

Quantitative Aspect of Capital Adequacy Norms in Banks

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Abstract— Deregulation in the financial sector had widened the product range in the developed market. Some of the new products introduced are credit cards, housing finance, derivatives and various off balance sheet items. Thus new vistas have created multiple sources for banks to generate higher profits than the traditional financial intermediation. Simultaneously they have opened new areas of risks also. During the past decade, the Indian banking industry continued to respond to the emerging challenges of competition, risks and uncertainties. Risks originate in the forms of customer default, funding a gap or adverse movements of markets. Measuring and quantifying risks in neither easy nor intuitive. Our regulators have made some sincere attempts to bring prudential and supervisory norms conforming to international bank practices with an intention to strengthen the stability of the banking system. This paper attempts to study the quantitative aspect of Capital Adequacy Norms under the Basel Accords.

Keywords— Risk Management, Tier-I, Tier-II, Risk Weighted Assets.

I. INTRODUCTION

The international banking scene has in recent years witnessed strong trends towards globalization and consolidation of the financial system. Stability of the financial system has become the central challenge to bank regulators and supervisors throughout the world.

The Indian banking scene has witnessed progressive deregulation, institution of prudential norms and an evaluation of international supervisory best practices. M/s. PricewaterhouseCoopers, London, were selected by RBI to undertake a review of the current regulatory and supervisory processes of the RBI with a view to assist in the introduction of risk based regulation and supervision of Indian Banks.

II. RISK MANAGEMENT SYSTEM

Risk management is fast emerging as a science and taking a larger and prominent space in the field of bank management. Risk or the management of the same is not a new concept. Risk Management hitherto has been through intuition, premonition and perception. A structured approach to Risk Management has been elusive to the

Banks for a considerably long time.

The first step towards an organized Risk Management arose through Basel initiatives. The advent of Basel II has certainly brought to focus the pressure on Capital through differential risk weights.

III. REVIEW OF LITERATURE

- ❖ Daniel Tabbush, Head of CLSA Banking Research (2008) in his report stated “Mortgage-loan risk weightings drop from 50% to 35% under Basel II, making them much more profitable in terms of regulatory capital required, while small and medium-sized enterprise (SME) lending can move from 100% to 75%”.
- ❖ Anand Wadadekar (2008) in his study “Basel Norms & Indian Banking System” revealed that Basel II Norms offers a variety of options in addition to the standard approach to measuring risk. Paves the way for financial institutions to proactively control risk in their own interest and keep capital requirement low.
- ❖ Niall S.K. Booker, chief executive officer, HSBC India and chairman of the IBA Committee on Basel II states “There is the possibility that in international markets access may be easier and costs less for banks adopting a more sophisticated approach... however in a market like India it seems likely that the large domestic players will continue to play a very significant role regardless of the model used”.
- ❖ Mandira Sharma & Yuko Nikaido (2007) in their study on “Capital Adequacy Regime in India” examined issues and challenges with regard to the implementation of CRAR norms under Basel II regime in India. They also tried to identify limitations, gaps and inadequacies in the Indian banking system which may hamper the realization of the potential benefits of the new regime.
- ❖ Ernst & Young in their survey in (2008) revealed that Basel II has changed the competitive landscape for banking. Those organizations with better risk systems are expected to benefit at the expense of those which have been slower to absorb change due to increased use of risk transfer instruments. It also concluded that portfolio risk management would become more active,

driven by the availability of better and more timely risk information as well as the differential capital requirements resulting from Basel II. This could improve the profitability of some banks relative to others, and encourage the trend towards consolidation in the sector.

- ❖ **Vyas, et. al (2007)** studied the impact of Capital regulation norms like Basel II on credit growth of Indian banks. The study concluded that capital requirements regulations do not seem to affect credit growth in spite of the growing concerns about the banking stability.
- ❖ **Singla (2008)** studied the financial performance of banks in India in view of increasing globalization and increased competition in the banking industry. He concluded that the financial positions of banks is reasonable, debt-equity ratio is maintained at an adequate level and NPAs also witnessed a decline during the study period.

IV. CAPITAL ADEQUACY NORMS

The Basel I framework defined two minimum standards for acceptable capital adequacy requirements viz., Risk Based Capital Ratio & Asset to Capital Multiple. As a sequel to this, Reserve Bank of India introduced capital adequacy norms for banks in April 1992. Under this system, assets (loans & investments) on and off the balance sheet are assigned definite risk weights (0%, 20%, 50% and 100%). Banks are expected to maintain capital funds, which ensure a minimum capital ratio (Capital to risk weighted assets) of 9% on an ongoing basis. The financial subsidiaries and associates of a Bank should individually meet their respective regulatory capital requirements. In case of any shortfall the Bank shall make good such amount by deducting from its capital funds at 50% from Tier I and 50% from Tier II.

Risk based capital ratio is defined as the ratio of **capital to risk weighted assets**. Assets mean both on balance sheet items (Loans, advances and investments etc) and off balance sheet exposures (Guarantees and Letters of credit etc). As per the accord Banks had to hold a minimum capital of **8%** over the risk weighted assets. Out of the minimum capital to be held, at least **4%** of it should be in the form of Tier I capital. **The asset to capital multiple was set at 12.5**. Tier II capital is limited to **100%** of Tier I capital.

Hence,

Capital Adequacy Ratio (CAR) = Capital / Credit Risk
Capital = Tier I Capital + Tier II Capital

Capital ratio Minimum 8% as per Basel and 9% as per RBI

Credit Risk = sum of Risk Weighted Assets (RWA)

Risk Weighted Assets = Exposure X Supervisor determined risk weights.

In India as a result of Basel I Accord, we saw the introduction of prudential norms such as asset classification, income recognition and capital adequacy. Basel I met the following objectives:

- Strengthened the capital base of Banks
- Created clear and uniform guidelines for all Banks world over
- Reduced competitive distortion among banks.

However, it had many deficiencies like applying uniform risk weight to a pool of assets irrespective of their risk profile, ignoring the importance of operational risk and following a one size fits all approach. Basel Committee on Banking Supervision (BCBS) came up with revised norms in 1999 by plugging the defects of their earlier accord.

The Basel II norms are uniformly applicable to all Scheduled Commercial Banks with the exception of Regional Rural Banks at the consolidated level. The financial institutions recognized for implementing Basel II are: 1) Banks 2) Insurance Companies 3) Mutual Funds 4) Primary Dealers 5) Housing Finance companies 5) Non-Banking Financial Companies and 6) Merchant Banking Companies

Capital Funds

Capital funds for capital adequacy purpose are classified into Tier I and Tier II Capital. Under Tier I again the elements to be included are specified separately for Indian Banks and Foreign Banks. In respect of Indian Banks the elements eligible for treatment as Tier I Capital are

- Paid up capital
- Statutory Reserves
- Other disclosed free Reserves
- Capital Reserves representing surplus arising out of sale proceeds of Assets

The components of Tier II Capital for capital adequacy purpose are:

- **Undisclosed Reserves** (provided they represent accumulations of post-tax profits and not routinely used for absorbing normal or operating losses)
- **Cumulative perpetual preference shares** (should be fully paid up and do not contain any clauses which permit redemption by the holder)
- **Revaluation Reserves** (discounted at 55% while

determining their value for inclusion under Tier II capital)

- **General Provision and Loss Reserves** (Admitted as Tier II capital to a maximum of 1.25% of Total Risk Weighted Assets)
- **Hybrid debt capital instruments** (treat only such instruments as Tier II which have close similarity to equity and are able to support losses on an ongoing basis without triggering liquidation)
- **Subordinated debts**(treated as Tier II) subject to the following
 - Should be fully paid-up and unsecured
 - Should be subordinated to the claims of other creditors
 - Should be free of restrictive clauses
 - Should not be redeemable at the initiative of holder or without the consent of Reserve Bank
 - Should be subject to progressive discount as they approach maturity
 - Should have an initial maturity of not less than 5 years or remaining maturity of not less than 1 year.
 - Shall be reckoned as Tier II only to the extent of 50% of Tier I capital
 - Should be subject to progressive discount as they approach maturity
 - Should have an initial maturity of not less than 5 years or remaining maturity of not less than 1 year.
 - Shall be reckoned as Tier II only to the extent of 50% of Tier I capital
- **Investment fluctuation Reserve** (5% of Total Investments held as reserve for Market risk)
- **Investment in financial subsidiaries and associates** – For capital adequacy purposes following treatment is given
 - If investments of the bank upto 30% of the paid up equity of subsidiary 100% risk weight shall be assigned to such invested amount
 - If investment of the Bank in paid up equity of subsidiary is more that 30% then such invested amount shall be deducted from the Bank’s capital funds at 50% from Tier I and 50% from Tier II

The other Adjustments to Capital Funds are

- Intangible assets & losses (both current & brought forward from previous periods) to be deducted from Tier I
- Deferred Tax Assets being an intangible asset to be deducted from Tier I
- Banks investment in instruments (Equity shares,

subordinated debt instruments, Hybrid debt capital instruments or any other instrument of capital character) in excess of 10% of investing Bank’s capital funds should be deducted at 50% from Tier I and 50% from Tier II Capital.

- Banks should not acquire any fresh stake in a Bank’s equity shares, which will result in Bank’s holding exceeding 5% of the investee Bank’s equity capital.
- The elements of Tier I and Tier II should not include foreign currency loans granted to Indian parties.

To study the impact of Asset quality on Capital let us take three scenarios having the same total asset exposure of Rs 100 crores but with different asset quality. For the purpose of simplicity in assessing asset quality we have taken the assets as falling under three risk categories namely Low, Medium and High risk.

Scenario I

Risk level	Exposure (in crores)	Risk weight	Risk weighted Asset (in crores)
Low	20	20%	4
Medium	30	50%	15
High	50	150%	75
	Total Risk Weighted	Asset	94

CAR = Capital / Total Risk Weighted Asset
 Capital = CAR X Total Risk Weighted Asset
Capital = (9/100) X94 = 8.46 crores

Scenario II

Level of risk	Exposure (in crores)	Risk Weight	Risk Weighted Asset (in crores)
Low	35	20%	7
Medium	30	50%	15
High	35	150%	52.5
	Total Risk Weighted	Asset	74.5

Capital Required = Total Risk Weighted Asset x CAR

$$= 74.5X (9 / 100) = \mathbf{6.70 \text{ crores}}$$

Scenario III

Level of risk	Exposure (in crores)	Risk Weight	Risk Weighted Asset (in crores)
Low	50	20%	10
Medium	30	50%	15
High	20	150%	30
	Total Risk Weighted	Asset	55

$$\mathbf{\text{Capital Required} = 55 X (9 / 100) = 4.95 \text{ crores}}$$

Low composition of low risk exposures and high composition of high-risk exposures in the asset portfolio in Scenario I indicate a poor asset quality and warrant a capital of **Rs 8.46 crores**.

Equal composition of Low, Medium and High-risk exposures in Asset portfolio in Scenario II indicate a Medium Asset quality warranting a capital of **Rs 6.70 crores**.

High composition of low risk Assets and low composition of High risk assets in credit portfolio in Scenario III indicate high quality assets and require **capital of Rs 4.95 crores**.

To conclude:

- Better the asset quality lower is the capital required to be held.
- Hence improving the asset quality helps banks in managing the credit risk in loan book by holding less capital.
- While quantitative tools help in knowing the asset quality of credit portfolio, qualitative tools help in improving the asset quality.
- Hence both qualitative and quantitative tools are required for effectively managing credit risks and thereby the capital to be held.

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