Basel II - CRAR compliance and Bank Branch Audit

(Mainly with reference to credit risk and the standardized approach)

- CA Pranjal D. Joshi

In April 2007, RBI has come out with the final guidelines for implementation of new capital adequacy framework (Basel II norms), which will be applicable to the banks having operational presence outside India, by March 2008 and for the remaining banks by March 2009.

Of the 3 risks prescribed under pillar I of the Basel II norms, credit risk claims the largest share of the regulatory capital. The computation of capital charge for credit risk has undergone the fundamental change under the Basel II norms. Since as auditors of the bank branches, we may be required to certify the statements (risk weighted assets statement) complying as per these revised guidelines, an effort has been made in this article to explain the general information about Basel II norms, important concepts under it and procedural guidelines for preparation of credit risk computation statements.

Before that, brief introduction of BIS & BCBS has been given for general understanding of the origin of RBI guidelines.

1.0 - Brief Introduction of BIS & BCBS –

1.1- BIS i.e. The Bank for International Settlements was established on 17th May, 1930 having its head office in Basel, Switzerland. It is the bank of central banks which acts as a centre for economic and monetary research. It also acts as a prime counterparty for central banks in their financial transactions. BIS currently has 55 member central banks which includes Indian central bank i.e. Reserve Bank of India.

1.2- BCBS stands for Basel Committee on Banking supervision is formed by the BIS in 1974 in order to enhance understanding of key supervisory issues and to improve the quality of banking supervision worldwide. In 1988, the Committee first introduced a capital measurement system commonly referred to as the Basel Capital Accord. This system provided for the implementation of a credit risk measurement framework with a minimum capital standard of 8%. (But, RBI prescribed a higher standard of 9%) Last year, in June 2006 the committee issued a comprehensive version of Basel II. It describes a more comprehensive measure and minimum standard for capital adequacy. It seeks to improve on the existing rules by aligning regulatory capital requirements more closely to the underlying risks that banks face.

1.3- Pronouncements, recommendations and suggestions of BIS or BCBS although do not carry any legal force (it is not the intention also) it is for the benefit of banking industry all over the world.

2.0 - Implementation of Basel II norms In India

2.1- Existing guidelines –

In order to strengthen the capital base of banks, RBI introduced a risk asset ratio system which was based on Capital Accord, 1988 issued by BCBS. Under the system, the balance sheet assets, non-funded items and other off-balance sheet exposures are assigned prescribed risk weights and banks have to maintain unimpaired minimum capital funds equivalent to the prescribed ratio on the aggregate of the risk weighted assets and other exposures on an ongoing basis.

2.2- Shortcomings of existing capital accord – Some of the shortcomings were

- Non-differentiation of credit quality.
- Non recognition of credit risk mitigation techniques.
- No impact on maturity structures.
- Non consideration of operational risk element.
- Absence of supervisory mechanism etc.

2.3- Current changes –

In order to remove such shortcomings, BCBS in June 2006 came out with revised guidelines pertaining to capital measurement & capital standards (Basel II). RBI has also therefore accepted the recommendations and consequently came out with the new guidelines (finalized in April 2007) on that basis.

3.0 - Approach to implementation & Effective dates

3.1- The Revised Framework consists of three-mutually reinforcing Pillars – (i) minimum capital requirements, (ii) Supervisory review of capital adequacy, and (iii) Market discipline. The first pillar deals with maintenance of regulatory capital to be calculated for 3 major components of risk - credit risk, market risk and operational risk. The second pillar is concerned with the supervisory review process by national regulators for ensuring comprehensive assessment of the risks and capital adequacy of their banking institutions and the third pillar provides norms for disclosure by banks of key information regarding their risk exposures and capital positions and aims at improving market discipline.

Since the present article mainly deals with operational guidelines applicable to bank branches, the focus will be mainly on pillar I.

3.2- For computing minimum capital requirements under Pillar I, although the framework offers different options it has been decided by RBI that all commercial banks in India (excluding Local Area Banks and Regional Rural Banks) shall adopt by the effective dates –

- Standardised Approach (SA) for credit risk
- Basic Indicator Approach (BIA) for operational risk and
- Standardised Duration Approach (SDA) for market risk computation.

3.3- Important effective dates in this regard are as follows –

- Foreign banks operating in India and Indian banks having operational presence outside India should comply with Revised Framework w.e.f. **31st March, 2008.** (e.g. – SBI, Bank of Baroda, Bank Of India etc.)

- All other commercial banks (excluding Local Area Banks and Regional Rural Banks) shall migrate to Revised Framework by not later than **31st March, 2009**.

4.0 - Operational guidelines for implementation

4.1- As far as computation of capital charge for credit risk is concerned, the system generally followed currently i.e. preparation of risk weighted assts statements by individual branches and its consolidation at H.O. through zones or circles will be continued, but with preparation of branch wise statements complying with revised guidelines.

4.2- Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk. Legal risk includes, but is not limited to, exposure to fines, penalties, or punitive damages resulting from supervisory actions, as well as private settlements. Under the Basic Indicator Approach, banks must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (denoted as alpha which has been specified @15%) of positive annual gross income. Operational risk in most of the cases will be calculated at head office / consolidated level.

4.3- Market risk is defined as the risk of losses in on-balance sheet and off balance sheet positions arising from movements in market prices.

The focus of article will now be concentrated to computational part of credit risk as it will be applicable to almost all branches.

5.0 – Credit risk measurement (The Standardized Approach)

5.1- The Standardized Approach (which banks have to adopt by effective date) helps to measure credit risk in a standardized manner, supported by external credit assessments.

5.2- Under the new capital adequacy framework, all exposures are broadly classified as under –

Performing Assets (Both Fund Based and Non-fund based) -	Non-Performing Assets -
➢ Claims on Domestic Sovereigns ➢ Claims in foreign sovereigns ➢ Claims on Public Sector Enterprises	➢ Residential Mortgage Loans– (a) On which provision is < = 20 % (b) On which provision is

➢ Claims on Multilateral development banks, BIS & IMF ➢ Claims on banks ➢ Claims on Primary Dealers ➢ Claims secured by residential mortgages (i.e. residential properties occupied or rented by borrower) ➢ Claims secured by commercial real estate ➢ Claims on corporates ➢ Claims included in regulatory retail portfolio ➢ Staff Loans ➢ Capital market exposures ➢ Consumer credit (Personal Loans) ➢ Off Balance sheet items incl. undrawn fund based limits	< = 50 % (c) On which provision is > 50 % ➢ Other than residential Mortgage Loans– (a) On which provision is < = 20 % (b) On which provision is < = 50 % (c) On which provision is > 50 % (a) on which provision is <= 15% provided it is fully secured against Land & Buld / Machinery in working condition

Such broad categories, as above will be further reclassified as per possible risk weights applicable under such category. For e.g. – claims on corporates may be divided first in resident & non-resident, then resident corporates may further be classified in 6 sub-categories based on various ratings as different ratings will carry different risk weights. Individual banks may specify their own classification / reclassification worksheets complying with RBI guidelines modified suitably to accommodate their internal MIS.

5.3- Use of External Credit rating agencies –

(i) In respect of portfolio relating to corporates (over Rs. 10 crores), foreign banks and foreign sovereigns rating wise break up is to be given.

(ii) Ratings must be provided by rating agencies approved by RBI, and the banks internal ratings should not be used for calculating risk weighted assets. Further such ratings must have been reviewed by rating agencies at least once in last 15 months.

(iii) Mapping of ratings will be done as different ratings will carry different risk weights. While unrated entities will carry 100 % risk weight (thereby entailing 9% capital charge), highly rated entities will get risk weight of only 20 %. Poor ratings may lead to 150% risk weight as well.

(iv) Short term ratings (to be applied for exposures with less than 1 year maturity except for cash credit) will be different from long term ratings and are to be used for such finances only. Provided however, where a long term (or short term) exposure warrants risk weight of 150%, all unrated exposures whether short term or long term should also receive 150% risk weight.

(v) In case of multiple ratings received for the borrower with different risk weights, higher risk weight (in case of 2 ratings) and second lowest risk weight (in case of more than 2 ratings) should be adopted.

5.4- Credit risk Mitigation techniques (CRM) –

(i) CRM refers to different techniques adopted by bank to mitigate the credit risk. Revised framework recognizes 3 important CRM techniques viz – (a) Collateralized transactions (b) On-balance sheet netting, and (c) Guarantees by some recognized guarantors. In case of collaterals & netting, the exposure is reduced by the value of collaterals after adjustment for volatility, currency fluctuations and maturity mismatches whereas in case of guarantee, there is substitution of risk weight of the guarantor in place of that applicable to the underlying counterparty.

(ii) Eligible financial collaterals for recognition as CRM are –

Eligible financial collateral -	To be valued at –
Cash & FDR of banks	at full value
NSC & KVP	face value + accrued interest – premature withdrawal penalty
Securities issued by Central or State Govt.	at current market price
LIC	Surrender value
Gold	to be adjusted for value at 99.99% purity level
Equities incl. bonds listed on recognized stock exchanges & forming part of BSE Sensex, BSE 200, S&P CNX Nifty, Nifty Junior or any other recognized stock exchange within bank's jurisdiction	at market value
Rated debt securities having ratings above specified	at market value
Other specified unrated debt securities, and	at market value
Mutual Funds investing in any of above means and of which NAV is quoted daily	at market value

(iii) Other securities viz. stocks, debts, Land and Building, Plant & Machinery are not recognized as eligible financial collaterals and hence not to be considered.

(iv) CRM is allowed only on account by account basis and is to be recognized only if it has original maturity of over 1 year / residual maturity of over 3 months. Appropriate adjustment to be made for

maturity mismatch i.e. where CRM matures before maturity of exposure.

(v) Fundamental rule to remember is "No transaction in which CRM techniques are used should receive a higher capital requirement than an otherwise identical transaction where such techniques are not used" i.e. CRM is not to be recognized if adjusted net exposure is more than original exposure (ledger o/s balance)

(vi) If guarantee is to be adopted as CRM then it must be direct, explicit, irrevocable and unconditional. It must be provided by acceptable guaranteeing institutions. The protected portion under such eligible guarantee is assigned risk weight of protection provider and not the borrower.

(vii) On-balance sheet netting (as CRM) is permitted as between loans/advance and deposits only when the bank has a legally enforceable netting arrangement involving specific lien with proof of documentation.

(viii) In case there are multiple CRM's for one exposure, exposure will be sub-divided into portions covered by each type of CRM technique.

5.5- Application of "Haircuts" –

(i) To take care of possible future fluctuations in value of exposures and collaterals, adjustments are required to be made which are called as "Haircuts". These may be referred to as adjustment prescribed in percentage terms.

(ii) Haircuts are of 3 types – Haircuts on exposures (H_e), Haircuts on collateral (H_c), and Haircuts for currency mismatch (H_{fx}).

(iii) Although, there are two ways of calculating the haircuts - (a) standard supervisory haircuts, using parameters set by the Committee, and (b) own-estimate haircuts, using banks' own internal estimates of market price volatility, banks in India shall use only the standard supervisory haircuts for both the exposure as well as the collateral.

(iv) Haircuts (He) will apply to exposures to all counterparties where the bank desires to avail of credit risk mitigation benefits and will be determined by the maturity of the exposure, external rating assigned to the exposure and the counterparty category.

(v) (He) will be the premium factor while (Hc) will be the discounting factor. The standard supervisory haircut for currency risk (Hfx) where exposure and collateral are denominated in different currencies has been prescribed to be 8%.

6.0 - Illustrations, charts and computation

(Table 6.1)

Risk weight mapping of Long Term Ratings of domestic rating agencies –

Long term ratings of the chosen credit rating agencies operating in India	Standardised approach risk weights
AAA	20%
AA	30%
A	50%
BBB	100%
BB & below	150%
Unrated	100%

(Table 6.2)

Risk weight mapping of Short Term Ratings of domestic rating agencies –

Short term ratings				Risk weights
CARE	CRISIL	Fitch	ICRA	
PR1+	P1+	F1+	A1+	20%
PR1	P1	F1	A1	30%
PR2	P2	F2	A2	50%
PR3	P 3	F3	A3	100%
PR4 & PR5	P 4 & P5	B,C, D	A4 / A5	150%

(Table 6.3)

Standard Supervisory haircuts on collaterals –

Issue rating for debt securities	Residual Maturity	Sovereigns	Other issues
AAA to AA PR1/P1/F1/A1	≤ 1 year	0.5	1
	> 1 year, ≤ 5 years	2	4
	> 5 years	4	8
A + to BBB- PR2/P2/F2/A2; PR3/P3/F3/A3 and Unrated bank securities (as specified below)	≤ 1 year	1	2
	> 1 year, ≤ 5 years	3	6
	> 5 years	6	12
Main index equities[16] (including convertible bonds) and Gold		15	
Other equities (including convertible bonds) listed on a recognized exchange		25	
Mutual funds		Highest haircut applicable to any security in which the fund can invest	
Cash in the same currency		0	

(Table 6.4)

Standard supervisory Haircuts on exposures –

Counterparty	Maturity (years)	External rating	Haircut for exposure (%)
Sovereign	< 1 year	AAA-	0.5
Sovereign	> 5 years	A+	6.0
Bank	< 1 year	AAA-	1.0
Bank	> 5 years	A+	12
Corporate	1 to 5 years	AAA-	4
Corporate	Irrespective of maturity	Unrated	25
Individuals	Irrespective of maturity	Unrated	25

6.5 - Illustration of CRM and calculation of net exposures –

Particulars	Case 1	Case 2	Case 3	Case 4	Case 5
Type of exposure	Machinery Purchase Loan	Loan against Bank FDR	Personal Loan Partly secured by NSC	Loan against Shares	Corporate Loan
Exposure	Rs. 100	Rs. 100	Rs. 100	Rs. 100	Rs. 100
Maturity of exposure	5 yrs	1 yr.	3 yrs.	1 yr.	2 yrs.
Rating of exposure	Unrated	Unrated	Unrated	Unrated	BB

Collateral	Rs. 150	Rs. 115	Rs. 50	Rs. 160	Rs. 100
Maturity of collateral		3 yrs.	3 yrs.		2 yrs.
Nature of collateral	Hyp. Of Machinery	Bank FDR	NSC	Non index shares	Sovereign
Rating of Collateral					A

Exposure	Rs. 100	Rs. 100	Rs. 100	Rs. 100	Rs. 100
Haircut for exposure **Refer table 6.4**	N.A.	N.A.	25 %	25 %	15 %
Exposure after haircut (i)	Rs. 100	Rs. 100	Rs. 125	Rs. 125	Rs. 115
Collateral	0	Rs. 115	Rs. 50	Rs. 160	Rs. 100

Haircut for collateral **Refer table 6.3**	N.A.	0 %	0 %	25%	3%
Collateral after haircut (ii)	0	Rs. 115	Rs. 50	Rs. 120	Rs. 97
Net exposure (i – ii)	Rs. 100	Rs. 0	Rs. 75	Rs. 5	Rs. 18

Risk Weight **Refer table 6.1**	100%	100%	100%	100%	150%
RWA	Rs. 100	Rs. 0	Rs. 75	Rs. 5	Rs. 27

Notes –

1. In case I - no need to apply any haircut as bank does not have any financial collateral (machinery is not eligible financial collateral).
2. In case II - no haircut to be applied as financial collateral is FDR. Further net exposure will be zero as value of collateral after haircut is more than value of exposure after haircut.

7.0 - Concluding remarks

At branch level, aggregate net exposures under each sub-category of main categories as specified above in 5.2 will be computed. For doing so, worksheets for account wise calculations are necessary as availability & utility of CRM's will be on account by account basis only, thereby necessitating applying of suitable haircuts to such accounts. This will increase the work of branch staff and verification by the auditors. The audit program need to be suitably modified in order to cover the verification of these statements. RBI has emphasized the necessity of legal certainty for recognizing of CRM by banks which casts the responsibility on branch auditors who will certify the same.

Implementation of Basel II norms is at its preliminary level as banks are expected to migrate to advanced approaches for credit risk & operational risk computations in days to come. By the time banks adopt such advanced approaches, Basel III may be ready which is already said to be under preparation for identifying & quantifying other risks that bank face which are currently covered under residual risk category of Pillar II. This will require continuous knowledge updation by bank staff and its auditors.