

Impact of Implementation on the Capital Adequacy Ratio of the Indian Banks

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Abstract

Comparing the phase between introductions of Basel I to implementation of Basel III, Central Bank, Reserve Bank of India (RBI), in combining with the Basel Committee on Banking Supervision, endorsed new capital standards: Basel III, to appendage to Basel I and II. Approved by the RBI, mandatory to Indian banks to start the Basel III standards in 2013. However, the full implementation of Basel III has taken place in 2019 and the financial result has to be declared in 2020 and after that the impact will be measured in the future. This study will scrutinises Basel I, II and III's to understand the impact of implementation on the Capital Adequacy Ratio of the Indian Banks. Due to the new standards, the Banks required surplus capital reserves for market and operational risk, in the changeover from Basel I to Basel II to Basel III had the utmost impact on different banks.

Keywords: BASEL, RBI, Capital Adequacy Ratio.

Introduction

A bank should have sufficient capital to meet potential losses; however, the question is essential to assess the soundness and resilience of banks. It was the vital issue behind the enlargement of the first Basel agreement. This Accord is defined in 1988 and it functioned as per the Basel Committee on Banking Supervision ("BCBS"), a threefold classification:

- To formulate assurance about the amount capital banks held was ample to cover their level of particular risk.
- Due to cross-border banking, Previous to the 1988, Basel Accord, the capital values and procedures were different drastically in different geographical controls.
- To support comparability of the capital positions of banks.

Following from the second point, comparing the bank's capital level was hampered due to different standards and measures. 1988 Basel Accord pursued to end this lack of comparability.

Basel I included a description of qualified capital and a set of simple risk-weights. Nevertheless the benefits of the Basel I Accord, the approach suffered from several drawbacks and the prominent drawback was a sole focus on credit risk, i.e. the risk that a counterparty of a bank would default on its obligations. Although this narrow

focus helped Basel I in maintaining simplicity, it also led to an exclusion of several different types of risk such as liquidity risk, market risk and operational risk. The Basel I Accord was reorganized by means of a market risk component in 1996. The inclusion of the market risk component was especially significant because for the first time the Basel framework permitted for the enlargement of internal models.

The Basel II was established in 2004, presented a number of changes different from Basel I. The most noteworthy changes were:

- Stimulated by an improvement available in statistical and mathematical modeling techniques, Basel II allowed for a greater confidence on internal model development by banks.
- Capital requisite precisely for operational risk was familiarised.
- The supervisory review process and disclosure and market discipline principles were acquainted with.

Greater reliance on internal representation developed by banks offered some considerable reward. In spite of Standardized Approach, banks can use of sophisticated internal models to develop a more precise estimate of required capital, only on approval by regulators. Moreover, banks were rewarded for such practical and sound risk management practices. As the capital supplies branching from internal models, were usually considerably lower than capital requirements under the Standardized Approach.

The Global Financial Crisis evidenced to be a wake-up call in positions of magnitude and eminence of banks' capital levels. With the modifications Basel III, introduced in 2010 and obtainable substantial change compared to Basel II including

- Minimum capital levels increased.
- The quality of capital to be increased, to make sure that capital was genuinely loss absorbing.
- The (non-risk based) leverage ratio was introduced.
- The Liquidity Coverage Ratio was introduced.
- The Net Stable Funding Ratio was introduced.

The collapse of worldwide systemically important banks ("G-SIBs") like Lehman Brothers during the global financial crisis of 2008 ("GFC"), was a significant cause for the contagion of the GFC across borders. The pervasiveness of G-SIBs and the danger posed by their collapse is asymptomatic increase of the interdependency of banking industries of different nations brought by increasing globalisation. This interdependency allowed local economic crises to grow into regional or global crises. As a result, banking regulation has been recognised as a vital to worldwide financial stability. The transnational effect of banking crises has culminated in transnational banking regulation, which also caused the attempt to meet the threat of global financial instability.

Comparing different phase, between 1988 (introduction of Basel I) and 2013 implementation of Basel III), a clear development appears in terms of difficulty and transparency.

- Whereas Basel I was simple and transparent,
- Basel III is complex and non-transparent.

Banks with their nature of business, draws more types of risks, viz., credit risk, market risk (which includes interest rate risk, foreign exchange risk and liquidity risk), operational risk, reputational risk, business risk, strategic risk, systemic risk to allude to a few. Banks are exposed to these risks because of the business of banking which they undertake, which is defined in section 5 (b) of the Banking Regulation Act, 1949 as, banking organisation, the accepting of advances or savings, of deposits of cash from the general public, repayable on demand or otherwise, and withdrawal by cheque, draft, order or otherwise. Section 5 (c) further defines, "banking company" means any company which transacts the commercial of banking in India. This is also called the process of intermediation, which causes the above risks to happen. Section 6 (subsections A to O) of the Banking Regulation Act, 1949, further defines the functions of banks, which further exposes the banks to the above risks.

Review of literature

Basically, the literature survey is taken into account as a crucial pre-requisite to actual planning and execution of any study. Here, are a number of the literature reviews given below:

Gupta and Meera (2011) feel that Basel II regulations have led to a major improvement within the risk structure of banks because their capital adequacy has improved. Also, there exists an inverse relation between CAR and Non-Performing Assets (NPAs), which clearly indicates that because of capital regulation, banks have to be complied to increase their CAR which results in decrease in NPAs.

Hasan (2012), in his research paper titled 'The Extent of Bank's Commitments in Basel Committee Regulations-the General Frame of the study' reveals the impact of Basel norms of 10 selected Jordan Banks. The paper concludes upon that Jordanian Commercial banks don't face challenges in applying the Basel II principles in reards to capital adequacy, supervising control and full disclosure.

Jain Mukul (2013) in his paper titled 'A Critical Review of Basel III Norms in Indian PU Banks' concludes that with the implementation of Basel III Norms in Indian Banks, Banks should have required a minimum of Rs.5,000 Billion in extra capital end in decrease within the profitability of banks in India. The govt. could consider reducing its majority stakes during a sort of state-owned banks, because it attempts to change the Rs. 900 billion in recapitalization, needed to care of present shareholding levels.

Objectives of the Study

1. Compare the differences in the total capital ratios (CRARs) estimated by banks under the three different standards.

2. To determine whether capital ratios differ across the Indian banks: SBI, PNB, BOB, ICICI, HDFC, City Union Bank

Research Methodology

The study period extends from 2008 to 2018, when continuous data on capital ratios are available for each bank. The data is used a test of means to measure the statistical differences in capital ratios under Basel I, II and III for the four sets of banks.

Description of variables

Risk-based capital ratios require the estimation of risk-weighted assets, Tier I and Tier II capital.

Tier I capital consist of the subsequent:

- Ordinary Paid up Shares, statutory reserves, and additional related free reserves, if any;
- Perpetual Non-cumulative preference shares (PNCPS) in use for Tier I capital, subject to laws operative from time to time;
- Innovative perpetual debt instruments (IPDI) taken for Tier I capital; and
- Capital reserves in lieu of surplus from sale proceeds of assets.

Tier II capital includes undisclosed reserves, revaluation reserves, general provisions and loss reserves, hybrid capital instruments, subordinated debt and investment reserve fund. Both Tier 1 and II have some deductions, like intangible assets, that reduce the quantity of capital requirement.

Data

The study will compare the differences in the total capital ratios (CRARs) estimated by banks under the three different standards. Difference of two sets of capital ratios has been taken. The first set has compared ratios under Basel I and II for the years 2008 to 2012. In India banks started reporting Basel II ratios in 2008. The six banks sample has been taken, three public sector banks and three private sector banks:

SBI and Associates - State Bank of India associates include all majority owned subsidiaries such as State Bank of Hyderabad, State Bank of Bikaner, State Bank of Jaipur, State Bank of Patiala, State Bank of Mysore, State Bank of Travancore and Bhartiya Mahila Bank.

In Punjab national Bank two banks were merged i.e. Oriental Bank of India and United Bank of India, Bank of Rajasthan merged with ICICI bank, and the City Union Bank.

Since most of the banks implemented Basel III by 2013, the second test compares bank ratios under Basel II and Basel III for the years 2013 to 2018.

The tabulation for the capital ratios is done in two ways. First, for every bank in the sample, the mean CRAR (capital to risk-adjusted assets ratio) is computed regardless of whether banks reported under both Basel I and Basel II. Hereby, an unmatched sample is there. Second, mean CRARs are valued simply for banks that reported Basel I and Basel II ratios, creating a matched sample. In the same way, mean CRARs of matched and unmatched banks reportage ratios under Basel II and Basel III are estimated. The results between the 2 groups aren't qualitatively different, so the based on the unmatched sample results available. The t-tests determine whether the differences within the two regimes are statistically significant.

Results

Table 1 shows the comparison of Basel I and Basel II mean CRARs are reportage by the Banks

Table 1 Comparison of Mean Capital-to-Asset Ratios under Basel I and II.					
Unmatched Sample	2008				
	Basel I	Basel II	Diff	N	P-Value
SBI and Associates	12.6	12.52	-0.08	7	0.93883885
PNB	8.97	13.46	4.49	3	0.04619305
ICICI	11.76	13.97	2.21	2	0.27051349
City Union Bank	9	10.1	1.1	1	0.46970766
Unmatched Sample	2009				
	Basel I	Basel II	Diff	N	P-Value
SBI and Associates	12.07	13.34	1.27	7	0.25111208
PNB	9.21	14.27	5.06	3	0.03690827
ICICI	11.84	15.53	3.69	2	0.16847899
City Union Bank	8.9	10.05	1.15	1	0.45565652
Unmatched Sample	2010				
	Basel I	Basel II	Diff	N	P-Value
SBI and Associates	12.31	13.51	1.2	7	0.27536716
PNB	9.11	14.16	5.05	3	0.03704655
ICICI	14	20.2	6.2	2	0.10180386
City Union Bank	9.4	10.8	1.4	1	0.39486309
Unmatched Sample	2011				
	Basel I	Basel II	Diff	N	P-Value
SBI and Associates	11.87	12.94	1.07	6	0.3335296
PNB	8.44	12.42	3.98	3	0.05771825
ICICI	13.72	19.98	6.26	1	0.10084442
City Union Bank	11.84	12.75	0.91	1	0.52997562
Unmatched Sample	2012				
	Basel I	Basel II	Diff	N	P-Value
SBI and Associates	11.74	13.26	1.52	6	0.18898441
PNB	9.28	12.63	3.35	3	0.07872769
ICICI	13.13	18.88	5.75	1	0.10962008
City Union Bank	11.69	12.57	0.88	1	0.54058025

It appears to be a considerable difference within the capital ratios reported by banks; report the largest ratios in every year, and under Basel I and II. With the exception of 2008, capital ratios for the State Bank of India (SBI) and the PNB are higher under Basel I and under Basel II PNB is higher. In 2009-2010, the increase in SBI's capital ratios exceeds but decrease in PNB; with the exceptional decrease in the SBI and PNB both the banks in 2011 are recorded, in 2012 SBI increases by 1% and PNB decreases by 1% from 2008, and all the differences are statistically significant. Under Basel II, capital ratios in ICICI increased significantly, on the other hand the ratios for City Union bank increased gradually under Basel II. Although the changes are not statistically significant, the average change is downward but positive. One reason for the difference between public sector and private sector bank is Basel II's requirement that additional capital held by banks subjected to market and/or operational risks. SBI and PNB do not engage in trading and or hold as many off-balance sheet instruments as do ICICI and City Union Bank. Also, banks with public sector have lower operational risk than Private sector banks' structures. Private sector banks must put aside additional capital for operational risk. Private Banks tend to be more profitable, as shown by Agarwal and Yadav (2015), but they also battle on extra risk.

Table 2 shows the transition by Indian banks from Basel II to Basel III. The transition began in 2013 and it's expected to be fully implemented by 2019. The table shows the comparison for six years from 2013-2016.

Table 2 Comparison of Mean Capital-to-Asset Ratios under Basel II and III.					
Unmatched Sample	2013				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	10.29	8.07	-2.22	6	0.07713
PNB	9.76	12.72	2.96	3	0.0977
ICICI	13.25	19.53	6.28	2	0.02443
City Union Bank	13.27	13.98	0.71	1	0.60695
Unmatched Sample	2014				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	12.07	13.34	1.27	6	0.25998
PNB	9.5	12.69	3.19	3	0.08581
ICICI	11.72	17.04	5.32	1	0.11829
City Union Bank	12.5	15.01	2.51	1	0.24136
Unmatched Sample	2015				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	12.31	13.51	1.2	6	0.28389
PNB	9.63	12.99	3.36	3	0.07831
ICICI	12.78	17.2	4.42	2	0.04756
City Union Bank	12.25	16.52	4.27	1	0.14645
Unmatched Sample	2016				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	11.87	12.94	1.07	6	0.33353
PNB	10.16	13.15	2.99	3	0.09602
ICICI	11.7	17.7	6	1	0.10514
City Union Bank	12.9	15.58	2.68	1	0.22736

Unmatched Sample	2017				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	11.74	13.26	1.52	6	0.18898
PNB	10.1	11.66	1.56	3	0.25912
ICICI	11.5	19.5	8	1	0.07917
City Union Bank	13.4	15.83	2.43	1	0.24854
Unmatched Sample	2018				
	Basel II	Basel III	Diff	N	P-Value
SBI and Associates	11.74	13.33	1.59	6	0.17271
PNB	7.12	9.2	2.08	3	0.17304
ICICI	11.65	19.5	7.85	1	0.08066
City Union Bank	13.92	16.22	2.3	1	0.2611

The data for some banks is limited between 2013 to 2018. However, the overall results indicate from 2013 to 2015 that all banks experienced an increase in capital-to-asset ratios but ICICI bank's was decreasing, and from 2016 to 2018 only PNB decreases and other banks SBI, ICICI and City Union Bank increases in capital-to-asset ratios when they transitioned from Basel II to Basel III. 2.23% dropped in 2013 for SBI banks was statistically significant. In 2014, the ratio increase was not significant but equaled 1.27%. Thereafter, ratio changes for SBI banks climbed gradually but less than 1%. Ratios reported by PNB also increased by 2014 and then decreased but the changes were less than one percent. Ratio changes for the ratios reported by ICICI bank were small variation thereafter with three years of increase in all the years. Finally, the capital to asset ratios reported by City Union Bank grown substantially, significantly, with a large increase of 16.52 and 16.22 in 2015 and 2018.

Overall, it appears that the transition from Basel I to Basel II had the most significant impact on State Bank of India and City Union Bank. For PNB, ratios dropped because Basel II required additional capital for market and operational risk. The transition to Basel III negatively affected most banks but the greatest impact was felt by Public Sector Banks. The results suggest that Basel III requirements are more stringent than those under Basel I and II.

Conclusion

The Basel Committee on Banking Supervision has released three sets of rules for bank capital over the last three decades beginning with Basel I 1992, Basel II in 2004 and Basel III in 2010. Most central banks have adopted the rules including the Reserve Bank of India. This study compares the Basel ratios reported by banks in India for the period 2008-2012 when Basel II replaced Basel I and 2013-2018 when Basel III replaced Basel II. The result shows that the transition from Basel I to Basel II increased the ratios for SBI and ICICI, but decreased them for PNB and City Union Bank. The foremost likely explanation is that banks were engaged in additional activities than traditional banking such as trading and investment banking and incurred more risk-weighted assets. The transition from Basel II to Basel III was negative for banks and PNB again showed the largest decline. However, the full implementation of Basel III has taken place in 2019 and the result is awaited to be declared in 2020 to learn if its impact will increase in the future.

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