

THE EFFECT OF RISK FACTORS ON THE CAPITAL ADEQUACY RATIO OF BANKS UNDER THE PCA FRAMEWORK

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Abstract: The Banking industry in India is going through a substantial transformation from 2016 onwards with the implementation of Insolvency and Bankruptcy code (IBC) and the introduction of improved Prompt corrective action (PCA) framework by RBI. In 2018, 11 Public sector Banks were put under PCA framework through which RBI has put restrictions on dividend distribution, Branch Expansion and Management compensation. The trigger points which reflects the financial conditions of the banks are CAR, Net NPA and Return on Assets. Capital adequacy ratio (CAR) of scheduled commercial banks is 13.5% which is lower than the global average of 14%. The risk factors which comprises of CAR influences the financial performances of the banks. The study is an attempt to determine the most influencing risk determinants responsible for the deteriorating CRAR in the banks under PCA. Quarterly data over the period 2014-2018 (Dec) has been taken to analyze the relationship between Credit Risk, Market Risk and Operational Risk on Capital Adequacy ratio. The financial reports of the banks under PCA were taken for data collection from the respective banks site.

Keywords: Capital adequacy ratio, Market risk, Operational risk, Credit Risk

I. Introduction

The Banking sector in India is going through a paradigm shift after the introduction of Asset Quality review process and other reforms measures taken by Central banks to invigorate the banking system in India. The implementation of more prudent capital adequacy norms for managing the mounting Non-Performing assets is a step forward in this regard. Insolvency and Bankruptcy code (IBC), recognition of NPA and fresh capital infusion in the PSU Banks are the reforms measures taken by RBI from time to time. RBI has imposed restrictions on 11 Banks under the Prompt corrective action (PCA) with weak financial metrics. These Banks are Dena Bank, Allahabad Bank, United Bank of India, Corporation Bank, IDBI Bank, UCO Bank, Bank of India, Central Bank of India, Indian Overseas Bank, Oriental Bank of Commerce and Bank of Maharashtra. Banks under PCA are considered risky if they fall below the norms on three parameters. These parameters are Profitability, Asset Quality and capital ratio. Profitability refers to the Return on Assets; Asset Quality is determined by the Net Non performing assets (NPA) and capital ratio through the capital to risk-weighted assets ratio (CAR) which is also termed as Capital Adequacy ratio. On the basis of the ratios the banks are categorized into three risk threshold levels. These levels are marked as 1, 2 and 3 where 1 is considered lowest and 3 as the highest. Banks having negative return to assets for two, three and four consecutive years are categorized under threshold 1, threshold 2 and threshold 3 respectively. NPA of 6 percent and less than 9 fall in the first threshold while banks that have NPA between 9 percent and 12 percent comes under second threshold. Those banks which have more than 12 percent of net NPA fall under third threshold level. Banks that have CRAR of less than 10.25 percent but more than 7.75 percent fall under threshold 1 while those with CRAR more than 6.25 percent but less than 7.75 percent fall in the second threshold. The third threshold level comprises of banks whose common equity Tier 1 falls below 3.625 percent. The banks under PCA could lend to select sectors such as retail, MSME and agriculture but are not allowed to lend to corporate rated below AAA. The banks also face restrictions regarding distributions of dividends and remitting profits. Expansion of branch network, compensation of Management and Directors fees along with maintaining higher provisions for NPA are also constricted.

The government allocated Rs 88,139 crore for Bank recapitalization through recap bonds. The 11 PSBs which were under PCA were assigned 52,311 crores. Though the capital situation of some of the banks has improved in the third quarter of 2018, the asset quality still remains an element of concern. According to the recent RBI notification six banks, including Bank of Maharashtra, Bank of India, Oriental Bank of Commerce, Dhanlaxmi Bank, Allahabad Bank and Corporation Bank, are out of the PCA framework this year. A proper risk management mechanism is an essential requirement as sudden credit growth may adversely affect the asset quality of the banks. Risk management is an integral function of the banking system. Proper credit appraisal processes result in reduction of credit risk which is a certain proportion of advances given by the banks. According to

Basel Accord, market risk refers to the risk of loss in balance and off-Balance sheet items due to changes in the market prices which may be equity risk, commodity risk or specific risk. The risk associated with investments made by the banks is reflected by the market risk. The operational risk is taken as indicative of weakness in internal controls and audits, risk management framework, and governance mechanism at bank. The extent of their influence varies with the risk taken into consideration. This paper is an attempt to determine the variables which establish a strong relationship with CAR.

To strengthen the regulation, supervision and risk management in banks across countries after the globalisation era Basel norms were developed by the Basel committee on Banking Supervision-BCBS (1988). It is a global regulatory framework for more resilient banks and the banking system. The purpose of the accord is to ensure that financial institutions have enough capital on account to meet obligations and absorb unexpected losses. India has also accepted Basel accords for the banking system. According to Basel III norms the minimum capital adequacy ratio (CAR) that banks must maintain is 8%. The capital adequacy ratio is a measure of a bank's capital to its risk weighted assets. The capital is divided into two parts-Tier-1 Capital and Tier-2 capital. Tier-1 Capital is the core capital which comprises of equity capital, ordinary Share Capital, Intangible assets and audited Revenue reserves. The Tier-2 capital which is also called supplementary capital comprises unaudited retained earnings, unaudited reserves and general loss reserves. This capital absorbs losses in the event of the company winding up its assets or liquidating. The risk weighted assets (RWA) represents its assets, weighted by their riskiness which comprises of all the risks. The capital to risk weighted assets ratio promotes financial stability and efficiency in the economic system.

$$\text{CAR} = \frac{\text{Total Capital (Tier I capital + Tier II capital)}}{\text{Total Risk Weighted Assets}} \times 100$$

Banks with higher capital adequacy ratio are preferred in terms of safety and financial stability. The Indian scheduled banks are required to maintain a CAR of 9% while Public Sector banks are emphasized to maintain a CAR of 12% as per the RBI norms. The stringent than global norms is debilitating the bank's lending capacity and income generation. To give some breather to the tumbling banking sector RBI had extended the deadline for lenders to lift the capital conservation buffer by March 31, 2020 but retained the same requirement for capital adequacy ratio.

II Literature Review

Ariss and Saredidine (2007) highlighted serious issues related to risk management and the nature of risks arising from the uses of funds of Islamic financial institutions and their implication on the Islamic financial institution. They stressed that other challenges lie ahead of international regulatory bodies in order to cater to other types of risks that are unique to Islamic financial institutions. Kleff and Weber (2008) stressed that the capital level is positively correlated with the profit of the bank. Therefore, the accumulation of the profits provides a higher level of capital growth.

Dániel (2009) conducted analysis on the operational risk aspects of the introduction of the capital adequacy regulation which came into force in the Hungarian banking system in line with Basel II. The author concluded that the conscious management of operational risk and application of more developed methods aimed at managing such risks can contribute to the stability of the financial system.

Odunga & Nyangweso (2013) in their study investigated the effects of credit risk and capital adequacy measures on operating efficiency of commercial banks in Kenya. The study concluded that the operational efficiency and risk based capital ratio are positively and significantly affected by bank's operating efficiency and banks should seek mechanisms to improve their risk based capital ratio in order to improve operating efficiency and remain competitive in the market.

John & Anna (2015) studied the impact of extreme events on the loan portfolios of the Greek banking system. The results show an increase of credit risk during the crisis periods, and the differentiation of risk depending on the size of the banking organization as well as the added capital that will be needed in order to hedge that risk.

Huey-Yeh & Hsiao-Yi (2016) explored whether the effects of risk management factors on the operational performance of banks differed between the two operational methods. The results showed that the banks could enhance their operational performance by managing risks and the effects of the risk management factors on their operational performance differed between the operational methods.

Rufo & John (2017) has examined the credit risk and capital adequacy of the rural banks in the Philippines to investigate how variables affect bank profitability. The analysis showed that capital adequacy has no significant impact on the profitability of rural

banks in the Philippines and it is therefore necessary for the rural banks to examine more deeply if capital infusion would result in higher profitability than increasing debts.

Gabriel & Ene (2018) found that the Capital Adequacy Ratio is largely determined by banks risk-portfolio, deposit level, profitability and asset quality. They concluded that the Deposits level and profitability are positively related & Asset Quality Ratio is negatively related to Capital Adequacy Ratio.

III Objective of the Study

- 1) The aim of the study is to determine the most prominent risk factors affecting the capital adequacy ratio of the banks which came under prompt corrective action framework.
- 2) To determine whether there is a similarity of pattern obtained from each banks.

IV Research Methodology

The data pertaining to credit risk, market risk and operational risk of all the 11 banks who are under PCA framework are collected from individual banks financial statement. Multiple regression analysis across all the banks individually is used to determine the most effective risk factors affecting these banks separately. The quarterly data of the risk factors over the five year period from 2014 till the third quarter of 2018 is collected and analyzed individually to initially determine the most prominent factor and then determine the pattern if it exist among the banks.

$$CAR = \beta_0 + CR \beta_1 + MR \beta_2 + OR \beta_3 + \epsilon_0$$

Where, β_0 =Constant

β_1 = Coefficient of Credit Risk

β_2 = Coefficient of Market Risk

β_3 = Coefficient of Credit Risk

CR = Credit Risk

MR = Market Risk

OR = Operational Risk

ϵ_0 = Error Term

V Result and Analysis

Table 1: Descriptive Statistics of CAR for all 11 banks

Bank	CAR (Min)	CAR (Mean)	CAR (Max)
UCO	7.57	10.122	12.17
Allahabad Bank	6.88	10.19	11.74
Dena Bank	10.10	10.99	11.65
IDBI	6.41(Q3-2018)	11.09	13.09
UBI	7.82	10.47	12.62
Corporation Bank	8.46	10.63	11.89
IOB	7.98	9.737	10.780
Bank of Maharashtra	9.87	11.16	11.94
Central Bank of India	7.87	9.786	10.95
Bank of India	9.41	12.21	13.54
Oriental Bank of Commerce(OBC)	10.25 (Q2-2018)	11.34	13.36

From the table above we observed that IDBI bank has the lowest CRAR of 6.41 in the third quarter of 2018 while oriental bank of commerce (OBC) minimum CRAR is 10.25 in the second quarter of 2018. At the same time the maximum value of CAR in case of OBC is also above the threshold limit of 12% set by RBI which is a good sign. The mean and maximum value of CAR in case of Bank of India is the highest as compared to any banks. Indian Overseas Bank (IOB) has the lowest mean as well as lowest maximum value of CAR. It is observed that only 5 banks –UCO Bank, IDBI, UBI, Bank of India and OBC were able to cross the minimum limit set by Central bank but none of the banks were able to maintain the RBI limit of CAR .

Table 2. Multiple Regression Analysis Result

Banks	Credit Risk				
	Beta	t	Sig	R-Square	Adjusted R-Square
UCO Bank	0.0008531	2.638	0.0231*	0.4531	0.304
Allahabad Bank	2.005e-03	7.798	8.32e-06*	0.8599	0.8217
Dena Bank	0.0004702	3.595	0.00421*	0.5753	0.4594
IDBI Bank	0.0002998	3.266	0.00752*	0.5452	0.4212
UBI	0.0008764	1.956	0.0764**	0.3367	0.1558
Corporation Bank	0.0005058	1.839	0.0929**	0.5128	0.3799
Indian Overseas Bank	-0.0003677	-1.493	0.1636	0.3162	0.1298
Bank of Maharashtra	0.0001987	1.035	0.3230	0.6533	0.5588
Central Bank of India	0.000272	1.064	0.310	0.5499	0.4272
Bank of India	-2.583e-04	-1.494	0.1633	0.3319	0.1497
Oriental Bank of Commerce	0.0006126	2.917	0.0140*	0.7433	0.6746

*Significant at 0.05, **Significant at 0.10

The table shows the credit risk details of all the 11 banks which are under PCA framework. The credit Risk result is only displayed because the other risk-Market risk and Operational risk are not showing statistical significant results It is reflected from Table 2 above that UCO Bank, Allahabad bank, Dena Bank, IDBI Bank, United bank of India (UBI), Corporation Bank and Oriental Bank of Commerce are showing significant relation between Capital adequacy ratio and the credit risk while in case of Indian overseas bank, Bank of Maharashtra, Central Bank of India and Bank of India no significant relationship is seen between CAR and Credit Risk. Table 2 shows that in case of Allahabad bank, the determinants i.e, Credit Risk, Market risk and operational risk explains 82.17% of variations in Capital adequacy ratio. It is also obvious from the table that 67.46% of the variations are also explained in case of Oriental Bank of Commerce.

VI Findings of the Study

It is observed that none of the banks are able to comply with the RBI norms of Capital Adequacy ratio of 12%. Among all the banks Oriental Bank of Commerce is showing better CAR with lowest value at 10.25%, mean at 11.34% and highest at 13.36% (Table 1)

The most influencing factor affecting the Capital Adequacy of the bank is Credit risk (Odunga R. M,Nyangweso P. M, & Carter D. A, 2013) . The mounting pressure of distressed assets in the public sector Banks is worsening the levels of NPAs which is at all time high. The declared NPA of PSBs has grown to 6.2 trillion out of which 1.5 trillion are restructured standard assets.

The multiple regression analysis also shows that Market risk and Operational risk do not show significant relationship with the capital adequacy ratio and therefore only the credit risk results are shown here.

The variations in CAR are more than 50% in case of Bank of Maharashtra and Oriental Bank of Commerce while 82.17% of the variation in CAR is explained for Allahabad Bank jointly by Credit Risk, Market Risk and operational Risk

VII Conclusion

The purpose of the study was to determine the most influencing determinants affecting the capital adequacy ratio of the banks which were brought under Prompt corrective action by RBI. To determine the relationship we analyzed the banks by using multiple regression models. The result shows that none of the banks under PCA were able to adhere to the CAR norms for the last five years and this is one of the reasons which led the RBI to take such regulatory actions against them. Out of the total 11 banks under review only Oriental bank of Commerce is showing better performance throughout the year under consideration. The Credit Risk is found to be the most significant affecting the capital adequacy ratio though the variations in CAR is explained jointly by Credit Risk, Market Risk and Operational Risk is low in most of the Banks. This implies that Credit Risk is one of the most important influencing factors of CAR as compared to market Risk and Operational Risk in case of the banks taken. These results can be attributed to the fact that as the NPA started rising over the last decade which poses a threat to the banking system in India ,the central Bank took many regulatory actions against these banks by making more provisions for stressed assets which ultimately increased the proportion of Credit Risk in the total risk. Most of the Banks which were under PCA framework are small banks except Central Bank of India ,Bank of India and IDBI bank whose market capitalization as on 2017 stood at 165bn, 146bn and 111bn respectively while rest of the banks under purview have less than 61bn market cap. Market risk which

constitutes the risk arising from investment is found to be insignificant in all the banks which can be accredited to the fact that the market risk may not be contributing much to the overall risk of the banks. The operational risk is also found to be contributing less as compared to Credit Risk but the recent case of fraud in Punjab National Bank-Nirav Modi case, the risk is being deflected from credit risk to operational case. Failure in proper evaluation of Credit risk paves the way for the burgeoning operational risk in this event.

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