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Impact of Basel Accord on Performance of Indian Banks: An Empirical Analysis of Selected Public and Private Sector Banks

*Swati Lodha**

ABSTRACT

Indian banking sector has seen unprecedented growth along with remarkable improvement in its quality of assets and efficiency since economic liberalization began in early 1990s. Rising global competition, increasing deregulation, introduction of innovative products and delivery channels have pushed risk management to the forefront of today's financial landscape. In the backdrop of all these developments, Basel accord has emerged as a remedy which provides recommendations on banking regulation with regard to different types of risks that a bank faces while performing its operations. One of the most important guideline laid down by Basel Accord is Capital adequacy regulation which stipulates banks to hold capital in proportion to its risk weighted assets. Indian banks are maintaining a high Capital adequacy ratio and have made changes in their capital structure owing to implementation of Basel norms. Thus, it is important to explore the impact of capital adequacy ratio on performance of banks. In the present study, an empirical analysis of bank performance in relation to capital adequacy has been carried out. This work also analyses that while moving ahead on capital adequacy norms of Basel accord whether public and private sector banks will have similar impact on their performance.

***Keywords**: Capital Adequacy; Basel Accord; NPA; Profitability; Productivity.*

1.0 Introduction

Banking sector plays a crucial role in growth and development of economic system worldwide. This is the single most sector which can bring the whole economic and financial system of the world economy to a standstill. Certain instances are there in global economy which in true sense are a testimony to the vital role that banks play in stability of financial system of an economy.

**Research Scholar, Department of Commerce, The IIS University, Jaipur, Rajasthan, India (Email id: swati333.2009@rediffmail.com)*

Banking in today's sophisticated era is not just restricted to accepting or lending money rather banks have become a single roof for multiple array of functions ranging from investment services to utility payments. The huge dependence on banks in almost all spheres of economic growth exposes banks to a number of risks and unforeseen losses which has pushed Risk management to the forefront of today's financial landscape. A major reform has been initiated in the field of Risk Management by Basel Committee on Banking Supervision (BCBS). Different Basel Accords issued over different time periods have proved to be path breaking in managing risks to which a bank exposes itself while performing its operations.

1.1 Indian banking scenario

The banking system in India is featured by a large network of bank branches serving many kinds of financial services to people with different interests ranging from household to industries. The fast changing liberalized economic scenario exposes banks to tremendous competition not only from domestic market but also from foreign banks. All these developments in banking sector have made it imperative for banks to be more stable and healthy. A major and significant initiative in similar direction is adherence of Indian banks with Capital adequacy norms laid down by BCBS. India's banking system was probably one of the few large banking systems which remain unscathed by the 2008 global financial crisis. An important reason attributed to this prevention was maintenance of a high capital adequacy ratio by Indian banks.

In this article attempt has been made to study the performance of banking sector in terms of profitability, productivity and asset quality for public and private sector banks. The initial section of this paper describes the Basel Accord and major recommendations made by Basel Committee. Existing literature in the relevant field are reviewed and placed in subsequent sections. The impact of Basel Accord on Return on Assets (ROA), Return on Equity (ROE), Net NPA (Non Performing Assets), Business Per Employee (BPE), Priority Sector Advances to Total Advance (PSATA) has been analyzed in this study. The findings and probable impact of Basel Accord are discussed in the concluding section.

1.2 Basel I capital accord

Regulators and banks all over the globe have been concerned about different types of risks that banks are exposed to in performing of their routine operations which led to evolution of formal framework of bank's capital structure in 1988 with the introduction of the "International Convergence of Capital Measurement and Capital Standards" popularly known as Basel I, issued by Basel Committee on Banking

Supervision under the auspices of Bank of International Settlement (BIS), headquartered in Basel, Switzerland. The initiative had two main objectives:

1. To strengthen the soundness and stability of the international banking system
2. Set up a fair and consistent international banking system in order to decrease competitive inequality among international banks.

The accord directs banks to maintain a minimum capital adequacy ratio of 8 percent against Risk Weighted Assets. The capital adequacy indicator of a bank, calculated in this way, should be at least 8 percent.

$$\frac{Capital}{RWA} \geq 8\ \%$$

1.3 Basel II capital accord

Basel II was considered to be the resultant of pitfalls of Basel I. In the year 1999, a new and comprehensive capital accord was proposed by Basel committee and was named as "A revised Framework on International Convergence of Capital Measurement and Capital Standards" (also called as Basel II)**.** Basel II, initially published in June 2004, was intended to amend international standards that controlled how much capital banks need to hold to guard against the credit, market and operational risks that banks face. These rules sought to ensure that the greater the risk to which a bank is exposed, the greater the amount of capital the bank needs to hold to safeguard its solvency and economic stability.

1.4 Basel II had three stated objectives

1. To increase the international banking system's quality and stability
2. To create and maintain a level playing field for internationally active banks
3. To promote the adoption of more stringent practices in the risk management field

1.5 Basel III

The drawbacks of Basel II and financial crisis of 2007-09 which proved Basel II incompetent for comprehensive management of risk paved the way for emergence of Basel III. It is indeed a revolution in area of banking regulation. Drawing largely from existing Basel II, Basel III aims to build up a robust capital base for banks and ensure sound liquidity and leverage ratios so as to prevent occurrence of any future financial crisis, thereby ensuring the stability of financial system. BCBS released the Basel III

framework entitled "Basel III: A Global Regulatory Framework for more Resilient Banks and Banking systems" in Dec 2010 (revised in June 2011). According to BCBS, Basel III proposals have two main objectives:

- To strengthen global capital and liquidity regulations with the goal of providing a more resilient banking sector
- To improve the banking sector's ability to absorb shocks arising from financial and economic stress.

The major recommendations under Basel III as suggested by BCBS are as follows:

1) **Increased quantity and quality of capital:** Basel III inculcates strong guidelines for improving the quantity and quality of capital, so as to improve the loss-absorption capacity of banks for their long term survival as well as for liquidation scenarios. Basel III retained the minimum capital adequacy ratio of 8%, the Tier I capital ratio increased to 6% with the equity component stipulated at 4.5%. There are two new concepts introduced by Basel III namely capital conversion buffer and countercyclical capital buffer (CCB). The capital conversion buffer ensures that banks are able to absorb losses without breach of the requirement of minimum capital, and are able to carry on business even when economy is facing a downturn without deleveraging. The countercyclical capital buffer is a pre-emptive measure that requires banks to build up capital gradually as imbalances in the credit market develop. It may be in the range of 2.5% of risk weighted assets which could be imposed on banks during periods of excess credit growth.
2) **Increased short term liquidity coverage:** The Basel Committee lays down guidelines for strengthening of the liquidity framework by developing two minimum standards for quantifying funding liquidity; Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR). The LCR standard aims at a bank having an adequate stock of unencumbered high quality liquid assets (HQLA) which consist of cash or assets that can be converted into cash at little or no loss of value in private markets to meet its liquidity requirements in a 30 calendar day. The NSFR is designed to encourage and incentivize banks to use stable sources to fund their activities. It helps to reduce dependence on short term wholesale funding during times of buoyant market liquidity and encourages better assessment of liquidity risk across all on- and off-balance sheet items.
3) **Reduced leverage through introduction of backstop leverage ratio:** The newly introduced leverage ratio acts as a non- risk sensitive backstop measure to reduce the risk of buildup of excessive leverage in the institution and in the financial system as a whole. The leverage ratio requirement would hence set an all-encompassing floor to minimum capital requirements which would limit the potential erosive effects of

gaming and model risk on capital against true risks. A 3% minimum Tier I leverage is recommended by Basel III.

4) **Strengthening of provisioning norms:** Another aspect of development by the Basel III reforms is in the field of provisioning norms; currently there is a standardized approach to provisioning in the banking system. It is a typical accounting approach, wherein if a loss is incurred, banks have to make a provision to cover it. Basel III sets a new parameter by introducing a move from "incurred loss approach" to "expected loss approach". The introduction of concept of Dynamic Provisioning sets forth as a solution to this regulation.
5) **Enhanced disclosures:** The third pillar of Basel III is market discipline, which involves more of disclosures. Disclosures made by banks are essential for market participants to make more informed decisions. Basel III further strengthens the disclosures, where banks are required to disclose on composition of the regulatory capital, Tier I and Tier II capital, approaches to measure the same and any adjustments to the regulatory capital.
6) **Addressing systemic risk and interconnectedness:** Basel III Accord lays down that excessive interconnectedness among systemically important banks can also transmit instability and shocks across the financial system and economy. Systemically important banks should have loss absorbing capacity beyond the minimum standards and a measure in this regard includes combinations of capital surcharges, contingent capital, and methodology comprising both of quantitative and qualitative indicators to assess the systemic importance of financial institutions at a global level.

2.0 Review of Literature

Shenoy, Mohane and Singh (2014) state that it would not be possible for Indian banks to comply with the stringent guidelines of Basel III while maintaining their growth and profitability. Jayadev (2013) investigated the practical aspect of implementation of Basel III in Indian banks. The additional capital to be raised is going to affect the cost of credit and is going to affect the profitability of banks and shareholder return in negative way. The speeches of several eminent economists have been incorporated in this study. Chishty (2011) studied the impact of capital adequacy ratio on profitability of private commercial banks and finds that CAR is negatively related with profitability of banks. Shukla (2017) in his study, "Basel III Impact Analysis for Indian banks" attempts to study the probable impact of Basel III implementation for Indian banks and concludes that higher capital and minimum liquidity requirements are likely to cause an adverse

impact on return on equity. Narasimhan and Goel (2013) laid that Indian banks exhibit stability in times of crisis due to their capital structure and regulatory environment and also showed an increasing trend in the capital adequacy ratio in the years 2008-2012. Balasubramaniam (2013) examined the issues and challenges to be faced by the Indian banking sector while implementing the Basel III norms. The research revealed that it would be an issue for the banks to raise funds from the capital market, banks have to adopt the advanced approaches of risk management and recognize the losses on account of NPAs. Roy (2014) described various aspects of performance of Indian banking sector in their run for maintaining Basel norms. It is analyzed by changes in asset and investment composition, profitability, efficiency in different regulatory regimes of pre Basel, Basel I and Basel II across different categories of banks. Tripathi and Singh (2015) carried out a research study to examine the preparedness of Indian Public Sector Banks (PSBs) to implement Basel III Accord and to see if Indian PSBs have capital adequacy for Basel III Accord implementation. The study concluded that Indian Public Sector Banks have capital adequacy and the stipulated capital norms under Basel III Accord can be complied with by Indian PSBs fairly well within given timelines by Reserve Bank of India. Dhanda and Rani (2010) examined Capital Adequacy Ratios (CAR) of different categories of scheduled commercial banks in India and also ascertained the impact of application of Basel II norms on Capital Adequacy Ratio (CAR) for the period 1998-99 to 2008-09. However, the impact of Basel II on CAR of banks was studied for the financial year 2008-09 only. The finding was that Basel II norms had not adversely affected the CAR of banks in India. Barua, Roy and Raychaudhuri (2015-2016) empirically analysed the performance of scheduled commercial banks during Basel II phase and whether global financial crisis had any impact on performance of banks in India. The researchers concluded that profitability of scheduled commercial banks improved after financial crisis. Category wise, the performance of private and foreign banks was more prominent compared to public sector banks. Shah (2013) states that Return on Equity (ROE) and profitability are likely to decline due to implementation of Basel III norms. The reasons stated for the said decline are gradual removal of some of the components of Tier-I capital, increase in the risk weight and higher cost of funds during the transition phase.

2.1 Research gap

Most of the existing studies in the similar field have analyzed the concept of Basel norms and amount of CAR required for adherence of Basel norms. Moreover the literature reviewed is confined to a shorter time period which can bring a rosy picture of impact of CAR on performance of Indian banks. Majority of studies available in the

same field aim to conclude that capital required for implementation of Basel norms is a challenge for public sector banks in India. Some studies also concluded that Indian banks are well placed in context of Capital Adequacy. However scanty literature is available of the impact of CAR on performance of Indian banks.

2.2 Justification and relevance of study

The present work aims to study the most probable impact of Capital Adequacy ratio as stipulated by Basel Accord on performance of Indian banks for 12 years. The broad spectrum of data would definitely help to get more authentic results and findings. The study includes both public and private sector banks which will help to compare the profitability and performance across two categories of banks.

3.0 Research Objectives

- To investigate the impact of CAR on profitability of selected public and private sector banks in India.
- To make a comparative study of productivity and asset quality of selected public and private sector banks for 12 years.
- To analyze the social performance indicator of selected public and private sector banks in post Basel era.

3.1 Research methodology

The present work is an attempt to study the performance of banks in the post Basel era. Performance of banks is measured in terms of profitability, productivity and asset structure. Apart from financial indicators for measuring bank performance, this study also analyses changes in social performance of banks with regard to their adherence to capital adequacy regulations of Basel Accord. Profitability analysis is captured through two most acceptable profitability measures- Return on Assets (ROA) and Return on Equity (ROE). Asset quality and Productivity of banks is analyzed by using Net NPA to net Advances Ratio and Business per employee (BPE). The performance of banks on social grounds is studied on the basis of ratio of priority sector advances to total advances (PSATA). Geometric mean is used as a measure of central tendency for finding out average of CAR, ROA, ROE, NPA, PSATA because data collected is in percentage form and Geometric mean is most appropriate for working with percentages. However for BPE, arithmetic mean was used for finding out measure of central tendency as data collected is in absolute figures.

3.2 Time period

The study is conducted on a period of 12 years from 2005 to 2016.

3.3 Sample selection criteria

The sample banks are selected on the basis of total income of banks as per Annual report for Financial Year 2016. Top 5 public and top 5 private banks are identified for the purpose of present work. Following is the description of sample banks.

Public Sector Banks	Private Sector Banks
SBI	HDFC Bank
PNB	ICICI Bank
Bank of Baroda	Axis Bank
Canara Bank	Kotak Mahindra Bank Ltd.
Bank of India	Yes Bank Ltd.

3.4 Source of data collection

The study is based on secondary data where a major portion of data is extracted from 'Statistical Tables relating to Banks in India, annual publication of RBI'. Further, various articles, reports and research papers relating to capital adequacy published in different business journals, magazines, newspaper, periodicals and internet data was used. The data collected for the purpose of this study is shown in Table 1-2 below.

Table 1: Details of CAR, RoA, RoE, NPA, BPE, PSATA of 5 Public Sector Banks from 2005-2016

Year	CAR	ROA	ROE	NPA	BPE	PSATA
2005	12.78522693	0.802781689	15.23482884	1.39447493	61.602	32.53716565
2006	11.85069071	0.899510403	15.95721174	0.954324071	36.974	34.46762735
2007	12.32038096	0.901951217	15.85240506	0.913246844	47.324	32.54391514
2008	13.03431082	1.035193204	17.43171386	0.747818307	58.638	32.08217038
2009	13.88062603	1.200033457	20.14280818	0.538404355	74.762	28.75419125
2010	13.64588515	1.068893375	18.56158355	0.844835353	88.372	29.31752598
2011	13.22386445	1.080596103	18.96313775	0.865409644	108.692	28.79437585
2012	13.33879527	0.97656574	16.90710833	1.02637442	122.616	26.75995928
2013	12.44631847	0.847390645	14.01252404	1.952379182	136.004	26.86125544
2014	11.32765282	0.61210187	10.3465271	2.132373867	152.264	25.66128034
2015	11.59244722	0.482771321	8.243273904	2.705090318	158.92	26.20312091
2016	12.10175127	-0.478	-8.962	6.078973161	153.812	28.23319724

Source: *Reserve Bank of India statistical tables relating to banks in India, www.dbie.org.in, and author's own calculations. Geometric Mean is used as a measure of central tendency for all variables except for 2016 wherein ROA and ROE for public sector banks was negative, so Arithmetic Mean was used there.*

Table 2: Details of CAR, RoA, RoE, NPA, BPE, PSATA of 5 Private Sector Banks from 2005-2016

Year	CAR	ROA	ROE	NPA	BPE	PSATA
2005	13.42833809	1.108	13.37	0.671781326	75.644	17.62457686
2006	12.55494709	1.443509911	15.68463192	0.5224631	77.662	31.20104871
2007	12.64934147	1.166358971	15.28508606	0.889235062	71.448	34.64319105
2008	14.59024288	1.254369279	15.04963396	0.547101961	73.962	28.74399476
2009	16.17747006	1.242243055	13.12290942	0.838864341	79.908	30.11456209
2010	18.24510968	1.548009297	14.62613697	0.486621149	91.536	28.8085878
2011	16.74818859	1.585572475	15.68700033	0.265574068	110.186	28.61743306
2012	16.73007052	1.665501046	17.03722732	0.255183032	99.994	28.1868238
2013	17.3496526	1.732391061	18.04055131	0.204174095	103.204	25.37106308
2014	16.544116	1.789755379	17.82224767	0.362073206	102.062	26.72541179
2015	16.31243811	1.876702104	17.20296496	0.459302234	112.08	25.60780911
2016	16.05068797	1.598072881	15.03174154	0.717235828	120.998	27.12711137

Source: *Reserve Bank of India statistical tables relating to banks in India, www.dbie.org.in, and author's own calculations. Geometric Mean is used as a measure of central tendency for all variables*

4.0 Analysis of Performance of Bank

4.1 Profitability

This study unveils the relationship between one of the most important pillar of Basel Accord i.e. capital adequacy and profitability across two categories of banks. To establish the relationship between independent variable i.e. CAR and dependent variables ROA and ROE, linear regression analysis is used and linearity was confirmed by using a scatter diagram for the variables.

4.1.1 Public sector banks

Relationship between Capital Adequacy Ratio and Return on Assets

Regression Results between CAR (Pub) and RoA (Pub)					
Particulars	**Co-efficient(b)**	**Standard Error SE**	**Standardised Coefficient (β)**	**p-value**	**R square**
Intercept	-3.111	1.786		0.112	
CAR (Pub)	0.309	0.141	0.569	0.054	0.323

R square is .323. Thereby, 32.3% of variation in ROA gets explained by CAR. Beta value of CAR is .569 indicating a positive relationship between the two. Therefore, Estimated equation takes the form:
RoA = -3.111 + .309 CAR

Relationship between Capital Adequacy Ratio and Return on Equity

Regression Results between CAR (Pub) and RoE (Pub)					
Particulars	**Co-efficient(b)**	**Standard Error SE**	**Standardised Coefficient (β)**	**p-value**	**R square**
Intercept	-53.874	31.892		0.122	
CAR (Pub)	5.339	2.52	0.557	0.06	0.31

Here also R square is .31 leading to explanation of changes in ROE to extent of 31% by this model. The beta is .557, again a depiction of positive association of the two. Further, Estimated equation is as:
ROE = -53.874 + 5.339 CAR

4.1.1 Private sector banks

Relationship Between Capital Adequacy Ratio and Return on Assets

Regression Results between CAR (Pvt) and RoA (Pvt)					
Particulars	**Co-efficient(b)**	**Standard Error SE**	**Standardised Coefficient (β)**	**p-value**	**R square**
Intercept	0.069	0.508		0.894	
CAR (Pub)	0.092	0.032	0.668	0.018	0.446

In case of private sector banks also, R square is .446 indicating that 44.6% variation in ROA gets explained by CAR. The beta coefficient is .668 evidencing a positive relationship between the two. The Estimated Equation becomes:
RoA = .069 + .092CAR

Relationship between Capital Adequacy Ratio and Return on Equity

Regression Results between CAR (Pvt) and RoE (Pvt)					
Particulars	**Co-efficient(b)**	**Standard Error SE**	**Standardised Coefficient (β)**	**p-value**	**R square**
Intercept	11.166	4.024		0.02	
CAR (Pub)	0.288	0.256	0.335	0.287	0.112

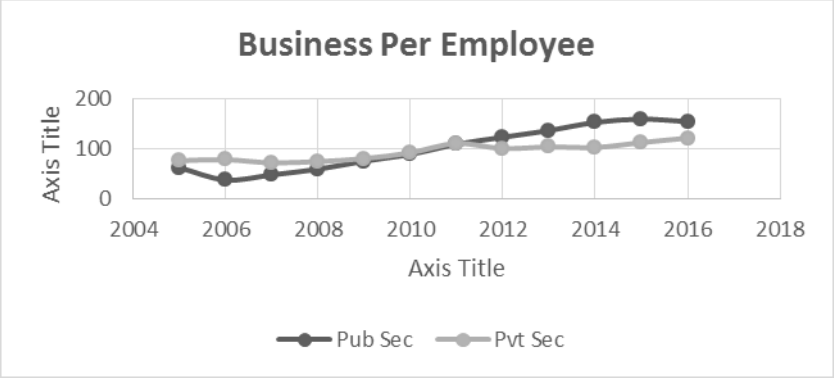
Unlike above, R square is .112 which indicates that 11.2% of variation in ROA gets explained by the model. Further beta is .335 evidencing a moderate positive relationship of the two. The Estimated Equation becomes:

RoE = 11.166 + .288 CAR

4.2 Productivity

We have used Business per employee as a measure for productivity. Business per employee is a measure of how efficiently a particular bank is using its employees for generating business. A higher business per employee ratio is a positive sign indicating that bank is able to generate more revenue from business sourced by its employees. The business per employee is illustrated graphically on the basis of arithmetic mean of BPE of 12 years for both public and private sector banks. The graph clearly depicts that with the adherence of banks with capital adequacy regulation of Basel Accord, public sector banks have witnessed increase in their BPE for all the years of study except for the year 2016 where there is little decline in the same. However the scenario is different for private sector banks where there is no specific pattern of BPE. It clearly depicts that as private sector banks are moving ahead on the path of compliance with basel guidelines, their BPE is not significantly contributing for improving efficiency and productivity of banks. An important inference here is that public sector banks have high BPE in comparison to private sector banks during the period of study.

Figure 1: An Overview of Productivity in Post Basel Era for Public and Private Sector Banks

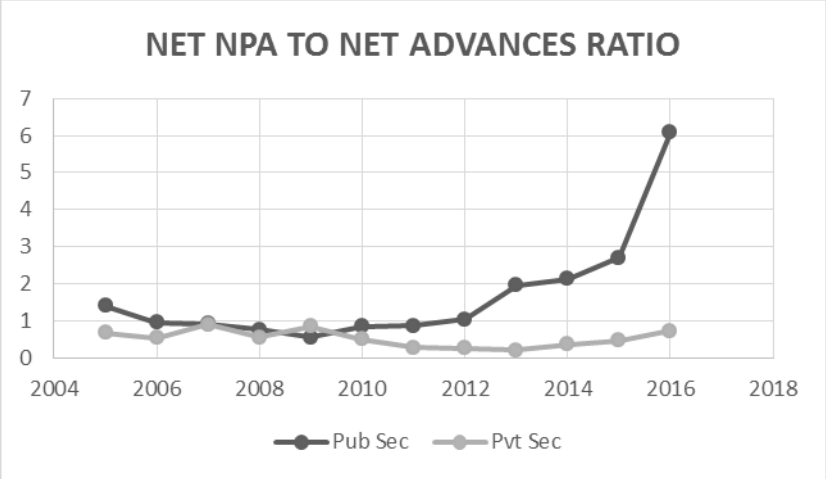


Source: *Data retrieved from Table1&2 Graphics: Author's own*

4.3 Asset quality

The mean of ratio of Net Non Performing Assets to Net Advances has been used a measure for asset quality in bank's portfolio for public and private sector banks. The results are illustrated graphically in Figure 2. In case of public sector banks, situation has worsened over the period of time with significant increase in NPA ratio from 2012 to 2016. Private sector banks during the period of study have maintained a low NPA ratio which clearly depicts that with compliance to Basel regulations over the period of study, private sector banks are better placed than public sector banks and have a healthy asset structure.

Figure 2: An Overview of Asset Quality in Post Basel Era for Public and Private Sector banks



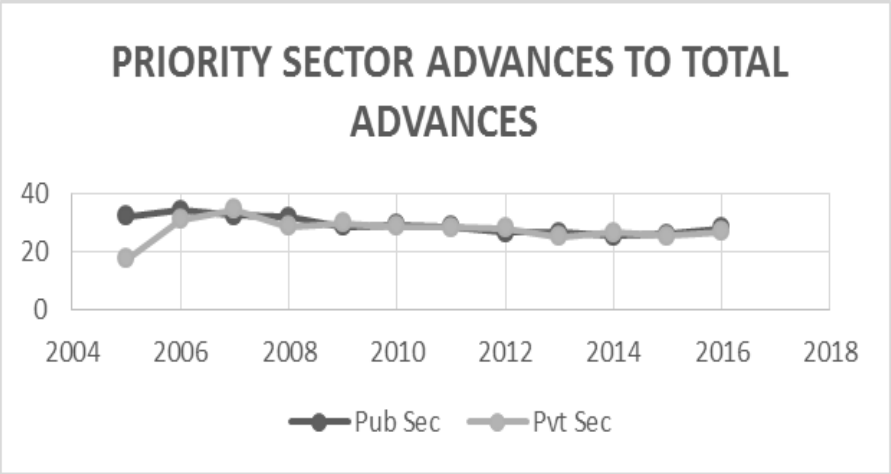
Source: *Data retrieved from Table1&2 Graphics: Author's own*

4.4 Social performance- priority sector advances to total advances

Priority Sector lending is an important role given by Reserve Bank of India (RBI) to the banks for providing a specific portion of bank lending to few specific sectors like agriculture, allied activities, micro and small enterprises, lower income group and other weaker sections. It essentially meant for all round development of the economy as opposed to focusing only on the financial sector. Since a major function of Indian banking sector is to provide funds for the development of economy, so it becomes imperative to evaluate the performance of banks in terms of their contribution towards

the growth of Indian economy which is measured by lending by banks to priority sector commonly known as Priority Sector Advances to Total Advances. Since Indian banks have been following Basel norms, so to have a holistic view of performance of Indian banks in the post Basel era, social parameters are to be considered. During the initial years of study, public sector banks have high contribution towards overall growth of economy in comparison to private sector banks by maintaining a high percentage of PSATA. However during later years of study both public and private sector banks have showcased almost equal contribution towards development of economy as depicted in the graph.

Figure 3: An Overview of Priority Sector Lending by Public and Private Banks in the Post Basel Era



Source: *Data retrieved from Table1&2 Graphics: Author's own*

5.0 Conclusion

The present work tries to study the impact of Basel Accord implementation in Indian banking sector across different categories of banks. The changes made in capital adequacy ratio of banks in compliance with Basel guidelines are likely to impact the performance of banks.

(i) The research depicts a significant relationship between CAR and profitability of selected banks. In public sector banks almost equal association was found between CAR and ROA and between CAR and ROE. In case of private sector banks, a good amount of association was seen between CAR and ROA. However scenario drastically changed for

ROE as CAR became a non -fitting predictor here. This clearly implies that Basel III guideline of CAR is not affecting ROE of private banks to a great extent.

(ii) Since private sector banks have maintained high CAR in comparison to public sector banks, which clearly depicts that maintaining excess capital over the stipulated guideline is not contributing towards increasing ROE of banks. The Basel Accord guideline of maintaining a sound capital adequacy ratio is more concerned with providing stability of banking system in India. The compliance with maintaining CAR as per Basel norms will provide relief for banks in a situation of crisis but is not in line with more dividends and profits.

(iii) Since Basel capital adequacy norms aim for stability of banks, which clearly implies that while banks are complying with CAR, they will definitely try to minimize the riskiness of assets in the portfolio of banks. It to a great extent holds true for private sector banks wherein except for few years, there is fall in NPA ratio with every passing year and with more adherence to Basel guideline. Public sector banks are more stressed than their private counterparts and have deteriorated as there is an increase in their NPA ratio. A high NPA ratio is an unhealthy sign both for banking system as well as for the economy as whole, so there is an utmost need for proper credit assessment and monitoring. Different guidelines in Basel III Accord for management of credit risk, if implemented, will definitely help rectify the present situation.

(iv) An important reference from this work is that Private sector banks which are generally considered more productive than public sector banks, are lagging behind in BPE. It undoubtedly illustrates that employees in public sector banks are able to generate more business in comparison to private sector bank employees. A significant reason for this can be huge recruitment in private sector banks which brings down BPE as BPE is calculated by dividing the total business generated by the total number of employees.

(v) In terms of social performance, both the categories of banks have showcased almost equal contribution towards their responsibilities for overall growth of economy by maintaining a healthy percentage of PSATA.

(vi) This research brings novelty by analyzing the performance of banks for different parameters in the post Basel era. Barring NPA ratio of public sector banks and ROE for private sector banks, which is a real cause of concern, all other performance parameters have improved over the period of study. The adherence of both public and private sector banks to Basel guidelines is making banking system healthy and stable which is a pre requisite for a developing economy.

6.0 Limitations of the Study

In this study, the relationship of CAR is established with bank performance considering all other factors as constant however, in the practical sense, there may be many other factors like the bank's book size, government policies, reputation, marketing strategies and macroeconomic conditions which affect the performance of banks. So this study can be extended to include the effect of all these variables for a better practical approach. Further, data for this study is taken from the public domain, which is published data by the Reserve Bank of India (RBI) at various points of time, so any possible omission in published data can be a source of error in the outcome of the study.

7.0 Scope for Further Research

This research studies the impact of Capital Adequacy regulation on performance of banks and can be further extended to study the impact of Basel III regulations in totality comprising of all parameters of capital adequacy, liquidity, capital buffers and leverage on performance of banks. Another major extension of this work can be to study the impact of Tier I and Tier II capital separately on profitability of banks.

Abbreviations

BCBS -- Basel Committee on Banking Supervision
CAR -- Capital Adequacy Ratio
LPG -- Liberalization, Privatization and Globalization
LCR -- Liquidity Coverage Ratio
NSFR -- Net Stable Funding Ratio
HQLA -- High Quality Liquid Assets
ROA -- Return on Assets
ROE -- Return on Equity
NPA -- Non Performing Assets
PSATA -- Priority Sector Advances to Total Advances
BPE -- Business Per Employee
Pub -- Public Sector Banks
Pvt -- Private Sector Banks

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