

CRAR Performance: A Comparative Analysis of Capital Adequacy Ratio of SBI AND ICICI Banks

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Abstract- Risk is the potentiality of both expected and unexpected events which have an adverse impact on bank capital or earnings. Risk Management enables the banks to bring their risks to manageable proportions while not severely affecting their income. Capital adequacy is an indicator of the financial health of the banking system. It is defined as the ratio of a bank's capital to its total risk-weighted assets. The Scheduled Commercial Banking sector is the driving engine of the Indian economy and the risks associated with this sector is very significant, the RBI is keen on monitoring this sector and develop policies and other corrective measures as necessary. *Hence, the paper endeavoured to study an overview picture of Capital to Risk-weighted Asset Ratio (CRAR) of SBI AND ICICI BANK. The results showed that statistically there is a significant difference between SBI Bank and ICICI Bank as regards to Capital adequacy ratio and Tier I capital ratio. As regards to Tier II capital ratio, statistically there is no significant difference between SBI Bank and ICICI Bank.*

Key words: *Basel II, Capital Adequacy Ratio (CAR), Indian Scheduled Commercial Banking sector, Risk, Risk management.*

I. INTRODUCTION

RISK MANAGEMENT

The etymology of the word 'Risk' is traced from a Latin word 'Rescum' meaning Risk at sea or that which cuts. Risk is an unplanned event with financial consequences resulting in loss or reduced earnings. Risk is the potentiality of both expected and unexpected events which have an adverse impact on bank capital or earnings.

The essential functions of risk management are to identify, measure and more importantly monitor the profile of the bank. Non-Performing Assets are the legacy of the past in the present, Risk Management system is the pro-active action in the present for the

future. Managing risk is nothing but managing the change before the risk manages.

International Financial Risk Institute defines Risk Management as "The application of financial analysis and diverse financial instruments to control and typically the reduction of selected types of Risks."

Hence, Risk Management is an attempt to identify, to measure, to monitor and to manage uncertainty. It does not aim at risk elimination, but enables the banks to bring their risks to manageable proportions while not severely affecting their income.

The Bank for International Settlement (BIS):

The Bank for International Settlements (or BIS) is an international organization of central banks which exists to "foster cooperation among central banks and other agencies in pursuit of monetary and financial stability." It carries out its work through subcommittees, the secretariats it hosts, and through its annual General Meeting of all members. The BIS also provides banking services, but only to central banks, or to international organizations like itself. Based in Basel, Switzerland, the BIS was established by the Hague agreements of 1930. The BIS has two specific goals viz.to regulate capital adequacy and make reserve requirements.

Capital adequacy policy applies to equity and capital assets. These can be overvalued in many circumstances. Accordingly the BIS requires bank capital to asset ratio to be above a prescribed minimum international standard, for the protection of all central banks involved. The BIS' main role is in setting capital adequacy requirements. From an international point of view, ensuring capital adequacy is the most important problem between central banks, as speculative lending based on inadequate underlying capital and widely varying liability rules causes economic crises as "bad money drives out good" (Gresham's Law).

The BIS sets "requirements on two categories of capital, Tier 1 capital and Total capital. Tier 1 capital is the book value of its stock plus retained earnings. Tier 2 capital is loan loss reserves plus subordinated debt. Total capital is the sum of Tier 1 and Tier 2 capital. Tier 1 capital must be at least 4% of total risk-weighted assets. Total capital must be at least 8% of total risk-weighted assets. When a bank creates a deposit to fund a loan, its assets and liabilities increase equally, with no increase in equity. That causes its capital ratio to drop. Thus the capital requirement, limits the total amount of credit that a bank may issue. It is important to note that the capital requirement applies to assets while the bank reserve requirement applies to liabilities."

Capital adequacy is an indicator of the financial health of the banking system. It is measured by the Capital to Risk-weighted Asset Ratio (CRAR), defined as the ratio of a bank's capital to its total risk-weighted assets. Generally, financial regulators impose a capital adequacy norm on their banking and financial systems in order to provide for a buffer to absorb unforeseen losses due to risky investments. A well adhered to capital adequacy regime does play an important role in minimizing the cascading effects of banking and financial sector crises.

BASEL I AND INDIAN BANKS

The First Narasimham Committee Report recommended the introduction of a capital to risk-weighted assets system for banks in India since April, 1992. Adopting the general approach of gradualism, India implemented the Basel I framework for scheduled commercial banks in April 1992, and its implementation was spread over the next three years. It was stipulated that, foreign banks operating in India should achieve a CRAR of 8 percent by March, 1993 while Indian banks with branches abroad should achieve the 8 percent norm by March, 1995. All other banks were to achieve a capital adequacy norm of 4 percent by March, 1993 and the 8 per cent norm by March, 1996. Further, India responded to the 1996 amendment to the Basel I framework which required banks to maintain capital for market risk exposures, by initially prescribing various surrogate capital charges for these risks between 2000 and 2002.

In its mid-term review of Monetary and Credit Policy in October 1998, the Reserve Bank of India (RBI) raised the minimum regulatory CRAR requirement to

9 per cent, and banks were advised to achieve this 9 per cent CRAR level by March 31, 2000. Thus, the capital adequacy norm for India's commercial banks is higher than the Basel norm of 8 per cent.

In response to the market risk amendment of Basel I in 1996, the RBI initially prescribed various surrogate capital charges such as investment fluctuation reserve of 5 per cent of the bank's portfolio and a 2.5 per cent risk weight on the entire portfolio for these risks between 2000 and 2002. However, these were later replaced with VaR-based capital charges, as required by the market risk amendments, which became effective from March 2005. The banks in India are required to maintain capital charges for market risk on their 'available for sale' portfolios as well as on their 'held for trading portfolios' from March 2006 while Basel I requires market risk charges for trading portfolios only.

All the banks achieved the minimum regulatory level by 2007. However, for the public sector banks the government had to infuse considerable capital to maintain 51% stake, as most of these banks had shown losses, after introduction of the international standards for income recognition, asset classification and provisioning norms. These PSB banks themselves had also approached the market to raise capital and they achieved considerable success in raising capital as almost all such IPOs were oversubscribed.

Basel II and Indian banks

In February 2005, the RBI issued the first draft guidelines on Basel II implementations in which an initial target date for Basel II compliance was set for March, 2007 for all commercial banks, excluding Local Area Banks (LAB) and Regional Rural Banks. This deadline was, however, postponed to March, 2008 for internationally active banks and March, 2009 for domestic commercial banks taking into consideration the stake of preparedness of the banking system in the country. The RBI issued guidelines to implement Basel II standardized approach (for credit & market risk) and basic indicator approach for operational risk, in Internationally active banks by March, 2008 and other scheduled commercial banks by March, 2009. The RBI has set a standard of minimum 9 percent CRAR in comparison to minimum 8 percent CRAR under Basel II (BCBS). Similarly BCBS had set minimum Tier 1 CRAR requirement at 4 percent but the RBI has given a target of 6 percent.

This indicates that the RBI has always took conservative view and set Capital Adequacy standards more than International requirements.

RBI has also stipulated that banks shall maintain capital at higher of the minimum capital required as per Basel II or 80 percent of the minimum capital required as per Basel I.

II. REVIEW OF LITERATURE

Ongore and Kusa (2013), in their article, studied the determinants of financial performance of commercial banks in Kenya. In their study, one of the bank specific factors considered is liquidity management. The objective of the study was to fill in the gap left by scanty studies on the moderating effect of ownership structure on bank performance. The authors used linear multiple regression model and generalized Least Square on panel data to estimate the parameters. The empirical study concluded that bank specific factors (factors under the control of managers) are the most significant determinants of the financial performance of commercial banks in Kenya. The study supports and is in line with the Efficiency Structure theory which states that enhanced managerial efficiency leads to higher performance.

Bhavin U. Pandya & Kalpesh P. Prajapati (2013), in their research article concluded that the Indian Banking Industry requires a combination of new technologies, better processes of credit and risk appraisal, treasury management, product diversification, internal control and external regulations. There is a need for bank employees to have sufficient understanding of the Basel II accord in order to guide the banking growth rate in the positive direction and lack of understanding affects the banks negatively as these are the basis for any banking sector. The objective of the study is to find out the awareness level, as well as the perception among bank employees about the Basel-II norms, and also examines the efforts made by them for implementing it in their banks.

Ravi Kant & S.C. Jain (2013), in their article concluded that the Capital Conservation Buffer (2.5%) stipulated by Basel III is simply a top up, over and above the stipulated capital levels of 8%. The study observed that on one hand, the recoup of capital conservation buffer, would be difficult once it gets depleted and on the other, the banks would find it

attractive to further boost up the credit growth in order to reduce the impact of additional capital requirements. The other adverse impacts of discretionary buffers would be upsetting the growth plans of the industry, caution among investors and effect on banks 'asset quality'. On the contrary, the release of discretionary buffers is only leverage enhancing enabling factor and by itself does not amount to increase in cash flows and liquidity for credit growth. And, it would not positively impact the banking profitability either.

Ibe (2013), studied the impact of liquidity management on profitability on banks in Nigeria. The work was necessitated by the need to find solution to liquidity management problem in Nigerian banking industry. Three banks were randomly selected to represent the entire banking industry in Nigeria. The proxies for liquidity management include cash and short term fund, bank balances and treasury bills and certificates, while profit after tax was the proxy for profitability.

Raghavan R.S (2008), in his article focused on Basel II accord, its implication in banking sector and challenges for the banks on implementation of Basel II norms. The study concluded that Basel II principles should be viewed more from the angle of fine tuning one's risk management capabilities through constant mind searching rather than as regulatory guidelines to be complied with.

III. RESEARCH GAP

From the review of the existing literature, it is observed that many research studies have been attempted to study various issues related to banking sector such as performance of banks, mergers and acquisitions, customer satisfaction etc. However, very few studies were found on risk management in banking sector. Against this backdrop, the present study titled "CRAR Performance: A Comparative Analysis of Capital Adequacy Ratio of SBI And ICICI Banks" is an attempt to address this critical gap.

IV. IMPORTANCE OF THE STUDY

Today, the Indian Economy is in the process of becoming a world class economy. The Indian banking sector is making great advancement in terms of quality, quantity, expansion, diversification and is

keeping up with the updated technology, ability, stability and thrust of a financial system, where the commercial banks play a very important role, emphasize the special need of a strong and effective control system with extra concern for the risk involved in the business.

Globalization, Liberalization and Privatization have opened up a new methods of financial transaction where risk level is very high. In banks and financial institutions risk is considered to be the most important factor of earnings. Therefore they have to balance the relationship between risk and return. Managing financial risk systematically and professionally becomes an even more important task. Rising global competition, increasing deregulation, introduction of innovative products and delivery channels have pushed risk management to the forefront of today's financial landscape. Ability to gauge the risks and take appropriate position will be the key to success. It can be said that risk takers will survive, effective risk managers will prosper and risk averse are likely to perish.

Risk arises due to uncertainties, which in turn arise due to changes taking place in prevailing economic, social and political environment and lack of non-availability of information concerning such changes. Risk is an exposure to a transaction with loss, which occurs with some probability and which can be expected, measured and minimized. In financial institutions risk result from variations and fluctuations in assets or liability or both in incomes from assets or payments on liabilities or in outflows and inflows of cash.

Before 1991 reforms, Indian banking system was working under the closed environment. It was only in the year 1991 that government of India when faced crisis and introduced liberalization, privatization and globalization measures and same measures are also implemented in Indian banking sector. Though the performance of the industry has increased, but this has brought in severe competition and several types of risk. Risk is the concept which cannot be eliminated completely from the banking business. The present study is conducted to to make a comparative analysis of capital adequacy ratio, Tier I Capital and Tier II capital of SBI And ICICI Banks.

V. OBJECTIVES OF THE STUDY

The objective of the present study is

1. to analyse capital adequacy ratio of SBI and ICICI bank
2. to make a comparative analysis of capital adequacy ratio, Tier I Capital and Tier II capital of SBI And ICICI bank.

VI. HYPOTHESIS

H₀: There is no significant difference between the Capital Adequacy Ratio of SBI Bank and ICICI Bank.

H₀: There is no significant difference between the Tier I Capital Adequacy Ratio of SBI Bank and ICICI Bank.

H₀: There is no significant difference between the Tier II Capital Adequacy Ratio of SBI Bank and ICICI Bank.

VII. METHODOLOGY OF THE STUDY

The present study is emphirical and exploratory in nature. The study is based on secondary data. The required data are collected from RBI reports, annual reports of banks, articles from journals, M.Phil., dissertations and Ph.D., theses.

For the purpose of the study two banks are selected i.e., one from public sector bank and another from private sector bank.

To study the risk management in banking sector, Capital Adequacy Ratio (CAR) of selected banks (operating in India) is analyzed during the period 2007 to 2013. Tier I Capital and Tier II capital of SBI And ICICI Banks have been studied and analyzed. A Comparative study is also made between SBI and ICICI Bank.

The statistical tools such as percentages, averages and t-test have been used to analyze the collected data.

VIII. SCOPE OF THE STUDY

The present study is confined to risk management in banking sector. The sample banks are selected in such a way to cover public and private sector banks. Accordingly, State Bank of India (SBI) selected from public sector which is the largest state-owned bank and ICICI Bank selected from private sector which is the largest private sector bank in India and second largest

bank in India. These banks are selected for the study, because RBI designated SBI and ICICI Bank as Domestic Systemically Important Banks (D-SIBs) due to their size, cross-jurisdictional activities and complexity.

IX. PERIOD OF THE STUDY

The period of study covers a seven years period i.e., from 2006-2007 to 2012-2013, since, in 2005 the RBI issued the first draft guidelines on Basel II implementation in which an initial target date for Basel II compliance was set for March, 2007 for all commercial banks, but this deadline was postponed to March, 2008 for internationally active banks, and March, 2009 for domestic commercial banks.

X. SOURCES OF THE DATA

The present study is based on secondary data. The secondary data are collected from RBI reports, annual reports of SBI and ICICI bank, articles from journals, M.Phil., dissertations and Ph.D., theses.

XI. LIMITATIONS OF THE STUDY

The following are the limitations of the study:

1. The present study is confined to two banks, findings cannot be generalised.
2. The present study is confined to capital adequacy

ratio only.

3. The present study period is limited to seven years only.

XII. DATA ANALYSIS AND INTERPRETATION

Statistical tool t-test is applied to know the significant difference between capital adequacy ratio, Tier I Capital and Tier II capital of SBI and ICICI Bank.

Comparative analysis of capital adequacy ratio, Tier I Capital and Tier II capital of SBI And ICICI Banks.

The banks in India are subject to the capital adequacy norms stipulated by the RBI guidelines on Basel II which became applicable with effect from year end fiscal 2007-08. Prior to the year-end fiscal 2007-08, the banks are subject to capital adequacy norms as stipulated by the RBI guidelines on Basel I. The RBI guidelines on Basel II require the Banks to maintain a minimum CAR of 9 percent with a minimum Tier-1 capital adequacy ratio of 6 percent. Under Pillar I of the RBI guidelines on Basel II, ICICI Bank and SBI Bank followed the Standardised approach for measurement of credit and market risks and Basic Indicator approach for measurement of operational risk.

The Capital Adequacy Ratio of SBI Bank and ICICI Bank for the period 2006-07 to 2012-13 are presented in table 1

TABLE 1 CAPITAL ADEQUACY RATIO (CRAR) OF SBI AND ICICI BANK

(in percentage)

YEAR	SBI	ICIC
2006-07	12.34	11.69
2007-08	12.64	13.96
2008-09	14.25	15.53
2009-10	13.39	19.41
2010-11	11.8	19.54
2011-12	13.86	18.52
2012-13	12.92	18.74

Source: RBI Reports 2007 – 2013.

It is observed from table 1 that, SBI Bank and ICICI Bank have maintained their CAR above the de facto CAR of above 9 percent to ensure better safety cushion. SBI Bank and ICICI Bank have maintained their CAR at various levels over the years during the study period 2006-07 to 2012-13 depending on the risk

weight assigned to each type of loan. From 2007-08 to 2012-13 the CAR of ICICI Bank is higher than SBI Bank. It is observed from the table that from 2009-10 to 2012-13, the CAR of ICICI Bank is significantly higher than SBI Bank. This indicates that ICICI Bank has ensured better safety cushion than SBI Bank.

Application of t-test:

Statistical tool t-test is applied to know the significant difference between Capital Adequacy Ratio of SBI

Bank and ICICI Bank.

H_0 : There is no significant difference between the Capital Adequacy Ratio of SBI Bank and ICICI Bank.

TABLE 2 t-test Result (CRAR)

t-Test: Two-Sample Assuming Equal Variances		
	SBI	ICICI
Mean	13.03	16.77
Variance	0.74	9.47
Observations	7	7
Pooled Variance	5.11	
Hypothesized Mean Difference	0	
Df	12	
t.Stat	-3.097	
P(T<=t) one-tail	0.005	
t Critical one-tail	1.78	
P(T<=t) two-tail	0.009	
t Critical two-tail	2.178	

Source: Data from Table 1

INFERENCE: The mean and the variance of the Capital Adequacy Ratio of ICICI Bank is higher than the SBI Bank. The mean of SBI Bank and ICICI Bank is 13.03 and 16.77 respectively. The variance of SBI Bank and ICICI Bank is 0.74 and 9.47 respectively. At 5 percent significance level and for 12 degrees of freedom, the p-value is 0.00, the t statistic

calculated is 3.09 which is higher than the t table value, 2.179. Hence the null hypothesis is rejected and the alternative hypothesis is accepted. It is therefore concluded that statistically there is a significant difference between the Capital Adequacy Ratio of SBI Bank and ICICI Bank.

TABLE 3 Tier-1 CAPITAL RATIO OF SBI AND ICICI BANK
(in percentage)

YEAR	SBI	ICICI
2006-07	8.01	7.42
2007-08	8.48	11.76
2008-09	9.38	11.84
2009-10	9.45	13.96
2010-11	7.77	13.17
2011-12	9.79	12.68
2012-13	9.49	12.8

Source: RBI Reports 2007 – 2013

It is evident from table 3 that, SBI Bank and ICICI Bank have maintained their Tier I CAR above the de facto Tier I CAR of above 6 percent to ensure better safety cushion. SBI Bank and ICICI Bank have maintained their Tier I CAR at various levels over the years during the study period 2006-07 to 2012-13 depending on the risk weight assigned to each type of loan. From 2007-08 to 2012-13 the Tier I CAR of ICICI Bank is higher than SBI Bank.

Application of t-test:

Statistical tool t-test is applied to know the significant difference between Tier I Capital Adequacy Ratio of SBI Bank and ICICI Bank.

H0: There is no significant difference between the Tier I Capital Adequacy Ratio of SBI Bank and ICICI Bank.

TABLE 4 t-Test Result Tier-I Capital Ratio

t-Test: Two-Sample Assuming Equal Variances		
	SBI	ICICI
Mean	8.91	11.95
Variance	0.65	4.56
Observations	7	7
Pooled Variance	2.61	
Hypothesized Mean Difference	0	
Df	12	
t Stat	-3.52	
P(T<=t) one-tail	0.002	
t Critical one-tail	1.782288	
P(T<=t) two-tail	0.004	
t Critical two-tail	2.178813	

Source: Data from Table 3

INFERENCE: The mean and the variance of the Tier I Capital Adequacy Ratio of ICICI Bank is higher than the SBI Bank. The mean of SBI Bank and ICICI Bank is 8.91 and 11.95 respectively. The variance of SBI Bank and ICICI Bank is 0.65 and 4.56 respectively. At 5 percent significance level and for 12 degrees of freedom, the p-value is 0.00, the t statistic calculated

is 3.52 which is higher than the t table value, 2.179. Hence the null hypothesis is rejected and the alternative hypothesis is accepted. It is therefore concluded that statistically there is a significant difference between the Tier I Capital Adequacy Ratio of SBI Bank and ICICI Bank.

TABLE 5 Tier-II Capital Ratio OF SBI AND ICICI BANK
(in percentage)

YEAR	SBI	ICICI
2006-07	4.33	4.27
2007-08	4.16	2.2
2008-09	4.87	3.69
2009-10	3.94	5.45
2010-11	4.21	6.37
2011-12	4.07	5.84
2012-13	3.43	5.94

Source: RBI Reports 2007 – 2013.

It can be observed from table 5 that, SBI Bank and ICICI Bank have maintained their Tier II CAR at

various levels over the years during the study period 2006-07 to 2012-13. During 2006-07 to 2008-09 Tier

II CAR OF SBI Bank is higher than ICICI Bank. During 2009-10 to 2012-13 the Tier II CAR of ICICI Bank is higher than SBI Bank.

Application of t-test:

Statistical tool t-test is applied to know the significant

difference between Tier II Capital Adequacy Ratio of SBI Bank and ICICI Bank.

H_0 : There is no significant difference between the Tier II Capital Adequacy Ratio of SBI Bank and ICICI Bank.

TABLE 6 t-Test Result Tier-II Capital Ratio

t-Test: Two-Sample Assuming Equal Variances		
	SBI	ICICI
Mean	4.14	4.82
Variance	0.19	2.26
Observations	7	7
Pooled Variance	1.22	
Hypothesized Mean Difference	0	
Df	12	
t Stat	-1.15	
P(T<=t) one-tail	0.14	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.27	
t Critical two-tail	2.178	

Source: Data from Table 5

INFERENCE: The mean and the variance of the Tier II Capital Adequacy Ratio of ICICI Bank is higher than the SBI Bank. The mean of SBI Bank and ICICI Bank is 4.14 and 4.82 respectively. The variance of SBI Bank and ICICI Bank is 0.19 and 2.26 respectively. At 5 per cent significance level and for 12 degrees of freedom, the p-value is 0.27, the t statistic calculated is 1.15 which is lower than the t table value, 2.179. Hence the null hypothesis is accepted and the alternative hypothesis is rejected. It is therefore concluded that statistically there is no significant difference between the Tier II Capital Adequacy Ratio of SBI Bank and ICICI Bank.

XIII. CONCLUSIONS

From the foregoing analysis made in this study, the following conclusions can be drawn:

1. Risk Management is an attempt to identify, to measure, to monitor and to manage uncertainty. It does not aim at risk elimination, but enables the

banks to bring their risks to manageable proportions while not severely affecting their income.

2. In 1988, BCBS has introduced first International standards Basel I, to manage Banking risks with the help of standardized Capital Adequacy Ratio. CRAR ensures minimum capital so as to reduce bank failures; to promote stability, safety and soundness of the banking system; to prevent systemic disaster and to ultimately reduce losses to the bank Depositors.
3. On June 26th, 2004, the Basel Committee on Banking Supervision released Basel II Accord.
4. In India, RBI has taken conservative approach and maintained even tougher standards than Basel Norms. To absorb changes, RBI had introduced various approaches gradually in phases. The guidelines issued by RBI on risk management from time to time, are being implemented by banks through various committees.

5. The t-test results showed that statistically there is a significant difference between SBI Bank and ICICI Bank as regards to Capital adequacy ratio and Tier I capital ratio. As regards to Tier II capital ratio, statistically there is no significant difference between SBI Bank and ICICI Bank. Banks must equip themselves with an ability to identify, to measure, to monitor and to control the various risks with New Capital Adequacy provisions in due course.

XIV. SUGGESTIONS

In the light of conclusions drawn from the analysis made in this study, for better risk management in SBI and ICICI Bank the following suggestions are made to manage and monitor risks.

1. In order to attain Capital Adequacy Norms, the banks are increasing the Tier I Capital mainly by increasing the Reserves and Surplus. Creating Tier I Capital by huge ploughing back of profit, will discourage the investors. It is suggested that along with the creation of Reserves and Surplus, banks should make fresh Equity Issue to increase the Own Fund.
2. Creating awareness of Basel II and Basel III Norms Across Indian Banks.
3. Banks should develop well-established strategies, policies, and procedures for managing both the sources and uses of an institution's funds. This includes assessing and planning for short-term, medium-term, and long term liquidity needs.
4. Adequate Internal controls and internal audit reviews have to be implemented to ensure compliance with internal liquidity management policies and procedures.

XV. SCOPE FOR FUTURE RESEARCH

From the present study, the following areas have been identified for future research work in Risk Management in Banking Sector:

1. Impact of Basel III in India.
2. Operational Risk Management at SBI and ICICI Bank.
3. Awareness and Perception of Basel II and Basel III Norms Across Indian Banks

4. A study on Domestic Systemically Important Banks (D-SIBs) framework.

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