



## Capital Adequacy Norms under BASEL Frame work : Impact on Indian Banking with Special Reference to State Bank of India, Jharkhand

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*The capital structures of banks are different from those of other manufacturing and trading organizations. Banks use public deposits as funds which are short term in nature. At the same time, the assets created by the banks using public deposits are more vulnerable in nature as compared to manufacturing or trading organization. This unique nature of banks exposes the banks to insolvency risk. With the efforts of Bank for International Settlement (BIS), a committee was formed known as BASEL committee on risk management of banks. Though initially the focused area of the committee was G-10 countries but gradually due to globalization, a need for common risk management framework was felt by almost all the countries across the world. In the same line, RBI made the Basel norms mandatory for banks in India since 2009 with minor modifications.*

**Key Words :** BASEL Accord, CRAR, NPAs RWAs.

### Introduction

Basel norms are gradually penetrating into the Indian Banking System towards ensuring risk management of banks. The core area of the BASEL framework deals with the capital adequacy requirements by the banks. Capital adequacy is required to be maintained by the banks to avoid insolvency risk. This capital is also known as “regulatory capital”<sup>1</sup>. The calculation of capital adequacy is based on the concept of ‘expected loss’<sup>2</sup> and ‘unexpected loss’<sup>3</sup>. Expected losses are calculated on the basis of risk weights assigned to different classes of assets. On the other hand 9 per cent of the total risk weighted assets (expected loss) should be kept as capital by the banks. As Indian banking is passing through a nascent stage of risk management practices, banks are using a uniform set of risk weights provided by RBI to calculate total risk weighted assets for the assessment of expected loss. As banks are having different risk experiences in different risk classes of assets, a uniform set of risk weights may lead the banks to a situation of over capitalization or under capitalization. At the same time, the 9 per cent<sup>4</sup> capital requirement of the total risk weighted assets may also not prove sufficient across banks to mitigate insolvency risk.

In India, Narashimhan Committee appointed by the Government had submitted its report on banking reforms in the early 1990s. The committee had observed that the capital ratios of Indian banks were generally low and that some banks were seriously undercapitalized. The Basel framework was adopted by the RBI, prescribing a higher norm of 9% on risk weighted assets (as against 8% by the Basel Accord) for all banks operating in India.

This paper seeks to throw light on the impact of regulatory capital requirement under Basel frame work on the Indian public sector banking with special reference to State Bank of India in Jharkhand.

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### **Research Objectives**

The paper has the following objectives :

1. To assess the sufficiency of regulatory capital in mitigating insolvency risk of banks.
2. To assess the impact of higher capital requirements on public sector banks.
3. To assess the impact of higher capital requirements on the government in case of public sector banks and nationalized banks.

### **Research Methodology**

The type of the research is both descriptive and diagnostic. The research is descriptive as it is based on in depth study of BASEL norms and its implications in Indian banking. Secondary data have been used for the purpose of research.

The sources of data are RBI, BASEL committee documents, BASELII disclosures by various banks and SBI's annual report (2007-08).

Variance ( $\sigma^2$ ) and standard deviation ( $\sigma$ ) of Gross Non-Performing Assets (NPAs) of public sector banks have been calculated to find the actual deviation of Gross NPAs in contrast with the Regulatory Capital requirement suggested by the BASEL committee to mitigate credit risk of the banks. Capital Requirement to Assets Ratio (CRAR) refers to 9 per cent of Total Risk Weighted Assets (RWAs) for credit risk, market risk and operational risk of a bank which should be in the form of capital to be maintained by that bank. In order to calculate capital for credit risk, risk weights are assigned to all on-balance assets items (excluding trading book investments). For off-balance items, Credit Conversion Factors are used to convert the items first into Credit Equivalent Amounts and then after putting them into appropriate categories risk weights are assigned to them as per counterparties to find the required capital.

### **Discussion and Findings**

#### **1. Expected & Unexpected Losses are Uniform across Banks**

As banking industry in India are still in a nascent stage of developing internal risk management modes, RBI has stipulated that to begin with banks can adopt the standardized approach<sup>5</sup> to credit risk and market risk assessment.

Credit risk assessment under Basel framework is based on assigning risk weights to all assets (excluding investments under trading book) both on balance sheet and off balance sheet including Over the Counter (OTC) derivatives<sup>6</sup>. Banks are required to get their borrowers rated from one of the credit rating agencies approved by RBI.

Indian Banking is at nascent stage of risk management, therefore, it may not be possible for all the banks to get their borrowers rated. For this RBI has assigned risk weights to all assets for convenience of the banks. These risk weights are basically reflecting expected losses on different items. These uniform risk weights for all the Banks is appearing to be irrelevant. For, banks may create charges on loans differently. Therefore, risk weights must differ across banks working in different regions. If banks follow uniform rates, it may lead to the banks in a situation of overcapitalization or under capitalization.

Further, as per BASEL norms, a bank is required to hold capital equal to 9% of the risk weighted assets of the bank. This 9% is basically representing unexpected losses. When expected losses are managed by proper provisioning, unexpected losses erode the capital

and hence, a bank is required to hold capital for meeting unexpected losses. Unexpected loss is standard deviation of expected loss. In this light, 9% Capital Adequacy Ratio (CAR) suggested by Basel framework does not appear to be adequate for all the banks. For, in different and dynamic business environment this unexpected loss element can fluctuate from bank to bank.

In case of specific market risk capital charge which reflects the issuer specific risk the range is again 9%. This uniform range cannot again be made applicable for all the banks in different business environment.

In case of operational risk capital charge calculation, committee has fixed the value of =15%<sup>7</sup> on the basis of industry wide experience in relation to operational losses and gross income of the banks. The value of can differ across economies and even across regions within an economy due to difference in factors affecting various elements of operational risk.

In case of equities, a specific risk charge<sup>8</sup> of 9% has been fixed irrespective of the fluctuating credit rating of the issuer. The general market risk is also 9% in case of equities which is purely an estimation. Similarly, in case of forex open position & gold open position, specific and general market risk which is again based on estimation.

In case of risk weights for forward rate agreement / interest rate swaps for credit risk weights the notional principal amount of each instruments is to be multiplied by the conversions factor ranging from 0.5% to 1.0%. The adjusted value thus obtained shall be multiplied by the risk weight allotted to the relevant counter party which again ranges from 0 to 100%. Eventually, these instruments are again required 9% capital requirement. In India, vertical disallowances<sup>9</sup> and horizontal disallowances<sup>10</sup> are not allowed until a bank has short position in derivatives. This means that a bank having only long positions in derivatives will lead to higher capital charges for general market risk.<sup>11</sup>

**Table : 1**  
Year wise Gross NPAs and their Standard Deviation of PSBs in India

FY	Gross NPA % (X)	(X - $\bar{X}$ )	(X - $\bar{X}$ ) <sup>2</sup>
06	3.6	1.1	1.21
07	2.7	0.2	0.04
08	2.2	-0.3	0.09
09	2.0	-0.5	0.25
10	2.2	-0.3	0.09
11	2.3	-0.2	0.04
$\sum X = 2.5$			$\sum (X - \bar{X})^2 = 1.72$

Source: www.rbi.org.in

$$\text{Variance ( } s^2 \text{ )} = \frac{\sum (x - \bar{x})^2}{n - 1} = \frac{1.72}{5} = 0.344$$

$$\text{Hence, S.D ( } s \text{ )} = \sqrt{0.344} = 0.59 \text{ or } 0.6\%$$

As per Basel Norms, banks need to keep 9 percent of their total risk weighted assets as capital. The above table shows that the standard deviation of GNPA's of public sector banks is far low than the required regulatory capital. This is clearly indicating that the regulatory requirement of 9% capital for credit risk (unexpected loss) is quite high than the actual credit loss of PSBs.

## **2. Over Capitalization of Public Sector Banks**

From regulatory perspective, over capitalization means that a bank holds more than 9 per cent of capital to its total risk weighted assets. In case of public sector banks and nationalized banks holding excessive capital expenditure of the government.

**Table : 2**  
**Capital Adequacy of Public Sector Banks (2007-08)**

<b>Banks</b>	<b>Capital Adequacy Ratio (CAR in %)</b>
State Bank of Bikaner & Jaipur	13.50
State Bank of Travancore	12.68
Andhra Bank	11.61
Oriental Bank of Commerce	12.12
State Bank of Patiala	12.50
Canara Bank	13.25
Bank of India	12.95
State Bank of Mysore	11.73
State Bank of Indore	11.31
Punjab National Bank	12.96
Corporation Bank	12.09
Indian Bank	12.86
Syndicate Bank	11.22
Bank of Baroda	12.91
Indian Overseas Bank	11.96
State Bank of Hyderabad	12.35
Allahabad Bank	12.04
Bank of Maharashtra	10.26
Union Bank of India	12.51
Dena Bank	11.09
Central Bank of India	10.42
State Bank of India	13.47
UCO Bank	10.09
IDBI Bank	11.95
Punjab & Sind Bank	11.57
United Bank of India	11.88
Vijaya Bank	11.22

*Source : The Analyst, The Icfai University Press, October 2008*

- ♦ Almost all public sector banks are holding capital more than 9% of their risk weighted assets as required by Basel Norms. Over capitalization leads to lower returns on capital for the banks.

## **3. Increasing capital needs of Public Sector Banks**

On the basis of Projected Risk Weighted Assets, Public Sector Banks projected capital requirements are increasing throughout the period mentioned in the table below.

**Table : 3**  
Capital Needs of Public Sector Banks (Rs. Crore)

Year	Projected Risk Weighted Assets	Projected Capital Requirement
2008	22,12,938	1,99,164
2009	27,61,143	2,48,503
2010	32,96,979	2,96,728
2011	39,35,122	3,54,161
2012	46,94,903	4,22,541

Source : [www.rbi.org.in](http://www.rbi.org.in)

- ♦ The above table clearly indicates that both projected risk weighted assets and projected capital requirements of public sector banks are increasing throughout during the above mentioned time span. The increasing risk weighted assets indicate deteriorating assets qualities of the banks in future. Higher risk weights will attract higher capital requirement to be maintained by the banks. In this situation, banks are getting expose to the risk of low returns of capital.

#### 4. Capital Adequacy under Basel-III Vs Existing Norms

BASEL III emphasizes on maintaining higher conservation buffer and countercyclical buffers. It stresses on maintaining equity form of capital rather than debt sources.

**Table : 4**

Particulars	Basel-III Norms	Existing RBI Norms
Common Equity (after deduction)	4.50%	3.6%
Conservation Buffer	2.50%	Nil
Countercyclical buffer	0-2.5%	Nil
Common Equity (conservation buffer+ countercyclical buffer)	7-9.5%	3.6%
Tier-I (including the buffers)	8.5%-11%	6%
Total Capital (including the buffers)	10.5 - 13%	9%

Source : Basel Committee Documents, RBI, Basel-II Disclosures by Various Banks

- ♦ The Banks are all set to adopt the Basel-III practices by 2013. The above table indicates that the new Basel-III guidelines focus on maintaining buffers for conservation and counter cycle. These buffers will put further pressure on the capital maintenance by the banks.

#### 5. Increasing Financial Risk

Financial risk refers to a situation of having more debt capital in the capital structure of an organization. High debt proportion in the capital structure indicates high fixed obligation on the part of the organization. High regulatory capital requirement needs additional capital to be raised from the market. Issue of securities in the form of preferences, debentures, other hybrid instruments increase fixed obligation in terms

of dividend and interest in case of preferences and debenture respectively. This increase leads to increased financial risk for banks.

Subordinated debts refer to those debt issues which are subordinated to claims of other creditors. To be eligible for inclusion in Tier 2 capital, the instrument should be fully paid up, unsecured, subordinated to claims of other creditors, free of restrictive clauses and should not be redeemable at the instance of the holder or without the consent of the Reserve Bank of India.

**Table : 5**  
Subordinated Debt Issues Made by SBI (2005-06 & 2006-07)

Type of Capital	Amount (Rs. Crore)	Average Coupon (%) Per Annum, Payable Annually
Innovative Perpetual Debt Instruments	2,507.05	6.79
Upper Tier II Subordinated Debt	13,966	9.21
Lower Tier II Subordinated Debt	6,490.64	8.93
<b>Total</b>	<b>22,963.69</b>	

Source: SBI Annual Report 2007-08

PSBs and SBI group, where the government holds controlling interest have a substantial share in the banking business. If these banks have to raise additional capital, the government may not be in position to pump in the desired capital. In that event, PSBs will have to raise funds from the market which may result in dilution of the government's stake. If the government has to retain the controlling stake in these banks, it has to introduce newer debt instruments which can qualify as Tier II or Tier III capital.

#### 6. Increasing Fiscal Burden on Government

In case of nationalized banks where cent per cent stake is held by the government, increasing capital requirements of nationalized banks translate into increasing fiscal expenditure of the government. The Table given below shows net contribution made by the government since 1991 to Feb, 1998.

**Table :6**  
Capital Contribution by the Government to the Nationalize Bank<sup>a</sup> (Rs. billion)

Items	Amount
Upto March 1992	33.00 <sup>b</sup>
1992-93	7.00 <sup>c</sup>
1993-94	57.00 <sup>c</sup>
1994-95	52.87 <sup>b</sup>
1995-96	8.50 <sup>c</sup>
1996-97	15.09 <sup>c</sup>
1997- Feb 1998	27.00
<b>Total</b>	<b>200.46</b>
Capital Returned to the Govt.	6.43
<b>Net Contribution</b>	<b>194.03</b>

Source : [www.rbi.org.in](http://www.rbi.org.in)

- a. Including new banks of India      b. Capital Contribution      c. Capital Allocation

**8. Regulators Ignore the Role of Profits in Deciding Capital Adequacy of Banks**

Raising additional capital even when a bank has a good volume of profit with it again goes against the optimum capitalization theory of the bank. Capital requirement should be decided in the light of profits only. Otherwise, the cost of fund will increase and additional issues of fixed income bearing securities will lead to increased financial risk for the bank.

The abnormal losses exceeding the provisions and reserves are meant to be absorbed by the capital. Portfolio models provide 'loss distributions' for credit risks and the probability that losses hit at each level. This facilitates the estimation of various loss levels for each portfolio. Thus, it is possible to determine whether regulatory capital is moderately conservative or is in excess. Besides, if the loss provisioning is not conservative enough, capital should be sufficient to absorb the losses in excess of the average.

**9. Other Impacts :**

1. PSBs and SBI group, where the government holds controlling interest have a substantial share in the banking business. If these banks have to raise additional capital, the government may not be in position to pump in the desired capital. In that event, PSBs will have to raise funds from the market which may result in dilution of the government's stake. If the government has to retain the controlling stake in these banks, it has to introduce newer debt instruments which can qualify as Tier II or Tier III capital.
2. The Indian capital market has not matured enough as compared to markets in the developed countries. Banks may face difficulties in raising the required additional funds to meet the regulatory requirements.
3. Credit rating culture has not penetrated sufficiently in India. There are very few credit rating agencies. The RBI will have to approve rating agencies for the purpose of allowing banks to use their own ratings for quantification of credit risk.
4. The internal rating practices in a majority of the banks are not sophisticated enough to take care of Basel II requirements.
5. Some of the private banks are tech-savvy. Competition from the private and foreign banks has also enthused PSBs to initiate the process of adoption of modern technology. Yet, the entire banking sector will be required to invest substantial amount in IT to enable banks to be ready for implementation of the new requirements of risk management.
6. There is scarcity of the required skilled staff in the banks. Training may become a big challenge in the process. Even the RBI may face a challenge for training staff for effective supervision as envisaged by Basel II.
7. There are certain gaps in disclosure practices currently being followed by the Indian banks and the requirements under Pillar III. Bank management may face new challenges on this front. Besides, there is a lack of awareness among the Indian public about the effective use of information disclosed.

**Current NPA Position of Banks in Jharkhand**

Risk Weighted Assets are expected NPAs in case of credit risk. Standard deviation of NPAs gives the unexpected credit losses ( NPAs) and requires capital cushioning. In contrast with 10 per cent NPAs by gross value on 31.03.03, the overall NPA ( including written off debt )

has mounted up to Rs. 1687.62 crore as on September 2011 from Rs. 1440.28 crore as on September 2010 in the state as per SLBC, Jharkhand. This is 17.17 per cent increase from September 2010 figures. If we take only two years figures of overall NPA of the state, the standard deviation of NPAs comes out to 17.17 per cent which is quite higher than 9 per cent which is suggested by the current Basel Norms to be maintained in the form of capital. Therefore, a uniform 9 per cent Capital Adequacy Requirement is not a fit all percentage for all the banks working across regions having different risk environment.

#### **Credit Risk Analysis of State Bank of India in Jharkhand :**

**Table : 7**  
Achievement of SBI in Key Parameters as on 31.03.12

Parameters	Amount ( in Rs. Lacs )
Deposit	3247400
Advance	1978000
C: D Ratio	60.91

Source : <http://www.slbcallahabadbank.com/performance.html>

The C:D Ratio of the State Bank of India is slightly higher than the state's average ( with Lead Banks ) of 59.32 per cent. This indicates that the credit exposure of SBI is higher than the state's average.

**Table : 8**  
Proportion of advances of SBI in Jharkhand

Areas	Amount ( in Rs. Lacs )	% of Advance to Total
Priority Sector	1117205.99	56.48
Agriculture	207606	10.50
MSME	566130	28.62

Source : <http://www.slbcallahabadbank.com/performance.html>

The percentage of priority sector advance to total is higher than advance to agriculture and MSMEs in SBI in Jharkhand. This also indicates towards higher exposure to credit risk in this area.

**Table : 9**  
SBI's position in Restructured Accounts in Jharkhand

As on 31.03.2011		As on 31.03.2012	
Account	Amount( Rs. Lacs )	Account	Amount( Rs. Lacs )
69119	184891	71634	198271

Source : <http://www.slbcallahabadbank.com/performance.html>

There has been a slight increase in the restructured accounts over a one year time. Restructured accounts indicate credit exposure on one hand and management efforts to mitigate credit risk on the other.

**Table : 10**  
Projected C:D Ratio of SBI for December 2011

Projection for December 2011	Actual
52.59	60.55

Source : <http://www.slbcallahabadbank.com/performance.html>



The actual C:D Ratio of SBI was higher than the Projected C:D Ratio for December 2011. In December 2012 it increased to 60.91 which is a slight increase over the previous year's figure. Increasing C:D Ratio is an indicator of increasing credit exposure of the bank in Jharkhand.

**Table : 11**  
Recovery Position of SBI under Government Sponsored Schemes in Jharkhand

PMEGP			SGSY			TOTAL		
Demand	Recovery	%	Demand	Recovery	%	Demand	Recovery	%
5769	2264	39.3	7385	2872	38.89	13154	5139	39.07

Source : <http://www.sbi.co.in/branches/jharkhand/recovery.pdf>

The average recovery of SBI in government Sponsored Schemes comes out to 39.8 per cent which is quite low specially when the proportion of priority sector advance is quite high in the bank's portfolio.

## Conclusion

Banking is undoubtedly one of the most regulated industries, globally, and the rules governing bank capital are one of the most prominent aspects of such regulation. The higher the capital, the higher the number of problem assets that can default before the capital is fully depleted. Thus, greater the bank's capital funds, greater the amount of assets that can default before the bank becomes technically insolvent, and the lower the bank's risk.

Capital for a bank also serves other functions. When a bank has adequate capital, it has ready access to the financial markets, since investors look upon it as a safe investment option. The bank can enter new business and can indulge in risk taking to boost earnings potential.

Financial risk is inherent to banking business, quite incomparable with the traditional manufacturing firms. Hence, only if banks have low risk assets can they remain safe. In practice, however, banking assets are risky. Therefore, banks should increase capital relative to the risks of the assets they hold.

One aspect of bank regulation is to ensure that depositors who do not need to withdraw at present are given enough assurance that they will be paid in the future. Depositors need assurance that the bank has enough (claims on) liquid assets to meet all demands made by depositors. There are four ways to provide this assurance - adequate bank equity capital, deposit insurance, lender of last resort and subordinated debt. Lack of assurance can lead to bank failures and outcomes that are not welfare maximizing. These assurances have an economic role in providing optimal outcomes and therefore, need to be formulated with utmost care.

Regulatory capital, though seen to constrain growth to some extent, reduces the risk of banks expanding beyond their ability or taking undue risks. In the banking industry, the regulatory concept of 'capital' differs substantially from the accounting concept of capital. Regulators include certain forms of debt and loss reserves while measuring capital funds in banks.

In Indian context, as the banking industry is passing through a nascent stage of risk management, the standardized approach to calculate risk weighted assets may not be sufficient for banks in the light of their own risk experiences in different assets class. Higher regulatory capital requirement will lead to higher financial risk for banks and in case of nationalized banks and public sector banks there will be additional pressure on the government related with capital infusion leading to higher fiscal deficit as BASEL III is suggesting to hold capital more in equity form.

Risk Weighted Assets are expected NPAs in case of credit risk. Standard deviation of NPAs gives the unexpected credit losses ( NPAs) and requires capital cushioning,

In contrast with 10 per cent NPAs by gross value on 31.03.03, the overall NPA ( including written off debt ) has mounted up to Rs. 1687.62 crore as on September 2011 from Rs. 1440.28 crore as on September 2010 in the state as per SLBC, Jharkhand. This is 17.17 per cent increase from September 2010 figures. If we take only two years figures of overall NPA of the state, the standard deviation of NPAs comes out to 17.17 per cent which is quite higher than 9 per cent which is suggested by the current Basel Norms to be maintained in the form of capital. Therefore, a uniform 9 per cent Capital Adequacy Requirement is not a fit all percentage for all the banks working across regions having different risk environment.

### Notes

1. Regulatory Capital.
2. Expected Loss.
3. Unexpected loss
4. The CRAR fixed by the BASEL committee was 8 per cent. In the Indian scenario, CRAR has been considered as 9 per cent.
5. Standardized Approach has been suggested by the RBI to the banks to calculate capital for credit risk and market risk.
6. OTC derivatives are not exchange traded derivatives. Counterparty risk exists in these derivatives.
7.  $\alpha=15\%$ , which is set by the BASEL committee relating the industry wide level of required capital, to the industry wide level of the indicator.
8. Specific risk refers to issuer specific risk.
9. While calculating capital charge for general market risk on interest rate related instruments , banks should recognize basis risk and gap risk. This is addressed by a small capital charge ( 5% ) on matched position in each time band which is known as vertical disallowance.
10. While calculating capital charge for general market risk on interest rate related instruments, banks must subject their positions to a second round of off- setting across time bands with a view to give recognition to the fact that interest rate movements are not perfectly correlated across maturity bands ( yield curve risk and spread risk ). This is achieved by a horizontal disallowance.
11. Major component of general market risk is interest rate risk.

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