. In 2007 the Financial Stability Board (FSB) estimated the size of the SBS in the U.S. to be around $25 trillion, but by 2011 estimates indicated a decrease to $24 trillion. Globally, a study of the 11 largest national shadow banking systems found that they totaled to $50 trillion in 2007, fell to $47 trillion in 2008 but by late 2011 had climbed to $51 trillion, just over its estimated size before the crisis. Overall, the world wide SBS totalled to about $60 trillion as of late 2011.

Though, it is unclear to what extent various measures of the shadow banking system include activities of regulated banks, such as bank borrowing in the repo market and the issuance of bank-sponsored asset-backed commercial paper. As per recent FSB estimates, by 2013 the global size of shadow banking system had crossed $75 trillion mark. It's growing at phenomenal rates in China and India and booming in Western banking capitals as well. The situation was found to be most pressing in Argentina, where the FSB reported a 50 percent increase in 2013.

Regulatory Capital Arbitrage and shadow banking

Regulatory Capital Arbitrage (RCA) refers to actions taken by banks and market participants to exploit the difference between economic risk and regulatory requirements to reduce capital levels without reducing exposure to risk. Regulatory capital arbitrage normally involves unbundling and repackaging risks so that, as measured for Risk-Based Capital (RBC) purposes, a disproportionate amount of the portfolio's true underlying credit risk is treated as lower risk-weighted assets, or as having been sold to third-party investors. Currently, most RCA revolves around the following three guiding principles :

Principle 1 (Concentrate credit risk and cherry pick) : Restructure positions so as to concentrate the bulk of the underlying credit risks into instruments having a combined Maximum Potential Credit Loss (MPCL) much smaller than that for the original portfolio. By implication, the remaining instruments will entail relatively low levels of credit risk, but a relatively large portion of the portfolio's MPCL. Sell these low-risk instruments to investors (a form of 'cherry picking').

Principle 2 (Remote-origination) : Where possible, structure transactions to ensure that any retained risks under Principle 1 are treated as direct credit substitutes rather than as recourse. In general, this requires that the sponsoring bank never formally own the underlying assets (remote-origination).

Principle 3 (Indirect credit enhancements) : Where possible, convert credit exposures into contractual arrangements that, while providing some investor protection, are not recognized as financial guarantees. Such indirect credit enhancements typically incur no RBC requirement.

RCA has been marked as one of the biggest drivers of shadow banking globally. Although shadow banking takes different forms around the world, the drivers of shadow banking growth are fundamentally very similar : shadow banking tends to flourish when tight bank regulations combine with ample liquidity and when it serves to facilitate the development of the rest of the financial system. The current financial environment in advanced economies remains conducive to further growth in shadow banking activities.

Search for higher yield, regulatory arbitrage, and complementarities with the rest of the financial system play a role in the growth of shadow banking. Though no comprehensive empirical assessment of the drivers of shadow banking appears to have been conducted yet. However, following factors are found to explain shadow banking growth to a greater extent :

- **Bank regulation :** More stringent capital requirements, for example, are associated with stronger growth of shadow banking. This is consistent with the notion that banks have an incentive to shift activities to the nonbank sector in response to certain regulatory changes.
- **Liquidity conditions :** The negative correlation of shadow banking growth with term spreads and interest rates becomes considerably stronger after 2008. This shift is in line with the changed role of the term spread in the context of quantitative monetary easing since then. However, there was no direct evidence for the role of capital flows, possibly because their effects are already captured by the other explanatory variables.
- **Institutional cash pools and financial development :** Stronger growth of institutional investors is associated with higher growth in shadow banking, consistent with complementarities and demand-side effects. Alternatively, this could reflect a general trend in financial development.
- **Growing banking sector :** Countries with higher banking sector growth rates tend to experience higher growth of shadow banking, again suggesting complementarities. Alternatively, the results could reflect a general trend in financial deepening driven by other factors.
- **MMFs and investment funds :** Banking growth is not important in explaining the growth of MMFs and the correlation is negative for investment funds, in line with the notion that the latter substitute for, rather than complement, the banking system. However, the growth of MMFs and investment funds is strongly associated with the growth of institutional investors, which supports the cash-pool demand hypothesis. Similarly, the compression of the term spread (capturing search for yield) plays only a small role for MMFs and investment funds.
- **Securitization :** The growth of private-label securitization via SPVs is strongly associated with growth of the banking sector, probably because SPVs are frequently sponsored or owned by banks. As expected, the growth of institutional investors is less correlated with the growth of securitization. Securitization growth is more strongly (and negatively) associated with the term spread than are MMFs. The impact of capital regulations is less important for securitization than for MMFs.

Regulatory arbitrage following the 1988 Basel Accord spurred the growth of securitization in Europe and the United States. The Basel Accord on bank capital rules boosted the securitization of low-risk loan portfolios and the retention of high-risk loans because of a lack of differentiation between high- and low-quality loans. In the late 1980s, regulatory arbitrage also motivated

the introduction of Collateralized Debt Obligations (CDOs) and Structured Investment Vehicles (SIVs). The growth in securitization markets strengthened in the low-interest-rate environment in the mid-2000s, in line with the econometric evidence.

Heightened restrictions on banks, including on deposit rates, seem to be an important driver of shadow banking in China. In response to the rapid growth of bank lending and concerns about inflation, in 2010, the Chinese government placed significant restrictions on the traditional banking system (including more conservative credit quotas). The intervention slowed conventional lending but not off-balance-sheet loan originations.

Regulatory arbitrage and government support encouraged the growth of special-purpose non-bank financial institutions (Sofoles) in Mexico. Similarly, banking activity is complemented in India by non-bank financing companies. These companies are seen by banks with less-developed branching networks as a way to complement credit allocation in semi-urban and rural areas of the Indian economy, in particular to meet their assigned targets for lending to priority sectors. Hence, non-bank financial institutions sometimes are more able than banks to reach out to certain group of borrowers.

While closely analyzing the regulatory landscape, it becomes evident that traditional banks, which were at a regulatory disadvantage as compared to shadow banks even before Basel III, will be further discriminated due to the higher capital and liquidity requirements, with investment banking divisions being most affected. As shadow banks are not the direct subject of the regulatory initiatives, they escape almost unscathed. This regulatory imbalance could drive more and more financial businesses from the traditional to the shadow banking sector, where both investors and financial intermediaries can benefit from cost advantages due to less strict regulations especially around capital and liquidity requirements.

Basel Accords and Regulatory Capital Arbitrage

Arithmetically, banks attempting to boost their Risk-Based Capital (RBC) ratios under the Basel Capital Accord have but two options for achieving that end : (a) increasing the measures of regulatory capital appearing in the numerators of these ratios, or (b) decreasing the regulatory measures of total risk appearing in the denominators (e.g., total risk-weighted assets). Available evidence suggests that in the short run, most banks have tended to react to capital pressures in the ways broadly envisioned by the framers of the Accord. That is, by increasing their capacity to absorb unexpected losses through increased earnings retentions or new capital issues and by lowering their assumed risks through reduction in loans and other footings.

Quite apart from these 'traditional' (on-balance sheet) adjustments, evidence also suggests that in some circumstances banks may attempt to boost reported capital ratios through purely 'cosmetic' adjustments, which do little to enhance underlying safety and soundness. Broadly, such cosmetic adjustments involve artificially inflating the measures of capital appearing in the numerators of regulatory capital ratios, or artificially deflating the measures of total risk appearing in the denominators.

Where permitted by applicable accounting standards or supervisory policies, examples of the former (cosmetic capital adjustments) include devices such as gains trading or under-provisioning for loan loss reserves. Often such actions boost regulatory capital levels temporarily and may not correspond to any real increase in a bank's capacity to absorb future unexpected losses.

The second form of cosmetic adjustment exploits shortcomings in the measures of total risk appearing in the denominators of regulatory capital ratios. In recent years, securitization and other financial innovations have provided unprecedented opportunities for banks to reduce substantially their regulatory measures of risk, with little or no corresponding reduction in their overall economic risks as a process termed Regulatory Capital Arbitrage (RCA). These methods are used routinely to lower the effective RBC requirements against certain portfolios to levels well below the Accord's minimum RBC standard. Even with the same nominal capital standard in place across banks and over

time, the avoidance of regulatory capital requirements through RCA constitutes an erosion of effective capital standards.

The consequences of RCA are several. Foremost, there is a greater likelihood that reported regulatory capital ratios could mask deteriorations in the true financial conditions of banks. Competitive inequities also may emerge to the extent that RCA is not equally accessible to all banks, possibly owing to economies of scale and scope, or international differences in accounting, supervisory, and legal regimes. Available evidence suggests that the volume of RCA activity is large and growing rapidly, especially among the largest banks.

Moreover, with ongoing advances in securitization techniques, credit derivatives, and other financial innovations working to reduce the costs of RCA, these trends remain unabated. Absent measures to reduce incentives or opportunities for RCA, over time such developments could undermine the usefulness of formal capital requirements as prudential policy tools.

Ultimately, RCA is driven by large divergences that frequently arise between underlying economic risks and the notions and measures of risk embodied in regulatory capital ratios. As discussed below, such divergences create opportunities to unbundle and repackage a portfolio's risks in ways that can reduce dramatically the effective capital requirement per dollar of economic risk retained by a bank. Efforts to stem RCA without narrowing or eliminating these divergences as for example, by limiting banks' use of securitization and other risk unbundling technologies as would be counterproductive and perhaps untenable.

In some circumstances, RCA is an important 'safety-valve' that permits banks to compete effectively (with non-banks) in low-risk businesses they would otherwise be forced to exit owing to unreasonably high regulatory capital requirements. Moreover, as evidenced through their widespread use by non-banks, securitization and other risk unbundling technologies appear to provide genuine economic benefits to banks, quite apart from their role in RCA. Lastly, the same shortcomings giving rise to RCA under the Accord also distort bank behavior in other ways, such as discouraging the true hedging of economic risks.

Basel II attempted to align economic and regulatory capital more closely to reduce the scope for regulatory arbitrage. But, there have been huge variations across the geographies (in approaches, deadlines, national discretions, etc.) which again gave rise to regulatory arbitrage. For example, by providing at least three alternative capital calculation methods, Basel II creates differences that do not exist in Basel I. Again, the treatment of non-investment-grade credits under the standardized approach is so different from the treatment under the foundation or advanced Internal Ratings Based (IRB) approach.

When looking at how Basel III will increase stability and safety across the banking sector, it is important to realize that Basel III builds on the requirements of Basel II, and as such, the existing shortcomings of Basel II remains unchanged. It is believed that the new Basel III framework relate to its facilitation of the shadow banking system whilst constraining the banking sector. The new, more stringent capital and liquidity requirements introduced through Basel III are likely to impact the more highly regulated banking sector since it is likely that there will be greater incentives to transact in less stringent regulated sectors such as the shadow banking system or through less stringent regulated capital instruments.

Conclusion

The new capital and liquidity requirements under Basel III reforms, like its predecessors, aims of designing macro-prudential regulation of the financial sector. Even though it is a great improvement, it still carries many of the weaknesses of its predecessors. Therefore, a harmonized set of standards (comprising global and domestic realities), particularly at macro prudential level, is essential to the facilitation of coordination, as well as the aim of achieving the objectives of mitigating systemic risks, regulatory arbitrage practices and facilitating the vital roles of supervisors.

However, regulatory capital arbitrage complicates the problem of designing any new regulatory structure for the financial sector. It implies that capital requirements must apply in some form to the shadow banking system as well as the traditional banking system. Otherwise, certain forms of financial intermediation will simply shift from the traditional to the shadow system. In addition, if the problem we want to manage is systemic risk, then focusing solely on institutions with certain types of charters will not be sufficient, especially as the unregulated ones become bigger and more numerous.

Hence, efforts may continue on 'harmonisation of global standards' which would fetch mitigation of systemic risks through the redress of shadow banking channels and regulatory arbitrage practices, as well as the efficient functioning of new macro prudential frameworks under Basel III. This will ensure facilitating greater financial stability on a macro prudential basis and would not be much prone to regulatory gaps which could foster capital arbitrage and the building up of systemic risks.

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Real Estate Investment Trusts

Globally, units of Real Estate Investment Trusts (REITs) sell like stocks on major exchanges and they invest in real estate directly, either in properties or mortgages. They enjoy special tax considerations and typically offer investors high yields as well as a framework for wider investor participation in real estate. Most of the REIT earnings are distributed to shareholders regularly as dividends. According to the European Public Real Estate Association's (EPRA) Global REIT Survey 2014, 37 countries worldwide have REITs or 'REIT-like' legislations in place. The structure of REITs varies across countries and it is constantly evolving. Since their introduction in Asia in the early 2000s, REITs have been adopted across the continent, growing into a market worth over USD 140 billion.

REITs are mainly of three types : Equity REITs, Mortgage REITs and Hybrid REITs. Equity REITs invest in and own properties and their revenues come principally from rents. Mortgage REITs invest in real estate and mortgage backed securities and their revenues are generated primarily as interest income that they earn on the mortgage loans. Hybrid REITs combine the investment strategies of Equity REITs and Mortgage REITs by investing in both properties and mortgages. Like any other investment, investments in REITs have their own set of risks. Mortgage REITs (mREITs) are involved in lending money to owners of real estate and buying (mostly agency backed) mortgage backed securities (MBS) and their business model layers on other risks that could amplify market dislocations. Some of these are : a) Funding and liquidity risk, b) Refinancing and rollover risk, c) Maturity mismatch risk, d) Convexity risk, e) Concentration and correlation risk and f) Market risk. These risks, in turn, are inter-related and their presence can lead to a fire sale event. However, in India, the current REIT regulations do not provide for mREITs and are aimed at developing the real estate sector in a robust manner.

Source : Financial Stability Report (Including Trend & Progress of Banking in India 2013-14) December 2014.

Basel-III bonds - How effective are they in shoring up capital adequacy?

Dr. Madhavankutty. G. *

The aftermath of the global financial crisis that led to the collapse of 'too big to fail' institutions exposed the underlying inadequacies of Basel-II framework. By now, it is amply clear that high leverage and lack of a robust and effective supervisory mechanism was the root cause for the unfolding of the crisis of such a magnitude. A slew of debates started doing the rounds as to why and how the crisis originated. The greed and lust of Wall Street managers were also cited as a reason. Accusations were directed at rating agencies also. Whatever be the cause, it exposed three major weaknesses of the global financial architecture in existence at that point of time, *viz.,* the fallibility of exotic instruments such as Collateralized Debt Obligations, absence of a robust supervisory mechanism and rampant mis-selling.

It is also pertinent to note that entire world of finance took serious note of the crisis not the least because it led to the collapse of too big to fail institutions but due to its contagious and systemic nature. The most important lesson learnt was the extent to which institutions were vulnerable to financial events. The need for a viable alternative to Basel-II was unanimously appreciated and consequently, Basel-III came into force. In this article, we will bring forth the salient features of Basel-III bonds and their efficacy in shoring up capital adequacy of the banking sector.

Basel-III bonds- A brief Overview

Under Basel-II, the common forms of bond issuance by banks were through subordinated debt bonds. Perpetual debt Instruments were also available under Basel-II format as Tier 1 capital. Basel-III framework also provides for raising capital through non equity instruments known as Additional Tier 1 (AT-1) instruments. Thus, under the Basel-III regime also, both Tier 1 bonds as well as Tier II bonds can be raised. However, Basel-III complaint bonds (AT-1 and Tier II) have certain in built features aimed as a protection against excessive risk taking which were absent in Basel-II framework.

The major difference between the new bank capital and older versions is that Basel III compliant bonds can be converted into equity (shares) or even written off at the discretion of regulators, if bank capital falls below a predetermined threshold known as the Point of Non Viability (PONV) in technical jargon. This means that investors could potentially lose all of their money, if and when a regulator determines that a specific bank has reached the point of non-viability. The difference is that existing subordinated debt is written off only in the event of actual bank failure. The Basel Committee on Banking Supervision (BCBS) has provided flexibility for regulators to determine the trigger as to when the Point of Non Viability clause sets in.

A non viable bank is one which, owing to its financial and other difficulties, may no longer remain a going concern on its own in the opinion of the regulator unless appropriate measures are taken to revive its operations. In such a situation, raising the Common Equity Tier I capital of the bank should be considered as the most appropriate measure. Such measures would include write-off / conversion of non-equity regulatory capital into common shares in combination with or without other measures as considered appropriate by the RBI. Point of Non-Viability (PONV) for all Basel III capital instruments, as stated in the former para would be the earlier of 1) Decision by RBI for a conversion / permanent write-off, without which the firm would become non-viable or 2) Decision by relevant authority to make a public sector injection of capital, or equivalent support, without which the firm would have become non-viable.

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According to RBI's initial estimates, Indian banks need to raise about ₹1.9 trn of AT1 securities by March 2019.

Salient features with regard to Basel-III bonds in India

Before analyzing in detail Basel-III bonds and their features, it would be pertinent to have a brief view of the Basel-III capital requirement in India, as formulated by the Reserve Bank of India.

Particulars	Basel-II (%)	Basel-III (%)
Minimum common equity Tier 1 Ratio	3.6	5.5
Capital Conservation Buffer	Nil	2.5
Minimum common equity Tier 1 ratio	3.6	8.0
Additional Tier 1 capital	2.4	1.5
Minimum Tier 1 capital	6.0	9.5
Tier II capital	3.0	2.0
Minimum total; capital ratio	9.0	11.5
Source : Reserve Bank of India (RBI)		

Thus, banks are mandated to maintain a significantly higher Tier 1 capital under Basel-III regime. Minimum Total capital requirement is also higher at 11.5% under Basel-III *vis-à-vis* 9% under Basel-II framework. RBI guidelines on Basel III introduced stringent loss absorption clauses so that loss absorption kicks in well before an actual default which necessitates injection of funds by the state. Both Tier I and Tier II instruments have significant loss absorption features. However, Tier I instruments are meant to absorb losses on an on going basis and hence loss absorption trigger kicks in early. Tier II instruments also have loss absorption features. These are meant to be invoked only at the point of non-viability.

Key Features of Tier I Instruments under Basel II and III, and Implications

Tier 1 Bonds (Basel II)	Additional Tier 1(Basel-III)	Implications
Bank shall not be liable to pay interest if its capital adequacy falls below the minimum requirement or interest payment will result in bank's CRAR to go below minimum regulatory requirement. However the bank may pay interest with prior approval of the RBI when the impact of such payment may result in net loss or increase in net loss, provided the CRAR remains above the regulatory norm.	Basel III capital instruments, upon the occurrence of the trigger event, at the option of RBI, will have to be either permanently written off, or converted into Common Equity. Two pre-specified triggers for Basel III compliant Additional Tier I (AT1) instruments; a lower pre-specified trigger at CET1 of 5.5% of Risk Weighted Assets (RWAs) will remain effective before March 31, 2019, after which this trigger would be raised to CET1 of 6.125% of RWAs for all such instruments. Capital Conservation (by restricting dividend payouts etc.) to kick in once Common Equity Tier I drops below 8%. If a bank wants to make payments in excess of the amount that the norm on capital conservation allows, it would have the option of raising capital for such excess amount. Bank must have full discretion at all times to cancel payments. Cancellation of discretionary payments not to be an event of default.	Since discretionary payments on other Tier I capital instruments would be restricted in case Common Equity falls below 8%, the threshold for default on Basel III Tier I interest could be 8% Common Equity. This essentially marks a shift of default trigger from breach of overall capital adequacy of 9% (under Basel II) to breach of Common Equity Tier I of 8% and 5.5%/6.125% as the case may be for principal conversion or write-off under Basel III. At a first glance itself, the probability of breaching the Basel III Common Equity threshold is likely to be higher than that of breaching overall 9% capital adequacy under Basel II. Though Basel II provisions might well lead to permanent loss on interest / coupon payments, there was no impact on principal. However, Under Basel III, severity of loss is likely to be significantly higher and permanent as : 1. There may be a permanent loss on coupon once capital conservation kicks in 2. PONV trigger could lead to Write-off / Conversion prior to any public injection of capital. Moreover, the loss could be permanent on Additional Tier I when there is public injection of funds on PONV invocation

As the above table highlights, the loss absorption capacity of Additional Tier I instruments under Basel III is higher than that of Basel II Tier I instruments. While there was no clause on write-off / conversion in the earlier instruments, the new instruments would have to be converted or written off even when the bank concerned is far from being totally unviable as the trigger starts at 5.5% / 6.125% under Basel III. Further, the trigger for non-payment of coupon on Additional Tier I may be breach of the 8% Common Equity unlike 9% overall capital adequacy under Basel II. Additionally, the provisions under PONV could translate into permanent loss for Additional Tier I investors in case of injection of public funds under PONV. Thus Basel-III framework is far stringent and imposes greater reputational risk on issuers compared to Basel-II instruments.

The regulatory framework has a host of implications for Public Sector banks desirous of raising capital through AT 1 instruments. Traditionally, PSBs look for capital support from the Government. However, as the features of AT 1 instruments suggest, the trigger would start long before an actual capital infusion by the Government due to the capital conservation trigger of 8% and PONV trigger of 5.5 / 6.125%. For private sector banks also, with fairly higher capital and higher levels of profitability, the probability of a drop in Common Equity levels to 8% is relatively higher than the likelihood of default on conventional instruments.

By implication, banks scoring relatively low on these parameters would have a relatively higher probability of capital erosion in future.

Key Features of Tier II Instruments under Basel II and III, and Implications

Lower Tier II bonds	Upper Tier II bonds	Basel-III Tier Ii bonds	Implications
Subordinated to depositors on liquidation	Bank shall not be liable to pay interest if its CRAR is below the minimum requirement or interest payment will result banks' CRAR to go below minimum regulatory requirement. However, the bank may pay interest with prior RBI approval when the impact of such payment may result in net loss or increase in net loss, provided the CRAR remains above the regulatory norm.	Basel III capital instruments upon the occurrence of PONV, at the option of RBI, may either be written off, or converted into Common Equity.	Probability of default for Basel III compliant Tier II bonds is likely to be higher than that for Basel II Lower Tier II instruments; However, it is likely to be significantly lower than that for Upper Tier II bonds as the probability of PONV trigger invocation is likely to be much lower than the probability of a bank breaching 9% capital adequacy.
No clause on any loss absorption feature	No clause on any loss absorption feature.	PONV for all Basel III capital instruments would be the earlier of : - Decision by the RBI for conversion / permanent write-off, without which the firm would become non-viable; - Decision by relevant authority to make a public sector injection of capital, or equivalent support, without which the firm would become non-viable.	Under Basel III, severity of loss is likely to be significantly higher as PONV trigger could lead to write off / conversion prior to any public sector injection of capital.

The features are almost similar to that of AT-1 instruments. Basel III Tier II bonds issued by banks will provide to their depositors and senior creditors an additional layer of protection. According to the Basel III guidelines issued by RBI, Basel III compliant Tier II bonds are expected to absorb losses when the Point of Non-Viability (PONV) trigger is invoked. As and when the PONV trigger is invoked, Tier II instruments, at the option of RBI, will be either written off or converted into Common Equity.

Traditionally, Government of India (GoI), as a shareholder, has been a major source of financial support to banks. Since, GOI would not like to see PONV being breached in the case of PSBs, it is expected to infuse equity in public sector banks well in advance so that their capital remains well above the PONV triggers. Further, considering GoI's stance on maintaining 8% Tier I capital and the likely severe restrictions on banks' operations in case PONV is invoked, the probability of the trigger getting breached would be quite low.

A word of two needs to be mentioned about capital conservation buffers. This is a new prudential measure under Basel-III framework. According to RBI, banks are required to maintain a capital conservation buffer of 2.5%, within the overall Common Equity Tier I capital (CET 1), which is above the regulatory minimum Common Equity capital requirement of 5.5%. There are restrictions on the distribution of capital such as paying dividend or bonus etc. in case the conservation capital level falls below 2.5%. This is summarised below :

Common equity Tier 1 ratio (%)	Minimum capital conservation buffer (%)
5.5-6.125%	100%
>6.125-6.75%	80%
>6.75-7.375%	60%
>7.375-8.0%	40%
>8.0%	0%

However, RBI may allow some distribution of earnings by banks that are in breach of the proposed capital conservation buffer. If a bank wants to make payments in excess of the amount that the norm on capital conservation entails, it would have the option of raising capital for such excess amount. This issue would be discussed with the bank's supervisor as part of the capital planning process.

Now, the significant question is how effective are these instruments in capital raising. A major advantage of these bonds is banks are able to raise capital without seeking government support. This makes the instrument handy. Moreover, in a scenario of falling yields, these bonds would be highly attractive to banks, reducing their cost of funds. Moreover, investors would be willing to invest due to the inherent sovereign guarantee in the case of PSBs. Though PONV clause is inserted, no public sector banks is expected to default on their bonds.

The recent RBI notification permitting call options on AT-1 bonds after every five years instead of the 10 year clause in vogue initially will further enhance appetite for these bonds since coupon will decline. Bank of India and IDBI Bank have come out with Basel-III bonds with issue size of ₹2,500 Cr which were fully subscribed. This indicates it is possible for these bonds to have a market. The latest rules also permit banks to issue Tier 1 bonds to retail investors which were not permitted earlier provided they understand the risks. Also, RBI said that if a bank has met its minimum capital requirement already, the lender will be free to admit as much of additional capital through these instruments as they can raise. Earlier, RBI had imposed a limit on raising such additional capital.

We would be well advised to remember that these bonds are at a nascent stage. Moreover, in a country like India where the corporate bond market is not very well developed, there is a requirement for a proper institutional mechanism for these bonds to achieve optimum success. While a couple of banks started off with their issuances, a major stumbling block is the absence of major players like insurance majors, pension and provident funds in this market due to restrictions imposed by their respective regulators. Hence, it is imperative to have wide range of deliberations to ensure that systematically important players are attracted to these bonds.

A significant feature of these bonds is investors will also share significant risks since in the event of a PONV, it may as well be written off. Thus, there is diversification of risk away from a pure bailout which involves taxpayer money. This will result in better due diligence for these bonds.

Though this is a new and novel instrument for capital raising which imposes significant stakes for both the issuer and the investor, certain grey areas still remain. For instance, there is limited international experience to draw lessons on the efficacy of this instrument. Asian banks are significantly well capitalised than their European counterparts and may require far lower capital. However, if the Asian banks stay complacent, European Banks will soon exhaust the market for these bonds. Hence, there is a need to seize the moment. Indian banks should tap the market now as it is the most opportune time due to falling interest rates.

Though these bonds come with an in built advantage of a sovereign rating, the yields on these instruments are quite high. For instance, Industrial and Commercial Bank of China (ICBC) raised AT-1 bonds at a coupon of 6%; In India, these bonds carried yields between 10.6-11% at the time of issuance, signifying some risk perception among investors. Moreover, the very fact that some of these banks received an instantly high rating may not go well with some investors since asset quality in Indian banking sector is a matter of serious concern.

A serious area is the absence of big players such as pension and insurance funds in these bonds. They are constrained by regulations and unless some leeway is offered to them, these bonds may not pick up much from the initial stage due to lack of market appetite. Yet another issue is the risk averse nature of retail investors which is an aspect plaguing not just Basel-III issuers but the corporate bond market in India in general. The permission to offer Basel-III bonds to retail investors, is at best, only a small step. The necessary and sufficient condition for which is a developed corporate bond market.

In a developing economy like India, well poised to hit 8% growth trajectory in a couple of years, the role of bank credit is extremely important. Comparative analysis of a key metric like the credit GDP ratio shows that we are below other economies such as China. When credit off take happens, capital requirement increases, making it imperative for banks to provide due attention to capital raising efforts. However, a solace would be better recoveries and lower non-performing assets when the economy improves. PSBs would be better placed in this regard since bulk of their exposure to infrastructure projects would start earning revenues.

The new bank debt can play a leading role in buttressing global financial system against future systemic risks but it also adds a layer of complexity to the task of analysing credit quality. In addition to fundamental company research, an analyst must factor in assumptions about regulation, jurisdiction and the actions of ratings agencies. Given this uncertainty and the fact that Basel III-compliant capital could even be written off by Asian regulators in the event of “stress”, investors should be cautious about these bonds. In Australia, for example, many of these new instruments trade on the stock exchange, sending a clear signal to investors that they are an equity-type investment.

Despite all the concerns, Basel-III compliant bonds are an additional tool for banks to raise capital though they come attached with more onerous conditions. The insertion of Point of Non Viability clause is in itself a major development. While mandating caution among investors, this clause also imposes significant reputation risks on banks. This, in itself, should exhort banks to be cautious in their financial management.

Basel-III : Implementation in Indian Banking Industry

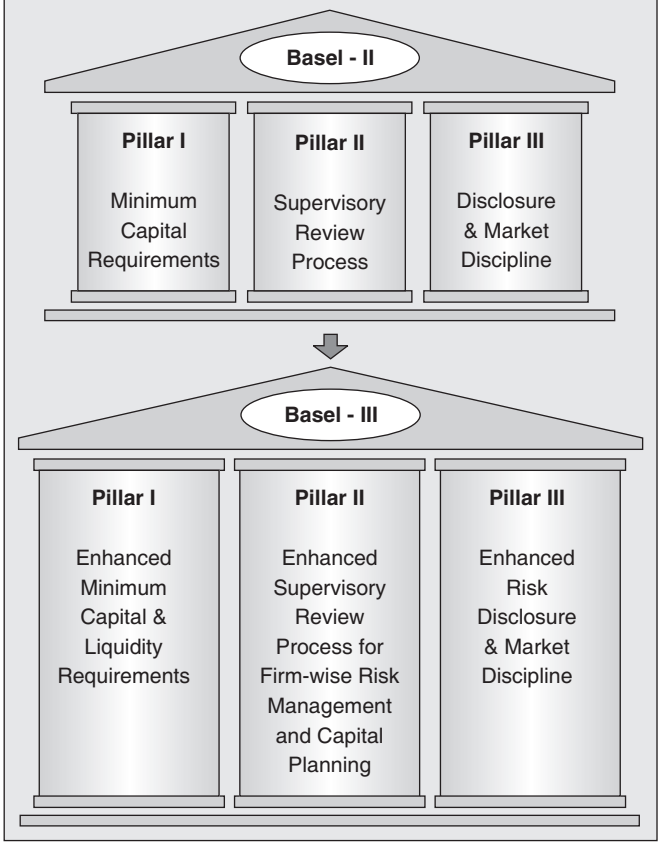
Nagamani. S. *

Year 2014 marks the sixth anniversary of the collapse of Lehman Brothers which in popular perception was the trigger for the biggest financial crisis of our generation. Banks and bankers have been at the heart of crisis. Enhancing the banking sector's safety and stability has been the thrust of post crisis policy reforms. One segment of reforms that has taken a final shape is the BASEL III framework for bank capital regulation. The final package was approved by the G-20 and the roll out has begun. RBI issued the BASEL III guidelines on capital regulation in May 2012 after extensive consultations with all the stake holders.

Conceptual issues :

BASEL III represents an effort to fix the gaps and lacunae in BASEL II that came to light during the crisis as also to reflect other lessons of the crisis of 2008. Basel III is an evolution rather than a revolution for many banks. The objectives of BASEL III are to minimize the probability of recurrence of a crisis of such magnitude. BASEL III has set its objectives to improve the shock absorbing capacity of each and every individual bank as the first order of defence. In the worst case scenario, and if it is inevitable that one or a few banks have to fail, BASEL III has measures to ensure that the banking system as a whole does not crumble and its spill over impact on the real economy is minimized. Therefore, BASEL III has some micro-prudential elements so that risk is contained in each individual institution; and a macro- prudential overlay that will **lean against the wind** to take care of issues relating to the systemic risk. A pictorial comparison between Basel II & III is depicted in figure-1 :

Figure-1 : Evolution of Basel II to Basel III



(Source : A public document of Moody's Analytics)

It can be construed from the above that BASEL III does not jettison BASEL II; on the contrary, it builds on the essence of BASEL II- the link between the risk profiles & capital requirements of individual banks.

The Basel committee published its BASEL III rules in December 2010.The building blocks of BASEL III are :

- Higher & **better** quality capital;
- Capital buffers which would be built up in **good times** so that they can be drawn down in times of **stress**;

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- An internationally harmonized leverage ratio to **constrain excessive** risk taking;
- Minimum global **liquidity** standards;
- Stronger standards for supervision, public disclosure, and **risk management**.

Higher Capital Requirement :

		As a percentage of Risk Weighted Assets	
		Basel II	**Basel III**
A=(B+D)	Minimum Total Capital	8.0	8.0
B	Minimum Tier 1 Capital	4.0	6.0
C	Of which Minimum Common Equity Tier 1 Capital	2.0	4.5
D	Minimum Tier 2 Capital (within Total Capital)	4.0	2.0
E	Capital Conservation Buffer (CCB)	-	2.5
F=C+E	Minimum Common Equity Tier 1 Capital + CCB	2.0	7.0
G=A+E	Minimum Total Capital + CCB	8.0	10.5

We can see from the table above, BASEL III requires higher and **better quality** capital. The minimum total capital remains unchanged at 8 percent of Risk Weighted Assets (RWA). However, BASEL III introduces a capital conservation buffer of 2.5 percent of RWA over and above the minimum capital requirement, raising the total capital requirement to 10.5 percent against 8.0 percent under BASEL II. This buffer is intended to ensure 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 buffer is not part of regulatory minimum, however, the level of the buffer will determine the dividend distributed to shareholders and the bonus paid to staff. There are also other perceptions regarding the quality of capital within the minimum total so that capital is able to absorb losses, and calling upon the tax payers to bear the burden of bailout becomes absolutely the last resort.

Capital Buffers : (Counter Cyclical Buffer) : In addition to the capital conservation buffer, BASEL III introduces another capital buffer (BASEL II failed to demand adequate loss absorbing capital to cover market risk) in the range of 0 to 2.5 percent of RWA which could be imposed on banks during periods of excess credit growth. CCB will be phased-in over four years at 0.625% (0.625% X 4=2.5%) per year, commencing from 31.03.16. Banks are required to meet this buffer with Common Equity Tier 1 capital or other fully loss absorbing capital.

Also, there is a provision for a higher capital surcharge on Systematically Important Banks (SIB). Banks have to ensure that their countercyclical buffer requirements are calculated and publicly disclosed at least with the same frequency as their minimum capital requirement. 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. Ratings are seen as embodying an assessment of the risk of loss due to the default of the counter-party and are based on both quantitative and qualitative information. Besides, there is a new capital requirement known as CVA (Credit Valuation Adjustment) risk capital charge for OTC derivatives to protect banks against the risk of decline in the credit quality of the counter party.

Liquidity Standards & Leverage Ratios : The introduction of Leverage ratio has the objective of protecting against system-wide build-up of leverage that result in destabilizing unwinding process during stress. It also protects against piling up on 'low risk assets', which may not remain as such under extreme situations producing systemic risk. BASEL III addresses both potential short terms liquidity risk and longer term structural liquidity mismatches in banks balance sheets. To cover short term liquidity stress, banks will be required to maintain sufficient high quality unencumbered liquid assets to withstand any stressed funding scenario over a 30 day horizon as measured by the Liquidity Coverage Ratio (LCR).

Definition of Liquidity Coverage Ratio :

$$\textbf{Liquidity Coverage Ratio (LCR)} = \frac{\text{Stock of high-quality liquid assets}}{\text{Total Net Cash outflows over the next 30 calender days}} \geq 100$$

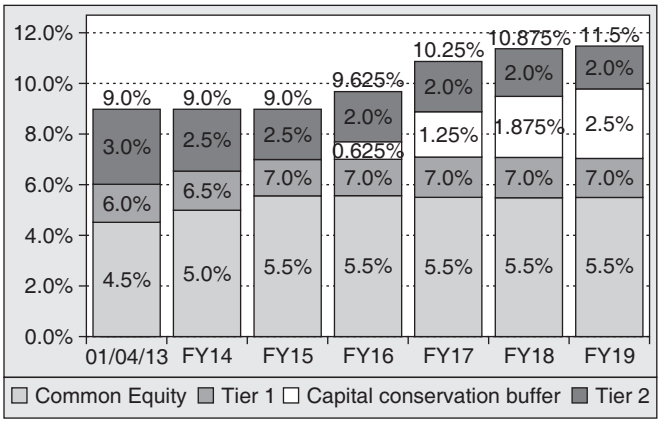
To mitigate liquidity mismatches in the long term, banks will be mandated to maintain a Net Stable Funding Ratio (NFSR). The NFSR mandates a minimum amount of stable sources of funding relative to the liquidity profile of the assets, as well as the potential for contingent liquidity needs arising from off-balance sheet commitments over a one year horizon. The NFSR is aimed at encouraging banks to exploit stable sources of funding.

Provisioning Norms : The Basel Committee recommends for the adoption of an 'expected loss' based measure of provisioning which captures actual losses more transparently. It is also less pro-cyclical than the current 'incurred loss' approach. The expected loss approach for provisioning will make financial reporting more useful for all stake holders, including the regulators and supervisors.

Disclosure Requirements : The disclosures made by the banks are important for market participants to make informed decisions. At present the market disclosures made by banks are neither appropriate nor sufficiently transparent to make any comparative analysis. To address this, BASEL III requires banks to disclose all relevant details, including any regulatory adjustments, as regards the regulatory capital of the bank.

RBI's Guidelines on BASEL III Transitional Arrangements :

In order to ensure smooth migration to BASEL III without aggravating any near time stress appropriate godfathering and transitional arrangements have been suggested. In view of these large scale reforms and their impact, BASEL committee planned to implement the changes over period of time, starting from April 2013 to March 2019 as under :



Do the Indian Banks need BASEL III?

In the present day globalised world it is difficult for any local financial and economic system to completely insulate itself from the global economic shocks. India integrates with the rest of the world, as increasingly Indian Banks go abroad and foreign banks come on to our shores; and India cannot afford to have a regulatory deviation from Global Standards. Any deviation will hurt us from both by way of perception and also in actual practice.

- Perception of a lower standard regulatory regime will put Indian banks at a disadvantage in global competition;
- Deviation from BASEL III will also hurt us in actual practice since BASEL III provides for improved risk management systems in the banks.

Regulator's (RBI) view : It is important that Indian Banks have the cushion afforded by the risk management systems to withstand shocks from external systems, especially as they deepen their links with global financial system going forward. It needs to be further appreciated that if the implementation of BASEL III is not consistent across jurisdictions there would be a race to the bottom to make use of arbitrage opportunities which nobody wins.

What banks are expected do in transition towards BASEL III?

BASEL III is just a part of the financial sector reforms agenda being pursued by G20. BASEL III with both micro prudential elements and a macro-prudential overlay will take care of individual banks and also of issues relating to the systemic risk. There is a need for capacity building within the banks, and also in the RBI, which is the regulator, to efficiently implement BASEL III. By far the most important reform is that there should be a radical change (of perception) in banks' approach to risk management. 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 has three requirements :

- A change in perception from looking upon the capital framework as a compliance function to seeing it as a necessary pre-requisite for keeping the bank sound, stable and therefore profitable;
- Deeper and broad based capacity in risk management;
- Adequate and good quality data.

There could be some initial cost in implementation of BASEL III, but the long-term benefits will be immense as it would reduce the probability of banking crises (and unexpected failures through risk)

SBI has been a pioneer and trend setter in the transition to BASEL III in Indian Banking Industry. The bank has implemented BASEL III as on 1st April 2013. State Bank of India has been leading the banking sector in complying to BASEL II in the past and Basel III in the present. SBI Position as on September 2014 is as under :

Capital Component	Basel II		Capital Component	Basel III	
	Amount (₹ in Cr)	%		Amount (₹ in Cr)	%
			CET1	1,07,384	9.53%
			AT1	997	0.09%
Tier 1	1,11,564	10.01%	Tier 1	1,08,381	9.62%
Tier 2	31,836	2.86%	Tier 2	30,600	2.71%
Total CAR	1,43,400	12.87%	Total CAR	1,38,980	12.33%
Leverage ratio					**4.94%**

One of the significant challenges posed by Basel III apart from the increased capital standards is that of creating a new risk management culture and effective data management systems. The risk management departments would require quality data that is clean and accurate. In effect, Basel III is changing the way the banks look at their risk management functions and might imply them to go for robust risk management framework to ensure a true enterprise risk management. The guidelines issued by RBI on Advanced Measurement Approach and Supervisory Guidelines on Principles of Sound Management of Operational Risk (PSMOR) issued by Basel Committee on Banking Supervision (BCBS) have emphasized the need to put in place Change Management Framework as part of Operational Risk Management Framework (ORMF). In accordance with the PSMOR, banks are required to ensure that the risk management control infrastructure is appropriate to assess inherent risk of the products, activities, processes and systems through its Change Management Framework.

Other issues such as corporate governance, compensation practices, and resolution regimes; enhancing the regulatory and supervisory framework for global and domestic Systemic Important Banks (SIBs); improving the OTC derivatives markets; and regulation of shadow banking system are engaging the attention of Financial Stability Board (FSB) and Basel committee. The macro-prudential framework under BASEL III is still untested and would need continuous research, monitoring, and experience sharing among the regulators to ensure its effective implementation.

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Implementation of Basel III regulations - New Generation Private Sector Banks

P. S. Khandelwal *

Over the past century, economic and financial crisis of global magnitude have led to new and improved regulatory approaches for bank management and supervision. Nearly four decades ago the world economy witness breakdown of the then prevalent system of exchange rates that disrupted the global financial markets. This led to establishment of an international forum for the purpose of coordination among various nations for improvement in supervisory knowhow and improvement in banking supervision in various nations. This forum known as Basel Committee on Banking Supervision has over last four decades worked on various areas and issued several guidelines covering diverse aspects of banking supervision. Its most significant work is in the area of capital adequacy and risk management in banks.

Evolvement of Basel Regulations

Basel I

During 1980s Latin American debt crisis the financial strength of various international banks came under stress and became weaker. Divergence in banking regulations prevalent in different countries made the situation more difficult. This led to formulation and approval of Basel Capital Accord in 1988 that called for a minimum capital ratio of capital to risk-weighted assets of 8% to be implemented by the end of 1992.

In 1996, Market Risk Amendment was added to the 1988 Accord that was to take effect at the end of 1997. This added a capital requirement for the market risks arising from banks' exposures to foreign exchange, traded debt securities, equities, commodities and options, and allowed to use internal models (value-at-risk models), subject to strict quantitative and qualitative standards.

Basel II : the New Capital Framework

In 2004, comprehensively revised framework was released that comprised three pillars : (i) Minimum capital requirements based on expanded rules; (ii) Supervisory review of capital adequacy and internal assessment process; and (iii) Disclosure requirements to strengthen market discipline. This was aimed at improved correlation between regulatory capital and underlying risks in the environment of continuing financial innovation. The focus, however, was primarily on the banking book. In June 2006, a comprehensive framework for treatment of banks' trading books was added. Later, 'Principles for Sound Liquidity Risk Management and Supervision' were also released which ironically coincided with the failure of Lehman Brothers.

Sub-prime Crisis

The widely known sub-prime crisis that brewed in the US and grew to engulf the entire global community had its seeds in too much borrowing and flawed financial modeling. Financial products like Collateralized Mortgage Obligations (CMOs) and Credit Default Swap (CDS) led to widespread effects to other sectors of the economy, and on financial markets as a whole. So intense was the effect of sub-prime crisis that trust eroded sharply in the financial markets leading to severe liquidity crunch, and also a spate of bank failures apart from the notable failure of Lehman Brothers, and driving some of the largest banks to near collapse situation. There was a deep recession in the US and the global economy went into free-fall.

The four major factors identified as the primary cause for this situation are :

i) Higher leverage increasing sensitivity of the financial system.

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ii) Wider maturity mismatch in securities portfolios.

iii) Financial innovation of opaque financial instruments and markets increasing information asymmetries.

iv) Higher proportion of incentive-based compensation.

The crisis led to rethinking on some aspects of the Basel framework, especially the measures and treatment of risk. Favored treatment to certain asset categories, internal risk measures, risk based on credit ratings all were used to facilitate riskier asset allocation than that would be acceptable to the regulators.

Basel III

Sub-prime crisis prompted a comprehensive relook at Basel framework and that led to release of 'Basel III : International framework for liquidity risk measurement, standards and monitoring' and 'Basel III : A global regulatory framework for more resilient banks and banking systems', in December 2010. These have revised and strengthened the three pillars of Basel II. Several new features also have been introduced capital conservation buffer, countercyclical capital buffer, leverage ratio, liquidity coverage ratio, and additional measures for systemically important banks. Besides certain qualitative changes have been made in the capital requirements, namely certain capital instruments have been derecognized, some new types of capital instruments have been included, and stipulations for Common Equity in addition to that for Tier I capital have been added.

The revised capital requirements are phased over 2013 to 2017. Simultaneously, the capital instruments that do not qualify under the new framework will be phased out though over a longer period of 10 years. The capital ratio requirements are briefly indicated below.

	Regulatory Capital	As % to RWAs	Phasing
(i)	Minimum Common Equity Tier 1 Ratio (CET 1)	5.5	1/4/2013 to 31/3/2015
(ii)	Capital Conservation Buffer (Common Equity)	2.5	31/3/2016 to 31/3/2019
(iii)	Minimum CET 1 Ratio + Capital Conservation Buffer [(i)+(ii)]	8.0	31/3/2016 to 31/3/2019
(iv)	Additional Tier 1 Capital (Maximum)	1.5	1/4/2013 to 31/3/2015
(v)	Minimum Tier 1 Capital Ratio [(i) +(iv)]	7.0	1/4/2013 to 31/3/2015
(vi)	Tier 2 Capital	2.0	1/4/2013 to 31/3/2015
(vii)	Minimum Total Capital Ratio (MTC) [(v)+(vi)]	9.0	1/4/2013
(viii)	Minimum Total Capital Ratio + Capital Conservation Buffer [(vii)+(ii)]	11.5	31/3/2016 to 31/3/2019

Phasing arrangements for other additional parameters are as follows :

a) Leverage Ratio : Tier I leverage ratio has been stipulated as min. 3% during 1/1/2013 to 1/1/2017. This is proposed to be reviewed by mid - 2017 and the revised threshold will be made effective from 1/1/2018.

b) Liquidity Coverage Ratio : This is effective from 1/1/2015 at 60%, and is required to be increased gradually to 100% as on 1/1/2019.

c) Net Stable Funding Ratio : This will be Minimum standard to be introduced by 1/1/2018

New Generation Private Sector Banks (NGPSB)

As a part of liberalization measures taken in India during nineties of the last century, more than four decades after nationalization of banks, new banks were permitted to be set up in the private sector. Ten banks were set up in two batches, nearly ten years apart. Of these, three banks viz. Global Trust Bank, Times Bank, and Centurion Bank were merged into other new generation private sector banks as their sustainability had become difficult. One of these banks was placed under moratorium as its financial condition had deteriorated precariously. Other two banks too faced merger with other banks, as their sustenance was doubtful or challenging. One third of new generation private sector banks met an early end. Besides, by virtue of reverse merger of IDBI with IDBI Bank it moved from private sector to public sector category. Separately, Development Credit Bank joined this group by virtue of conversion of Development Co-operative Bank.

The aggregate total assets and total liabilities of the seven new generation private sector banks had a share of 16.11% and 20.60% respectively in aggregate total assets and total liabilities of all scheduled commercial

banks (ASCB) as at 31st March 2014 was (Refer Table-1 and Chart-I). Aggregate capital of NGPSB in aggregate capital of ASCB was 6.74% and the share of aggregate reserves and surplus was 20.60%.

to capital. All seven banks are compliant with the prescribed level of CRAR. As against the regulatory minimum of 9%, the CRAR for these banks ranged from 12.96% to 16.64%. Of the seven banks, four had

Table-1 : Assets & Liabilities of New Generation Pvt. Sector Banks (As at 31st March 2014) (₹ in million)

Banks	Investments	Advances	Total Assets	Capital	Res. & Sur.	Deposits	Borrowings	Total Liabilities
Axis Bank	11,35,484	23,00,668	38,32,449	4,698	3,77,506	28,09,446	5,02,909	38,32,449
DCB Bank	36,342	81,402	1,29,231	2,503	9,036	1,03,252	8,602	1,29,231
HDFC Bank	12,09,511	30,30,003	49,15,995	4,798	4,29,988	36,73,375	3,94,390	49,15,995
ICICI Bank	17,70,218	33,87,026	59,46,416	11,550	7,20,583	33,19,137	15,47,591	59,46,416
IndusInd Bank	2,15,630	5,51,018	8,70,259	5,256	85,173	6,05,023	1,47,620	8,70,259
Kotak Bank	2,54,845	5,30,276	8,75,853	3,852	1,18,985	5,90,723	1,28,956	8,75,853
Yes Bank	4,09,504	5,56,330	10,90,158	3,606	67,611	74,1,920	2,13,143	10,90,158
NGPSB	**50,31,534**	**1,04,36,723**	**1,76,60,362**	**51,241**	**21,80,700**	**1,59,16,937**	**32,61,912**	**2,25,88,102**
ASCB	**2,88,28,533**	**6,73,52,316**	**10,96,34,745**	**7,60,674**	**72,98,320**	**8,53,31,381**	**1,10,08,185**	**10,96,34,745**
NFPSB / ASCB (%)	**17.45**	**15.50**	**16.11**	**6.74**	**29.88**	**18.65**	**29.63**	**20.60**

NFPSB - New Generation Pvt. Sector Banks; ASCB - All Scheduled Commercial Banks

(Source : Statistical tables Relating to Banks in India as at 31st March 2014 - RBI)

Chart-I : Total Assets & Total Liabilities of New Generation Private Sector Banks in India
(As at 31st March 2014)

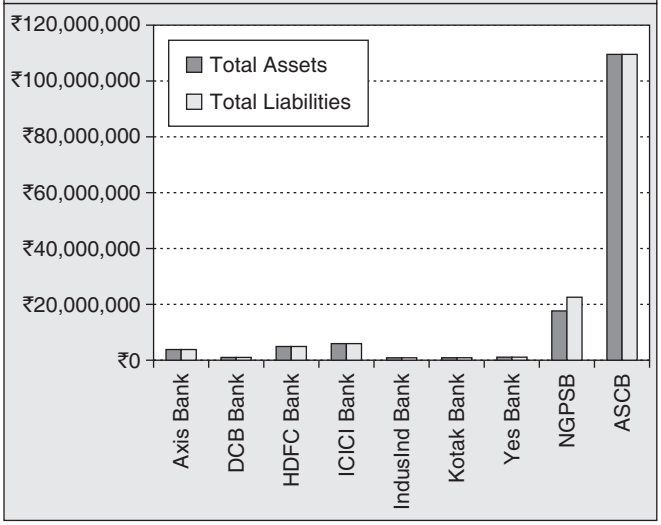


Table-2 : Capital Adequacy Ratios (Solo) As at September 2014
(Figures are in percentage)

Bank	CET 1	Addl. T1	T1	T2	CRAR
Prescribed (Min / Max)*	5.50	1.50	7.00	2.00	9.00
Axis Bank	11.51	0.00	11.51	3.33	14.84
DCB Bank	12.16	0.00	12.16	0.88	13.04
HDFC Bank	11.80	0.00	11.80	3.90	15.70
ICICI Bank	11.98	0.00	11.98	4.66	16.64
IndusInd Bank	12.03	0.00	12.03	0.93	12.96
Kotak Bank	15.50	0.00	15.50	0.90	16.40
Yes Bank	11.00	0.40	11.40	5.20	16.60

** Effective end-March 2015. Minimum levels for CET1 and T1. Maximum levels for Addl. T1 and T2.CET 1 - Common Equity Tier 1; Addl. T1 - Additional Tier 1; T1 - Total Tier 1; T2 - Total Tier 2; CRAR - Capital to Risk Weighted Assets Ratio)*

(Source : Disclosures under Basle III Regulations hosted on the websites of respective banks)

Pillar I

Capital Adequacy

Capital Adequacy Ratio

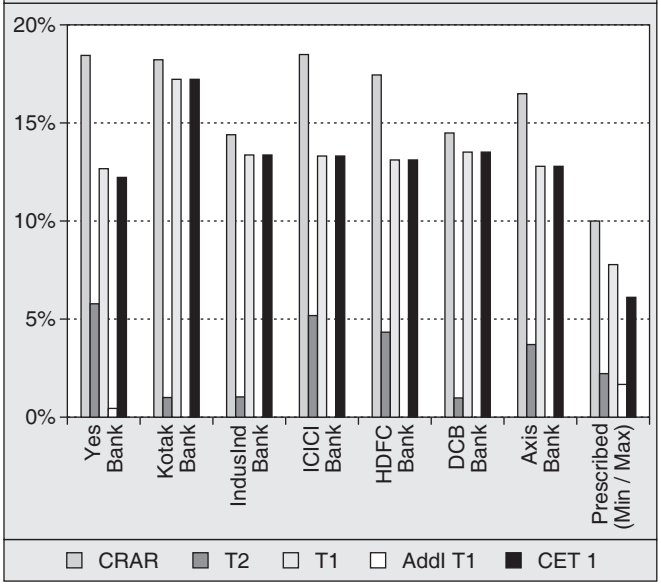
The position of capital adequacy ratios as at September 2014 in these banks on 'solo' basis is given in Table-2 (Chart-II). These ratios are post regulatory adjustments

CRAR levels above 15%. Of the remaining, two banks had CRAR of less than 14%. Thus all these banks currently have reasonable headway available for further business growth under normal circumstances.

Total Capital

Total capital of these seven banks as at end-September 2014 stood at ₹2,671 billion prior to

Chart II - Capital Adequacy Ratios as at September 2014



regulatory adjustments for reckoning for capital adequacy purposes (Table-3 - Chart-III). After regulatory adjustments, the total capital works out to ₹2,552 billion i.e. 95.56% of total capital. Thus the impact of regulatory adjustments on the total capital has been 4.44% of the total capital. The impact of regulatory adjustments on total capital in case of individual banks varied widely ranging between 0.91% to 11%. Besides the two extreme cases of 0.91% and 11%, for four banks the impact was between 3% and 4%.

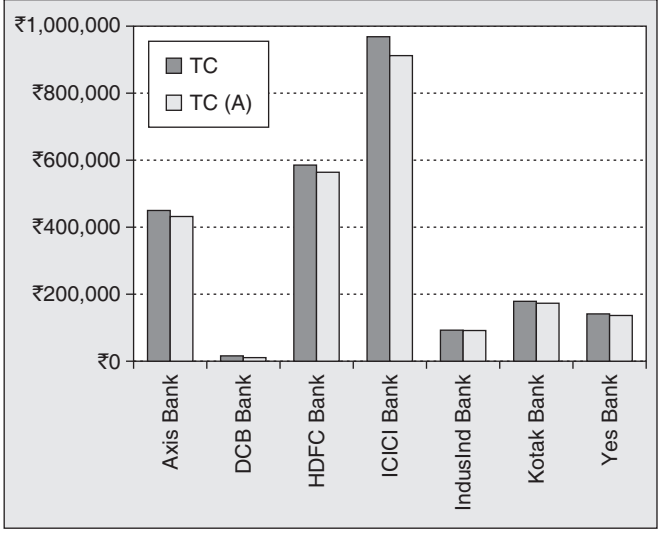
Table-3 : Total Capital As at end-September 2014
(₹ in million)

Bank	TC	TC (A)	%
Axis Bank	4,94,742	4,75,206	96.05
DCB Bank	13,140.45	11,695.16	89.00
HDFC Bank	6,43,760.5	6,20,413.3	96.37
ICICI Bank	10,65,406.7	10,03,464.6	94.19
IndusInd Bank	1,01,713.18	1,00,783.46	99.09
Kotak Bank	1,96,533.7	1,90,295.4	96.83
Yes Bank	1,55,271	1,50,027	96.62
Total	**26,70,567.53**	**25,51,884.92**	**95.56**

TC - Total Capital; TC (A) - Total Capital after Regulatory Adjustments; % - TC (A) as percent of TC

(Source: Disclosures under Basle III Regulations hosted on the websites of respective banks)

Chart-III : Total Capital & Adjusted Total Capital as at end-September 2014



Banks are required to phase-out certain types of capital instruments under different tiers of capital between end-March 2017 to end-March 2022. However, four banks have worked out and disclosed exclusions on account of such instruments.

Composition of Capital

All the banks have Common Equity Tier 1 ratios well above the regulatory minimum of 5.5% (for end-March 2015). CET1 ratios ranged from 11% to 15.5% for these banks. Three of the banks had CET1 ratios around 12%. Except in case of one bank that had Additional Tier 1 capital, all other banks had their Tier 1 capital entirely made up of CET1 capital. It is observed that CET1 levels of these banks are not only well above the Basle III stipulated level of 5.5% for CET1 capital, but also adequate to cover the Capital Conservation Buffer (CCB) (that will kick in beginning from end-March 2016). The current CET1 levels measure well as against the minimum stipulated level for CET1 plus CCB as per Basle III norms viz. 8%.

The levels of Tier 2 capital in these banks have varied in the range 0.88% to 5.2%. Three banks have Tier 2 ratios less than 1%, however, the remaining four banks have levels exceeding 2% - the maximum permissible for reckoning under total capital for

capital adequacy requirements. Thus for the former three banks, there is cushion of 1% available to these banks for raising further Tier 2.

Capital Adequacy - Group

Of the seven banks, two do not have any functioning group entity, and one bank had a group entity that has been newly formed. Remaining four banks have prepared consolidated financial accounts and capital adequacy data. The number of entities for each of these banks is given in Table-4. In terms of Basle III norms, the number of entities consolidation for regulatory purposes may differ from those consolidated for accounting purposes. The capital adequacy ratios on 'Group' basis for the four banks are shown in Table-5 (Chart-IV). Total CRAR on 'Group' basis, of these banks has ranged from 15.06% to 17.22%. Except one bank, for other banks Tier 1 capital comprised entirely CET1. Tier 1 Capital ratio for these banks ranged between 11,64% to 15.90%. Tier 2 Capital ratio ranged between 0.80% to 4.95%.

Table-4 : Number of Entities Consolidated

Bank	Accounting	Regulatory
Axis Bank	10	9
DCB Bank	0	0
HDFC Bank	6	2
ICICI Bank	28	18
IndusInd Bank	0	0
Kotak Bank	19	18
Yes Bank	1 *	1 *

** New entity.*

(Source : Disclosures under Basle III Regulations hosted on the websites of respective banks)

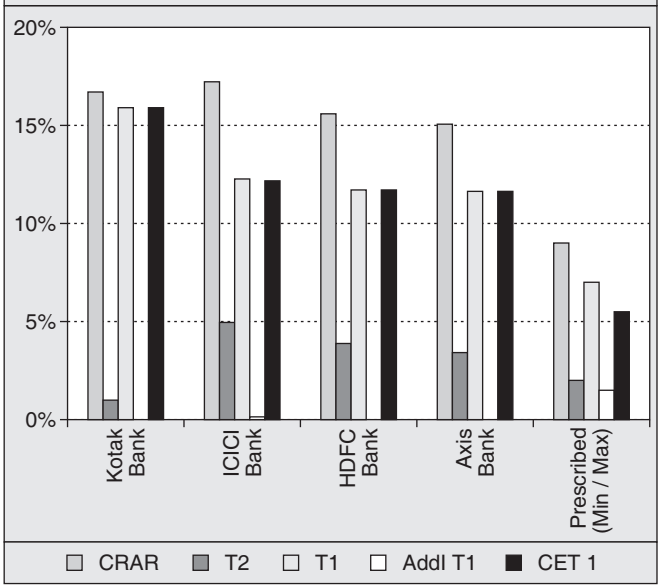
Table-5 : Capital Adequacy Ratios (Consolidated)
As at September 2014

Bank	CET 1	Addl. T1	T1	T2	CRAR
Prescribed (Min/ Max)	5.50%	1.50%	7.00%	2.00%	9.00%
Axis Bank	11.64%	0.00%	11.64%	3.42%	15.06%
HDFC Bank	11.71%	0.00%	11.71%	3.88%	15.59%
ICICI Bank	12.17%	0.10%	12.27%	4.95%	17.22%
Kotak Bank	15.90%	0.00%	15.90%	0.80%	16.70%

Min. for CET1, T1 and CRAR; Max. for Addl. T1 and T2.

(Source : Disclosures under Basle III Regulations hosted on the websites of respective banks)

Chart-IV : Capital Adequacy Ratios (Consolidate) as at end-September 2014



New generation private sector banks have therefore managed their capital well and have aligned it well with the changes that have been introduced under Basle III norms. Capital ratios for various tiers as well as regulatory adjustments have been complied with. They also seem to be in a comfortable position to be able for compliance with enhanced requirements for the ensuing year. They would need to gear up for meeting additional capital requirements arising from any unusual adverse situation (in the form of Couter Cyclical Buffer), and any specific prudential capital requirements that the regulator may specify based on its own risk perception of the particular bank. The modality of Internal Capital Adequacy Assessment Process (ICAAP) being followed by banks has been useful and has served the objective of making the exercise effective.

Modified Treatment of Specific Items

Securitisations based transactions are now subjected to more rigorous risk assessment treatment and capital provisions. Of the seven banks for four banks capital requirement on account of securitization exposure was nil, whereas other three banks had included the capital requirement on this account in their total capital requirement. Similarly, special requirements in respect of counterparty credit risk, exposures to

central counterparties, and also trading and derivatives activities have been built into the capital requirements assessment in line with the RBI guidelines in this regard.

Approaches for Risk Components

Credit Risk

Capital requirement for Credit Risk is assessed based on the Standardised Approach. All banks have a Credit Policy setting out that also includes comprehensive credit risk assessment process, including analysis of relevant quantitative and qualitative information to determine internal credit rating of the borrower. In respect of retail borrowers the score card based procedure is followed for determining internal credit rating. Besides, in terms of the RBI guidelines external credit ratings assigned by External Credit Assessment Institutions (ECAI) that are approved by RBI are used. For overseas customers, the ratings assigned by international credit rating agencies are used. Comprehensive approach is used for collateral valuation.

Market Risk

For Market Risk capital requirement Standardised Duration Approach is followed for determining capital requirement. All banks have Investment Policy and Derivatives Policy that have the framework for managing Market Risk.

Operations Risk

All banks currently determine the capital requirement for Operations Risk following the Basic Indicator Approach. They also have Operational Risk Management Policy that lays down the framework for managing Operations Risk. One of these banks have obtained approval for parallel run for migration to The Standardised Approach. Some banks have prepared themselves for Advanced Approach and are likely to seek approval for adopting the same. These banks estimate Operational Value at Risk (OpVaR) based on the principles of AMA by using internal loss data, scenario analysis and external loss data. The OpVaR is stress tested on a quarterly basis to ensure adequacy of the capital provided for operational risk and is compared with trends of actual losses. The banks have Operations Risk Management Committee for various functions related to managing Operations risk.

Interest Rate Risk in the Banking Book (IRRBB)

Interest Rate Risk In The Banking Book (IRRBB) refers to the risk of deterioration in the positions held on the banking book of an institution due to movement in interest rates over time. Banks are managing the impact of IRBBB as a part of Asset Liability Management activities, with the help of various tools i.e. gap analysis, Earning at Risk (EaR), Duration of Equity (DoE).

Risk Management Frame work

The capital management framework is complemented by the risk management framework, which includes a comprehensive assessment of material risks. The Boards of the banks approve various Policies, and the Risk Management Commitees of the Board. Besides, the Risk Management Group and Finance Group carry out the functions related to management of various risks viz. Credit Risk, Market Risk and Operations Risk.

An analysis of the capital adequacy position and the risk weighted assets and an assessment of the various aspects of Basel III on capital and risk management as stipulated by RBI, are reported to the Board on quarterly basis. Risk Management Committees periodically review various risks viz. credit risk, interest rate risk, liquidity risk, foreign exchange risk, operational and outsourcing risks and the limits framework, including stress test limits for various risks. Besides, banks have independent groups and sub-groups that carry out independent evaluation, monitoring and reporting of various risks.

Banks have also set-up Committees that have members from concerned functions to monitor specific risk areas. For credit risk, there are Credit Committees to review developments in key industrial sectors and the Bank's exposure to these sectors and various portfolios on a periodic basis.

The executive level committees that undertake supervision and review of operational risk aspects are the Operational Risk Management Committee (ORMC), Information Security Committee, Business Continuity Steering Committee, Fraud Monitoring Committee and Product and Process Approval Committee. ORMC is responsible for overseeing all material operational risks, responses to risk issues

and the adequacy and effectiveness of controls within a given operational risk control area.

Further, all banks have an Asset Liabilities Management Committee (ALCO) that, inter alia, is responsible for management of the balance sheet with a view to manage the market risk exposure within the risk parameters laid down by the Board of Directors / Risk Committee. The Asset Liability Management Group (ALMG) monitors and manages the risk under the supervision of ALCO.

ICAAP

In pursuance of RBI guidelines, all banks have adopted internal capital adequacy assessment process (ICAAP) that is conducted annually for determining the adequate level of capitalisation to meet the regulatory norms and current and future business needs. The ICAAP is forward looking and encompasses capital planning for a few years hence. The time horizon chosen by various banks may differ. One of the bank has disclosed its ICAAP covers capital planning for four years, while in case of another bank it covered span of three years.

ICAAP also covers identification and measurement of material risks, the risk appetite of the bank, risk threshholds, and adequacy of risk control framework. It determines the relationship between risk and capital and also includes stress testing results. In case of banks that have progressed towards Advanced Measurement Approach for Operations Risk ICAAP includes OpVaR.

The business and capital plans and the stress testing results of the group entities are also integrated into the ICAAP of the banks having group entities who are consolidated for regulatory purposes.

Pillar II

Supervisory Colleges

A significant measure for global oversight of multi-national financial institutions is institution of Supervisory Colleges. This is a step towards cross-border consolidated supervision facilitating co-operation and information exchange between home supervisors and the various other supervisors involved, primarily host banking supervisors. Reserve Bank of India participates in supervisory colleges set-up for various multinational banks operating in India. As a measure towards aligning with international supervisory regime, the RBI has set up supervisory colleges for six Indian banks with significant operations globally. Among these are two new generation private sector banks viz. ICICI Bank and Axis Bank.

Concentration Risk

All banks have measures for managing credit concentration risk mainly through the modality of fixing prudential exposure ceilings for various dimensions of credit concentration risk. Some of the common vectors of credit concentration risk are industry, products, geography, underlying collateral nature and single / group borrower exposures. The number and nature of dimensions tracked by various banks are different, other than certain common parameters particularly those prescribed by the regulator. Some of the discretionary dimensions could be exposures in certain specific region, or a particular asset product. These exposures are regularly tracked through committees at various levels including the Senior Management and the Board levels. The organisation for risk management is widely varying depending on several factors especially the size of the bank, the major products range and the geographical spread. Similarly liabilities concentration risk is monitored through tracking of share of largest depositors, and maturity profile of deposits. Concentration risks in treasury operations and investment portfolios are monitored basis appropriate measures like various gap limits, net open positions, etc.

Stress Tests

All banks have put in place a Stress Testing Framework with the approval of their respective Board of Directors. The coverage of stress testing framework in various banks is different. As a part of ICAAP, it is used for assessing impact on capital. It is also used for assessment on income and profits

under adverse market conditions or critical events. Stress testing framework also includes assessment of impact on trading portfolios, securitized portfolios, etc. More refined stress testing framework cover various risks like credit risk, interest rate risk, liquidity risk, foreign exchange risk, operational and outsourcing risks.

Compensation Policy

In line with the regulatory guidelines and Basle III norms, banks have aligned their compensation policies to ensure that the performance based remuneration system is designed in a manner that these do not lead to excessive risk taking by their employees. Some of the banks have adopted modalities of limiting the proportion of variable pay, deferment of part of variable pay, and also provisions like malus and clawback. Compensation policy is approved by the Compensation Committee of the Board that comprises only independent directors.

Pillar III

Market Discipline - Disclosures

The third pillar of Basel II Regulations that pertains to Market Discipline prescribes certain disclosures as it considered that market discipline is an effective complement to the other two pillars. BCBS has developed a set of disclosure requirements which will allow market participants to assess key pieces of information on the scope of application, capital, risk exposures, risk assessment processes, and hence the capital adequacy of the institution. These have particular relevance under the Framework, where reliance on internal methodologies gives banks more discretion in assessing capital requirements. In Basel III guidelines the disclosure requirements have been enlarged by including certain other parameters. These are mainly disclosures related to securitisation exposures and sponsorship of off-balance sheet vehicles. Enhanced disclosures on the detail of the components of regulatory capital and their reconciliation to the reported accounts will be required, including a comprehensive explanation of how a bank calculates its regulatory capital ratios.

All NGPSBs have adopted the enhanced disclosure framework under Basel III and have published these on their respective websites. The quantitative disclosures where the requirements / formats have been specified by RBI, these have been fully complied with. The qualitative disclosures on various parameters require description of the organizational framework and salient features of various policies relevant in the context of risk management and capital management. The extent of these disclosures has been varied for different banks. In a couple of cases the descriptions provide a fairly clear picture to the reader. In some cases the information provided is inadequate to form a view on the risk management systems and capital management systems of the bank.

Challenges

Additional Capital Requirements : The most significant change under Basel III pertains to capital requirements. Increase in the prescribed total capital requirements, changes in the composition of capital with higher proportion of common equity, new adjustments to capital and enhanced risk factors cumulatively will necessitate much higher capital for supporting increased business growth. As per the estimates made by a RBI project the total capital requirements up to end-March 2018 for the Indian banks is ₹5 trillion of which equity capital will be ₹1.75 trillion. The estimates for private sector banks for additional equity capital is ₹250 billion under Basel III, as against ₹25 billion under Basel II. This may be easier for banks that are perceived to be stronger but could pose challenge for others. Besides this will be impacted to a great degree by the state of the primary capital market and also by the demand on it from other sectors of the economy.

Impact on Profitability : One of the prime objectives of Basel III is reducing leveraging in banks. An important implication of higher capital requirements under Basel III will be higher cost of funds for banks. Thus banks will experience a dampening effect on their ROE to some extent, considering that it will be difficult to meet the higher cost entirely by raising

the cost of credit. This may lead to realignment of business strategies of these banks. Asset mix may be altered to enhance the share of low risk weighted assets. Besides, strategies like focusing on low cost deposits, widening the reach through low-cost channels like Business Facilitators, and renewed focus on non-interest income sources may receive greater attention.

Risk Management : In their efforts to cope up with meeting Basel III standards, compliance with associated RBI guidelines and enhanced disclosures both quantitative and qualitative the banks will need to revisit their risk management strategies. Determining the risk appetite realistically will be crucial. This will vary for each of the NGPSB given the diversity among them on various parameters. Risk taking capacity will be the bottom-line that will determine the risk appetite. Ensuring that the decisions of the risk takers are in sync with the risk appetite so determined through appropriate operating parameters and control mechanism will be important. Risk monitoring will need to be both extensive and frequent. Another impact on risk management is integration of risk management with finance function.

Data Management : Determination of capital requirements under Basel III is more complex and calls for more detailed information to be able to factor in all required adjustments, enhancements and neutralization. Hence timely availability of all relevant data accurately at a single point would be important to ensure precision in capital assessment exercise. Data not being captured in the systems or being distributed in different silos will pose significant challenges. This will call for banks to have a relook at their data architecture, process flows, etc. with the objective of meeting the data related requirements.

Way Forward

Basle Committee of Banking Supervision in its Seventh progress report on adoption of the Basel regulatory framework, published in October 2014 has reported that India has completed adoption of guidelines under Basel II and Basel 2.5.

Under Basel III, India has completed adoption of guidelines related to Risk based Capital requirements. In respect of identification of Globally Systematically Important Banks (G-SIB), no Indian bank has been included in G-SIB. One Indian bank was among the sample banks examined for identification of G-SIBs. On Domestic Systematically Important Banks (D-SIB) the framework for the same has been finalised. On Leverage Ratio and additional disclosure requirements the revised guidelines have since been issued by RBI.

All NGPSBs have adopted the Basel III guidelines and have put in place the basic organizational set-up and policies for meeting the requirements on ongoing basis. Basel roadmap envisages several qualitative changes apart from rising quantitative thresholds over the next few years. On the other hand the business environment is expected to be more demanding with expected acceleration of growth in India. In view of these, these banks will be required to continually review their policies and systems and revise these to be able to effectively meet the Basel regulations.

Leverage Ratio : With effect from 1st April 2015 public disclosure of leverage ratio will need to be made. Banks are required to maintain a leverage ratio (capital / exposure) of 4.5% (as against 3% stipulated by BCSBI) till further changes in the threshold. The first disclosure will be for the quarter ending 31st March 2014. This is required to be computed (and disclosed on quarterly basis) in line with the RBI guidelines for determining capital and exposure measures for this purpose. Currently meeting the leverage requirement does not seem to pose a challenge. However it may be difficult to maintain the current level of leverage when the credit demand becomes stronger.

Liquidity Coverage Ratio (LCR) : Beginning 1st January 2015, banks are required to maintain Liquidity Coverage Ratio at least at the prescribed level that gradually increases beginning from 60% to 100% as at 1st January 2019. LCR is defined as ratio between

the stock of High Quality Liquid Assets (HQLA) and estimated net cash outflows over the next 30 calendar days. Given certain restrictions on to the extent SLR securities can be included for LCR purposes, banks will be required to realign their investment strategies for maintaining LCR on ongoing basis.

Leverage Ratio : Leverage Ratio has been defined as ratio of Capital Measure to Exposure Measure. Tier 1 capital is currently used as Capital Measure and Exposure measure is a bank's total exposure viz. sum of on-balance and off-balance sheet exposures plus exposures on account of derivatives and securities financing transactions. This is a non risk-based ratio and hence serves as a measure of equity stake in the total exposure.

As per RBI analysis, for the Indian banking system Tier 1 Leverage Ratio for Indian banking system is currently at 4.5%, as against the presently minimum 3% for the parallel run period up to 1st January 2017. Beginning 1st January 2015 public disclosure of Leverage Ratio is required to be made. Thus in India, the banks will be required to disclose on quarterly basis Leverage Ration from 1st April 2015 onwards. The position of individual banks in this regard will be known only from the next fiscal, given the current proportion of Tier 1 capital in the total capital, it is expected that the new generation private sector banks will be in a position to meet the current benchmark.

Net Stable Funding Ratio (NSFR) : The Net Stable Funding Ratio (NSFR) is a longer-term structural ratio designed to address liquidity mismatches. It will be effective from 1st January 2018. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding. The time horizon for NSFR is one year. BCBS guidelines issued in October 2014 stipulated that the ratio of 'Available amount of stable funding' to 'Required amount of stable funding' should be equal to or more than 100%.

One can expect exciting times ahead as the new generation private sector banks further evolve their policies, systems and procedures to meet the increasingly rigorous regulations alongwith tapping growing business opportunities that are expected to arise with economic growth moving to a higher trajectory.

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Caveat : This article has been written by the author entirely in his personal capacity and the views expressed herein are solely his personal views and do not in any way represent the views of the organisation he is associated with.

Basel III and the capital structure of Indian banks

Dr. P. Usha *

Introduction

Basel III guidelines issued by the Basel Committee on Banking Supervision (BCBS) are designed to enhance the safety and stability of banks through the strengthening of the quality of capital, stipulating leverage ratio and liquidity standards. "Basel III reforms are the response of the Basel Committee on Banking Supervision (BCBS) to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spill over from the financial sector to the real economy." (Reserve Bank of India (RBI), July 2014) The stringent capital standards set by Basel III focuses on the phase-in of the deductions and phase out of ineligible capital as well as introduction of loss absorbency characteristics to the debt instruments reckoned as capital funds by banks. Banks are expected to replace the phased out capital with similar or better quality capital, subject to conditions laid out by the respective regulator.

This article examines the immediate impact of implementation of Basel III guidelines on the Common Equity Tier I (CET I) capital to risk weighted assets ratio (CRAR) and total CRAR in the case of Indian banks. Basel III capital regulation has been implemented from April 1, 2013 in India in phases with the final implementation stipulated for 31 March 2019. The scope of the article is limited to the study of the impact on the CRAR as on Sep 2013 and the contribution of various aspects of Basel III to the variation in the CET1 CRAR and total CRAR.

Key elements of the guidelines

The key initiatives of the Basel III framework includes :

- Enhancing the quality and level of capital to ensure that banks are better able to absorb losses on both a going concern and a gone concern basis[1]
- Capital conservation buffer and countercyclical buffer introduced as macro prudential measures
- Loss absorptive capacity of non equity capital enhanced
- Leverage ratio prescribed as a backstop to the risk based capital measure[2]
- Global liquidity standard introduced[3]

Data and Methodology

Net CET 1 capital as on 31 March 2013 (prior to implementation) and as on 30 September 2013 (after implementation) compared to perceive the impact of the new guidelines. The data have been sourced from the Basel III disclosures as on 30th September 2013 and Basel II disclosures as on 31.03.2013 available in the public domain[4].

Analysis

The minimum total capital adequacy ratio stipulated by BCBS continues to be 8 per cent, (9 per cent in the case of Indian banks). However, the minimum Tier I Capital to Risk weighted Assets Ratio (CRAR)

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1. "From regulatory capital perspective, going-concern capital is the capital which can absorb losses without triggering bankruptcy of the bank. Gone-concern capital is the capital which will absorb losses only in a situation of liquidation of the bank" (RBI, July 2014).
2. **Leverage Ratio :** Introduction of a simple, transparent, non-risk based, Tier I capital to exposure ratio, intended to limit build up of leverage in the banking system. The ratio set at 3% by the Basel Committee and the Indian Regulator has set at 4.5%.
3. **Global Liquidity Standards :** Introduction of Liquidity Coverage Ratio and Net Stable Funding Ratio to ensure that banks maintain sufficient high quality liquid assets to tide over stress sceanrio for one month and stable liquidity position over a period of twelve months respectively.
4. The article uses consolidated data wherever consolidated disclosures only have been made CET 1 capital as on 31st March 2013 was computed as equity capital plus disclosed reserves less 20% of Deferred Tax Assets, wherever DTA was disclosed.

ratio was stipulated at 6 per cent (up from 4 per cent under Basel II) and share of CET 1 ratio in the Tier I ratio set at 4.5 per cent (75 per cent of Tier I CRAR) compared to 2 per cent under the Basel II framework. In order to enhance the quality, consistency and transparency of Banks' capital base, the CET I CRAR ratio set at 5.5 per cent in the case of Indian banks by the regulator. In terms of RBI guidelines on Basel III (RBI, July 2014), the national minima for CET 1 capital from April 1, 2013, (the date of implementation) upto March 30, 2014 stipulated at 4.5 per cent and as on 31 March, 2019, the date of completion of the transition period at 5.5 per cent. The detailed table on transitional arrangements is furnished in the annexure.

When we analyse the CETI capital ratio for Indian banks as on 30.09.2013, we observe that though the national minima stood at 4.5 per cent, the ratio ranged from 5.66 per cent to 10.38 per cent in the case of public sector banks. The range differed widely with respect to new and old private sector banks also. In the case of new private sector banks, the CET 1 ratio ranged from 8.1 per cent to 17.04 percent. If we consider the old private sector banks, the low was at 8.06 per cent and the high was at 15.1 per cent.

Chart-1 : CET 1 of Banks as on 30 September, 2013

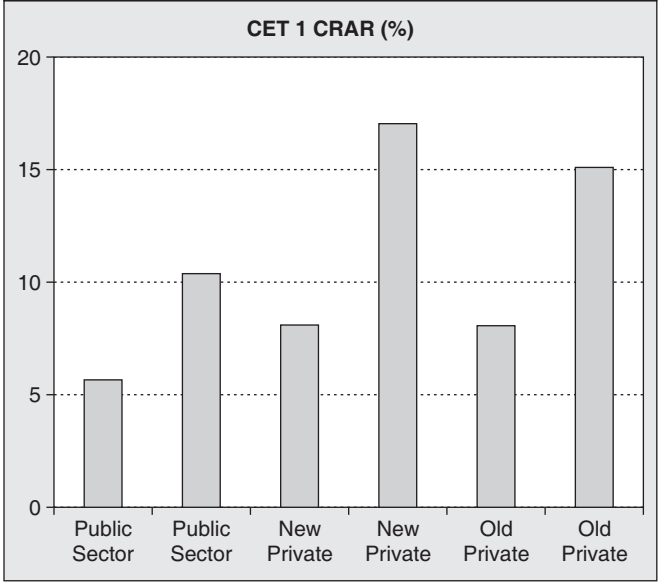

Table-1 : CET1 of Indian Banks as on 30 September, 2013

CET 1 ratio	No. of public sector	No. of new private sector banks	No. of old private sector banks	Total no. of banks
5.5 to 6%	2	Nil	Nil	2
6.01 to 7%	8	Nil	Nil	8
7.01 to 8%	6	Nil	Nil	6
8.01 to 9%	9	1	2	12
9.01 to 10%	Nil	1	Nil	1
Above 10%	1	5	8	14
Total	**26**	**7**	**10**	**43**

Capital Conservation Buffer

In addition to enhancing the level of CET 1 capital, Basel III reforms introduces the need for building Capital Conservation Buffer (CCB) of 2.5 per cent (to be carved out of common equity). The CCB is designed to ensure that banks build up capital buffers during normal times (i.e. outside periods of stress) and conserve capital which can be drawn down during a stressed period (systemic or idiosyncratic) when losses are incurred. Banks that draw down their CCB during a stressed period should also have a definite plan to replenish the buffer as part of their Internal Capital Adequacy Assessment Process (ICAAP). The total Common Equity requirement plus capital conservation buffer mandated by BCBS at 7 per cent of Risk Weighted Assets (RWAs) and total capital to RWAs to 10.5 per cent and for Indian banks at 8 per cent and 11.5 per centre spectively. The capital conservation buffer in the form of Common Equity will be phased-in over a period of four years at 0.625 per cent per year, commencing from March 1, 2016 for Indian banks (0.625 per cent as on 31.03.2016, 1.25 per cent as on 31.03.2017, 1.875 per cent as on 31.03.2018 and 2.5 per cent as on 31.03.2019). (See Annexure)

If the fully phased in Basel III capital requirements - minimum CET 1 capital ratio of 8 per cent (CET1 of 5.5 per cent + Capital Conservation Buffer of 2.5 per cent) by March 2019 - are taken into consideration, we observe that 10 public sector banks are above

8 per cent and all the 17 private sector banks in the study disclose CET 1 ratio of above 8 per cent. This is not to say that these banks are adequately capitalized for the full implementation by March 2019. Given the view that capital requirements during the initial years of implementation would be lower and may be higher during later periods, banks would need much higher levels of capital as they proceed towards full implementation.

Quantitative Impact Study of BCBS (BCBS, 2009) reveals that assuming full implementation, the decline in average net CET 1 ratio (net of regulatory deductions) for Group 1 banks (banks with Tier 1 capital in excess of €3 billion) was 5.4 per cent (decline from 11.1 per cent to 5.7 per cent). In the case of Group 2 banks (All banks other than banks in Group 1) the decline slightly muted as the fall was only 2.9 per cent (from 10.7 per cent to 7.8 per cent).

Comparison of CET1 ratio as on 30, September 2013 and March 31, 2013 reveals that the ratio declined for all public sector banks after the implementation of Basel III except for two banks. In contrast to other banks, these two banks have shown improvement in CET 1 CRAR through reduction in risk weighted assets especially for market risk, the method resorted to by some international banks.

The decline in CET 1 ratio in the case of public sector banks ranged from 0.08 per cent (two banks) to 1.08 per cent. In the case of new private sector banks, the CET1 ratio declined in the case of three banks and increased for 4 banks though net CET 1 capital (net of regulatory adjustments) increased in the case of all the banks. As regards the old private sector banks, 50 per cent showed decline in the CET 1 CRAR and the rest registered an increase in the ratio.

The decline in CET1 CRAR may be attributed to two reasons : (1) increase in the denominator consequent to growth in Risk Weighted Assets (RWA) and (2) decline in the numerator as a result of fall in CET1 capital due to regulatory adjustments under Basel III.

RWA for credit risk predominate for Indian banks, accounting on an average for 87.31 per cent of total RWA (for the period 2008-09 to 2012-13). Generally, with the growth in the asset book, the risk weighted assets for credit risk is bound to increase. As regards operational risk, banks in India being on Basic Indicator Approach, the scope for reduction in capital requirement and hence RWA is nil, unless their incomes fall drastically. Though, Banks have a scope for reducing RWA for market risk, the average capital allocated accounts for only 5.88 per cent (during the same period) implying that the trading portfolio is limited, providing hardly any room for downsizing the portfolio and hence the RWA. Consequently, against the background of loans and advances constituting a major proportion of assets for Indian banks, growth in the loan book puts the RWA on the whole in the upward trajectory.

Regulatory adjustments to CET 1

As said earlier, while the growth in the RWA leads to increase in the denominator for CRAR, the regulatory adjustments adversely affects the numerator and the combined effect is the reduction in the CRAR. BCBS consultative document (BCBS, 2009) discussing about regulatory adjustments, mentions that the definition of capital under Basel II suffers from following 'fundamental flaws' compromising on the quality, consistency and transparency of capital :

a. Regulatory adjustments are not applied to CET 1 capital (but applied to the whole Tier I capital)
b. There is no consistent or uniform list of regulatory adjustments (across countries)
c. The disclosures on components of capital were deficient (details of composition of capital not disclosed)

Thus, under Basel III regime, regulatory adjustments must be applied at the level of common equity, reason being Tier I capital funds of insufficient quality would ultimately impact the common equity and banks may disclose strong Tier I ratio, while actually possessing low levels of common equity. Hence Basel III stipulated internationally consistent or 'harmonised' regulatory adjustments that have to be adjusted from CET 1 capital and does not vary substantially across countries.

The regulatory adjustments prescribed in the Basel III guidelines and applicable to Indian banks were Deferred Tax Assets (DTA), investment in the capital of banking, financial and insurance entities, reciprocal cross- holdings in common equity, defined-benefit

pension fund net assets and unamortized pension fund expenditure.

In the case of Indian banks, DTA was deducted from Tier I capital under Basel II regime also. However, under Basel III, the entire DTA to be deducted from CET 1 capital. Phase in of deductions has been provided and progresses at 20 per cent per annum. Hence in the first year of implementation, 20 per cent of DTA to be deducted from CET 1 capital, 80 per cent may be deducted from Additional Tier 1 (AT1) capital. In the absence of sufficient AT1 capital, shortfall in DTA may be deducted from CET1 (as in the case of most private sector banks).

Regulatory Adjustments / Deductions from CET I capital

- Goodwill and all other Intangible assets
- Deferred tax assets
- Shortfall of provisions compared to expected losses (under Internal Ratings Based Approach)
- Defined Benefit Pension Fund Assets and Liabilities and unamortized pension fund expenditure
- Investment in own shares

We observe from our analysis that regulatory adjustments to CET 1 capital under Basel III impacted CET1 CRAR of public sector banks on an average by 21 bps and it ranged from 5 bps to 98 bps. Accumulated losses contributed to the high level of deductions in the case of the bank that had the highest impact. Though the mandatory deductions to CET 1 capital was not a significant contributor immediately to the decline in CET 1 CRAR ratio, with the complete phasing-in of deductions from CET 1 capital, the regulatory adjustments would have a greater negative impact on CET 1 capital.

In the case of new private sector banks, regulatory adjustments adversely affected the CET 1 CRAR by 52 bps on an average and in the case of old private sector banks by 31 bps. It is also observed that 4 out of 7 new private sector banks are impacted by more than 50 bps compared to 2 out of 26 for public sector banks and 3 out of 10 for old private sector banks. New private sector banks were affected more by the inadequate AT1 and hence ended up deducting regulatory adjustments meant for non equity capital (during the phase-in period) from equity capital. In other words, the new private sector banks could not avail the phase - in benefits during the transition period. (See Table-2)

Table-2 : Impact of Regulatory adjustments on CET1 ratio for Indian Banks as on Sept 30, 2013

	No of banks			
	Public sector	**New Private**	**Old Private**	**All banks**
Upto 20 bps	12	2	4	18
21 - 30 bps	8	-	1	9
31 - 40 bps	4	-	2	6
41 - 50 bps	-	1	-	1
More than 50 bps	2	4	3	9
Total	**26**	**7**	**10**	**43**

It is interesting to note that in the case of public sector banks and old private sector banks, DTA and pension related deductions account for major portion of regulatory adjustments. In fact, defined-benefit pension fund net assets and unamortized pension fund expenditure account for a major share of regulatory adjustments in the case of both public sector banks as well as the old private sector banks. However, in the case of new private sector banks, DTA and deductions from CET 1 due to insufficient AT 1 accounts for major proportion of regulatory adjustments to CET 1. Deduction on account of indirect investment in bank's own treasury stock arising as a result of bank's investment in mutual funds was at a negligible share of 0.27 per cent in the case of public sector banks.

Table-3 : Regulatory adjustments to CET 1 capital

Items of Regulatory adjustment	**Public sector banks**	**New Private Sector banks**	**Old Private Sector banks**
DTA	21.40	20.16	33.29
Reciprocal cross holding	2.68	0.26	2.04
Invt in subsidiaries	7.79	15.25	6.02
Defined benefit pension fund net assets and unamortised pension fund expenditures	48.95	nil	27.75
Deduction from CET 1 due to insufficient AT 1 and T II	nil	56.42	12.19
others	20.18	7.91	18.71
	100.00	100.00	100.00

In fact, in the case of quiet a few banks, especially the new private sector banks, the AT1 was insufficient and the regulatory adjustments to AT 1 were also carried out in CET 1 capital. But the new private sector banks had a very high share of TII capital. The share of non-equity capital for four out of seven new private sector banks ranged from 28.68 per cent to 37.74 per cent. In the case of old private sector banks, except for one Bank, other banks did not have AT1 capital at all and had a lower share of TII capital ranging from 1.78 per cent to 25.69 per cent.

Decline in total CRAR

All public sector banks without exception have experienced fall in total CRAR between March and September 2013. It is interesting to observe the following :

- Two public sector banks raised Tier II capital during April to September 2013
- Consequently the impact was minimum in the case of one bank which raised Tier II capital.
- In the case of another public sector bank, despite raising Tier II capital, decline in CRAR was maximum among public sector banks.
- An old private sector bank could maintain the same ratio of 13.22 per cent as on 31st March as well as 30th September 2013.

Table-3 : Fall in total CRAR

	No of banks		
Bps	**Public sector**	**New Private sector**	**Old Private sector**
Upto 50 bps	4	Nil	1
51 - 100 bps	7	2	1
101 - 150 bps	5	Nil	3
151 - 200 bps	9	Nil	Nil
More than 200 bps	1	3	Nil

As on 31.03.2013, the total CRAR of all public sector banks was well above 10 per cent, though the regulatory minimum was at 9 per cent. However, consequent to the implementation of Basel III, three banks' total CRAR has fallen to below 10 per cent, but remained above 9 per cent.

The highest capital adequacy ratio of public sector banks was at 12.92 per cent but it was lower than the lowest of 13.80 per cent among new private sector banks.

Table -4 : Total CRAR of banks as on 30 September, 2013

	No of banks		
CRAR	**Public sector**	**New Private sector**	**Old Private sector**
Below 10%	3	Nil	Nil
10.01 to 11%	11	Nil	1
11.01 to 12%	7	Nil	1
Above 12%	5	7	8

ATI and TII and the decline in total CRAR

Non-equity Capital instruments, to be Basel III compliant should incorporate following loss absorbency characteristics :

a) Conversion to common shares

b) Write-down on hitting the pre-specified trigger (permanent or temporary).

While in the case of permanent write-down, the instrument no longer exists in the balance sheet, with temporary write-down, the value of the instrument is written down or decreased on the occurrence of the trigger event and which may be written up or increased to its original value depending on the terms and conditions of the instrument.

AT1 instruments issued prior to 31 March, 2019 will have two triggers - 5.5 per cent CET 1 CRAR upto 31 March 2019 and 6.125 per cent thereafter and for instruments issued after 31 March 2019, the trigger stipulated at CET1 of 6.125 per cent of RWAs. (RBI, 01 Sep 2014).

The write-down will have the following effects :

a) Reduce the claim of the instrument in liquidation

b) Reduce the amount re-paid when a call is exercised

c) Partially or fully reduce coupon / dividend payments on the instrument (RBI, September 1, 2014)

Non-equity capital raised prior to Basel III implementation, (instruments that do not include the loss absorption characteristics are to be phased out and their

recognition capped at 90 per cent in the first year of implementation, with the cap reducing by 10 per cent percentage points in each of the subsequent year. This cap will be applied to Additional Tier 1 and Tier 2 capital instruments separately and refers to the total amount of instruments outstanding which no longer meet the relevant entry criteria.[5]

The correlation between decline in total CRAR and the share of non-equity capital was at a significant 41 per cent in the case of both public sector banks as well as private sector banks. It is obvious that consequent to the phase-out and wherever banks held a higher share of capital funds as non-equity capital, the decline in total capital adequacy ratio was also pronounced. The share of AT1 capital and TII capital, had a significant impact on the decline in total CRAR.

Conclusion

In the near term, with few exceptions, public sector banks seem to be just adequately capitalized. With the growth in asset book, decline in asset quality (or rather increase in impaired assets), implementation of IRB approach for credit risk and phase out of ineligible capital, banks would be required to raise capital. While banks may be in a position to raise equity capital - by way of Government's budgetary contribution, qualified Institutional Placements and public offers, challenge lies in raising AT1 capital and TII capital - Basel III compliant Non-equity capital, that are loss absorbent. Success in raising equity as well as non-equity capital from the market by the banks would depend on the 'distance to trigger'[6] or gap between the current CET 1 ratio compared to the trigger point of 6.125 per cent CET 1 ratio. The potential distance in turn may be dependent on a number of factors such as, the targeted growth in the asset book, the asset quality - mainly the loan book, the current level of impaired assets (NPAs and standard restructured assets), the probability of default and level of Loss Given Default of the portfolios of the bank, the productivity and profitability of the bank etc. In short all the factors that might result in eroding the CET 1 capital may have to be analysed to perceive their impact on CET 1 ratio in future.

To conclude, in this article, we have analysed the immediate impact of Basel III implementation on the capital structure of Indian banks. However, the impact of the guidelines on various other aspects may be undertaken using empirical evidence like the cost of regulatory compliance, the level of increase in the cost of capital on account of raising loss absorbent non-equity capital, impact on Return On Assets (additional CET 1 and better quality non-equity capital required to undertake same business), impact on economic growth, impact on cost of lending and hence deposit and loan pricing etc.

Annexure : Transitional Arrangements-Scheduled Commercial Banks (% of RWAs)

Minimum capital ratios	April 1 2013	March 31 2014	March 31 2015	March 31 2016	March 31 2017	March 31 2018	March 31 2019
Minimum Common Equity Tier 1 (CET1)	4.5	5	5.5	5.5	5.5	5.5	5.5
Capital conservation buffer (CCB)	-	-	-	0.625	1.25	1.875	2.5
Minimum CET1+ CCB	4.5	5	5.5	6.125	6.75	7.375	8
Minimum Tier 1 capital	6	6.5	7	7	7	7	7
Minimum Total Capital*	9	9	9	9	9	9	9
Minimum Total Capital +CCB	9	9	9	9.625	10.25	10.875	11.5
Phase-in of all deductions from CET1 (in%)#	20	40	60	80	100	100	100

5. The base should only include instruments that will be grandfathered. If an instrument is derecognized on January 1, 2013, it does not count towards the base fixed on January 1, 2013. Also, the base for the transitional arrangements should reflect the outstanding amount which is eligible to be included in the relevant tier of capital under the existing framework applied as on December 31, 2012. Further, for Tier 2 instruments which have begun to amortise before January 1, 2013, the base for grandfathering should take into account the amortised amount, and not the full nominal amount. Thus, individual instruments will continue to be amortised at a rate of 20% per year while the aggregate cap will be reduced at a rate of 10% per year.
6. For discussion on different types of trigger see Koffer, 2013

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Interconnectedness in the Financial System : How Vital and How Critical

The post-crisis experience of many features in the financial system which were not given due attention earlier, led to the calibration of many new regulatory standards. More notably, in addition to keeping a tab on individual institutions, the importance of a macro view of the financial system was acknowledged. Among the many structures that emerged was 'Too Connected to Fail (TCTF)'. The US experience of one institution going bust leading to the failure of a dozen others due to common exposures, led the world to come alive to the phenomenon of 'interconnectedness' that exists between financial institutions. Subsequently, interconnectedness has been accepted by standard setting bodies as one of the parameters for identifying systemically important financial institutions.

Why then are network models being increasingly used across the world to assess interconnectedness among financial institutions? The answer lies in the fact that financial networks are complex and adaptive systems. They are complex because the interconnections involved among financial institutions are massive and they are adaptive because while individual institutions in the system always want to be in an optimal position, they are not fully informed. Such complex adaptive systems have the potential to amplify losses manifold during crisis events. This is exactly what happened during the Lehman fallout when many institutions shut their doors and refused liquidity to institutions just because they were suspected of being 'infected'.

To begin with, network models assist in understanding the structure and pattern of connections in a particular system. If the institutions with high centrality scores are also heavy net borrowers in the system, then there might be potential stability issues in the event of any such institution facing distress. These sort of indications can provide valuable inputs to a regulator in reassessing the available redundancies in the system and initiate counteractive measures.

Source : Financial Stability Report (Including Trend & Progress of Banking in India 2013-14) December 2014.

BOOK REVIEW

Name of the Book : Credit Monitoring - A Trainer's Writings for Bankers

Author : Dr. T. C. G. Namboodiri

Publisher : S. S. Publications, Thalakot, Mandur, PO. Kannur District, Kerala, 670 501

Pages : 255 (Edition 2015)

Price : ₹325

Reviewed by : Mr. S. K. Datta, Joint Director, IIBF and former CGM, Bank of India

The current days are testing times for Banks in India. With the NPA nemesis raising its head, a significant amount of time and energy of banks goes in tackling this issue. Whilst on one hand, this causes a dent to all profitability parameters, on the other hand, it leaves less time to scout for fresh business.

Credit has always been the primary source of revenue for banks. While a lot of emphasis has been put on how credit proposals should be appraised and this has led to development of various methods of credit assessment. However, what happens after the credit is disbursed is yet to be subject to rigorous discipline. This immediately puts the focus on Credit Monitoring. What steps are being taken, right from the time a bank sanctions an advance till the time the advance gets repaid, or if misfortune strikes, till the time the account slips into NPA.

Every banker knows about the term 'Credit Monitoring' and acknowledges its importance in keeping the bank healthy. Yet, when it comes to details of monitoring tools, more often than not, bankers are found to be less endowed. Business heads of many banks would have experienced a sense of discomfort which arises from their knowledge that the team that is required to monitor advance accounts may not really have the necessary skills. This may especially be true now since, while banks are experiencing massive retirements on the one hand, there have been equally large-scale recruitments, on the other hand. The moot result has been that there is large gap, both in experience, as well as in knowledge. A good part of the knowledge gap is compounded by the absence of comprehensive and contemporary literature on Credit Monitoring. Consequently, a lot of Credit Monitoring is learnt only through learning from others.

While larger banks are better off as they have well established training systems and manuals on Credit Monitoring, the same cannot be said for smaller Banks. It is in this context, that "Credit Monitoring - A Trainer's Writings for Bankers", authored by Dr. T. C. G. Namboodiri, is a useful and timely arrival. The book is compact and covers the functions of Credit

Monitoring end-to-end - from the time a banker sanctions a loan, till the loan reaches its logical conclusion.

The book is different, firstly, because it deals completely with Credit Monitoring - as against most other books which deal mainly with Credit and devote just a portion towards Credit Monitoring. Moreover, in this book, essential elements of the subject, such as how to monitor ledger accounts, how to carry out inspections, nuances of insurance, details of MSOD and QIS returns and their role in monitoring are covered in considerable detail. By reading the book, the reader will be able to get deep insights into various aspects of Credit Monitoring - including how to handle ground-level situations.

The author's style of writing shows his understanding of the practical side of the subject. Numerous examples quoted in the book relate to real-life hsppenings and brings out the author's front-line experience in Credit and Credit Monitoring. As such, readers would be able to relate these to some of their own experiences in their Credit Departments.

The book also makes references to several classroom interactions, which bring together situations experienced by various participants and thereby provide reader with diverse examples from various parts of the country. While the book is comprehensive and current, it is also interspersed with many anecdotes which serve to keep the reader's interest .

Stress in assets in present times has also led to increasing tempo of rescheduling and restructuring. These activities are under sharp regulatory focus and a host of guidelines have been issued by Reserve Bank of India on the subject. It is important for credit officials posted, both, in branches and Administrative Offices, to be abreast with these directives so that there are no breaches. Adequate knowledge of Credit Monitoring will result in equipping officials to handle their portfolios in a much more competent and professional manner, which ultimately will translate to improved asset quality for banks.

The book under review contains informative chapters on various aspects of credit monitoring such that it would assist reader in understanding the subject thoroughly and being up to date on the topic.

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2.	Alchemists : Inside the Secret World of Central Bankers	Neil Irwin	Headline Publishing Group, 2013
3.	Anti-Money Laundering / Anti-Terrorism Financing & Know Your Customer : Bankers' Handbook	S. S. A. Zaidi	Snow White, 2013
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7.	Barons of Banking : Glimpses of Indian Banking History	Bhaktiar K. Dadabhoy	Random House (India), 2013
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