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FINANCIAL PERFORMANCE ANALYSIS OF "NEW GENERATION PRIVATE SECTOR BANKS": A CAMEL MODEL APPROACH IN INDIAN CONTEXT

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Abstract *The banking sector in Indian context has been witnessing several dynamic changes from time to time. It forms an imperative constituent of any financial & economic system. The predominance of public sector banks (PSBs) in the industry has reduced considerably as private sector banks (PVBs) are accomplished to build up a sound position within the industry by utilizing technology and skilled management. The Indian banking sector has been experiencing several dynamic structural changes with the introduction of new generation banks in the private sector. Over time the ranking and position of banks have changed due to the change in the banks' performance. The research article aims to measure the performance of the new generation private banks in India using the CAMEL model approach. The research study used secondary data. Selective ratios representing the CAMEL model are employed to scrutinize and compare the performance of the ten private banks-ICICI, Axis, HDFC, YES, Kotak Mahindra, IndusInd, IDBI, Bandhan, IDFC FIRST and DCB. The data has been collected from MoneyControl and annual reports of respective banks over five years (from 2014-15 to 2018-19). Based on the overall rank, the study has found that the Bandhan bank is leading followed by HDFC bank and others. Based on one way ANOVA, the study found considerable variation in the performance across the banks. The study may be beneficial to the stakeholders in taking suitable decisions related to these banks.*

Keywords: *New Generation Private Banks, Performance Analysis, CAMEL Model, Ratios*

JEL: *G21, L25*

Abbrevation: *Public sector banks-PSBs, Private sector banks-PVBs*

INTRODUCTION

The banking sector forms a significant portion of our economy. This sector is an indispensable part of our financial system. The banking system is the only means to include the bottom of the pyramid in the formal financial system. Banks offer a variety of services to their customer like basic savings and credit, insurance, payment, debit card, ATM facility, online banking and many more. While both the PSBs and PVBs are operating in India along with the foreign banks and RRBs, PVBs are able to build up a sound position within the industry by utilizing technology and skilled management over time. ICICI Bank first introduced Internet banking in India. At present, in India, there are 22 PVBs and 12 PSBs. Over the years, the private sector banks are gaining over public sector banks. Based on a livemint report, out of the total amount of loan (Rs. 98.2 trillion) given by Indian banks, the PSBs and PVBs have a market share of 58.8% and 33.6% respectively. The situation was different in 2011 where the share of private sector bank was only 17.8%. Private sector banks gave a loan of Rs. 7.3 trillion while the figure was Rs. 2.3 trillion for public sector banks.

The banks which were not nationalized at the time of bank nationalization that took place during 1969 and 1980 are classified as old private sector banks in India. These old private sector banks are operating in India for a longer period. Karnataka Bank, Jammu and Kashmir Bank, City Union Bank, South Indian Bank, etc. are old private sector banks. The new generation private sector banks were formed after 1991. With the launch of new economic policy in 1991, the private sector was allowed to enter India on a large scale and after which many private banking companies entered India. Also, there was an amendment to the Banking Regulation Act in 1993. Banks were allowed to operate under the following conditions:

- The minimum net worth should be of Rs. 100 crores.
- One-fourth (25%) of the paid-up capital should be considered as promoter holding.

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- The public offering should be made within three years of staring the operation.

Currently, there are ten new generation private sector banks in India. These are ICICI Bank, Axis Bank, Bandhan Bank,Yes Bank, HDFC Bank, IndusInd Bank, Kotak Mahindra Bank, DCB Bank, IDFC FIRST Bank and IDBI Bank.

In India, the CAMEL rating model was introduced in 1995 on the recommendation of the former RBI governor, Mr. Padmanabhan. Under the CAMEL rating system, five metrics are used to rate every bank or financial institution - capital adequacy, asset quality, management quality, earnings quality and liquidity. Numerous studies have taken place at different times where the policymakers and scholars have sought to analyze the efficiency of financial institutions using the CAMEL model. The banks which require special regulatory consideration can be identified by the RBI using the CAMEL rating (Bodla & Verma, 2006).

The CAMEL rating has become a concise and important tool for regulators and examiners (Barr et al., 2002). The annual inspection of financial position by commercial banks using the CAMEL model helps to take precautionary measures to ensure their sustainability (Siva & Natarajan, 2011).

Many studies have been conducted previously in the public sector banks and private sector banks that use CAMEL and other models. However, there is variation in the findings of researchers as changes are taking place very frequently in this industry. Earlier studies were mostly focused on a combination of PSBs and PVBs, standalone public sector banks and private banks in India. But, there is no specific study concerning all the new generation private sector banks in India during the period starting from 2014-15 to 2018-19. While private sector banks cover nearly 20% of the banking industry's total assets in India, the new generation private sector banks account for nearly 15% of the same (Misra, 2011). Since the new generation private sector banks also form a very significant portion of our banking industry, it is pertinent to analyze the performance of these banks especially when some private banks are under strict RBI regulation and supervision. Moreover, our study considered IDBI as a new generation private sector bank after the government recently sold its majority holdings . We also included IDFC FIRST bank in the sample as a new generation private sector bank. This study adds to the existing literature of the banking performance by applying the CAMEL model on the new generation private banks in India separately.

This paper is a revised version of the performance of banks using the CAMEL approach where it covers all the new generation private banks in India till now. The present paper tries to compare the performance of all the ten banks using a ranking framework developed based on CAMEL parameters. The research study contain a literature review in the second section followed by objective of the study in the third section, hypothesis in the fourth section, methodology in the fifth section, result & discussion in the sixth section and conclusion in the last section.

LITERATURE REVIEW

Reddy and Prasad (2011) examined the financial performance of two regional rural banks, Andhra Pragathi Grameena bank (APGB) and Sapthagiri Grameena Bank (SGGB) using the CAMEL model for the period 2006-2010. Twenty variables linked to CAMEL were used. The study concluded that APGB had a higher overall score than SGGB. Kumar et al. (2012) did a study on 12 PSBs and PVBs in India applying the CAMEL model and found that private sector banks were performing better and at the top list compared to the PSBs. Nandi (2013) carried out a comparative study for the period 2002-12 using the CAMEL approach between ten PSBs and ten PVBs in India. The study found that Bank of Baroda was ranked first followed by ICICI and HDFC Bank. The study concluded that PSBs performed better than private sector banks. Srinivasan and Saroj (2013) looked into the CAMEL model on HDFC and ICICI bank and their study revealed no considerable variation in the level of performance of the banks. Tripathi et al. (2014) performed a similar study on Kotak Mahindra Bank and Axis Bank and found that there is no considerable variation in the performance of both the banks. However, they concluded that the performance of Axis bank was marginally better than that of Kotak Mahindra Bank. Gupta (2014) conducted a study on 26 Indian PSBs using the CAMEL model to evaluate the performance of these banks. The author used multiple ratios under each segments of the CAMEL model and one way ANOVA to measure the performance. Based on the composite rating the article found that Andra Bank was the leader, followed by Bank of Baroda and others. Also, the study concluded that there is a substantial variation in the performance across all these 26 banks. Kaur et al. (2015) did a study on five selected PSBs using the CAMEL model for a period of five years (2009-14). The study used multiple ratios under each of these categories of the CAMEL model. The research found that in all aspects of CAMEL model, Bank of Baroda was leading while PNB was leading in capital adequacy, management efficiency, earning quality and Bank of Baroda in assets quality. Srinivasan and Britto (2017) tried to evaluate the financial performance of 16 commercial banks including both PVBs and PSBs in India for the period 2013-2017. The study used financial ratios to assess the performance and found that performance of PSBs were weaker than the PVBs. In order to examine the influence of liquidity, efficiency and solvency, on the profitability of these sixteen selected banks the study also performed panel data estimation and found significant results.

OBJECTIVE OF THE STUDY

The objectives of the study are:-

- Analyze the performance of the new generation PVBs in India.
- Compare the performance of the new generation PVBs in India.

HYPOTHESIS

The research hypothesis is-

H_A: There is considerable variation in the performance of new generation PVBs in India.

The sub-hypothesis can be written as-

H_1: There is considerable variation in the Capital Adequacy Ratio of new generation PVBs in India.

H_2: There is considerable variation in the Net NPA/Total Assets (TA)Ratio of new generation PVBs in India.

H_3: There is considerable variation in the Return on Net Worth of new generation PVBs in India.

H_4: There is considerable variation in the Interest Income(II)/ Total Assets (TA) Ratio of new generation PVBs in India.

H_5: There is considerable variation in the Liquid Assets/ Total Asset (TA) Ratio of new generation PVBs in India.

METHODOLOGY

Research Design

The research design is Descriptive The study is empirical in nature.

Sample Size, Sampling Technique

At present, there are 22 PVBs in India. Our sample size consists of 10 PVBs since we are focusing on new generation PVBs. The sampling technique is purposive sampling.

Data Collection

The study has been carried out based on secondary data collected from the annual reports of respective banks, moneycontrol.com, various articles, newspapers etc. Currently, in India, there are ten new generation PVBs (as per the RBI website). These are listed below.

- ICICI Bank Ltd.
- Axis Bank Ltd.
- HDFC Bank Ltd.
- YES Bank Ltd.
- Kotak Mahindra Bank Ltd.
- IndusInd Bank Ltd.
- IDBI Bank Ltd.
- DCB Bank Ltd.
- Bandhan Bank Ltd., and
- IDFC FIRST Bank Ltd.

The financial ratios like Interest Income/Total Assets, Capital Adequacy Ratio, Return on Equity (ROE) for five years (2014-15 to 2018-19) of all of the ten banks are taken from Moneycontrol.com. We compiled other financial data from the annual reports of the banks considered in the study. Most of the data are selected based on convenience and easy availability.

Period of Study

The period of study covers five years from 2014-15 to 2018-19. The rationale of this study period is that during this period RBI re-categorized IDBI as a PVBs (March, 2019) and our sample includes the same. During this period only IDFC Bank started functioning (October, 2015), which is also included in our sample. IDFC Bank merged with NBFC Capital First Ltd. during December 2018 and created IDFC FIRST Bank Ltd. Further, an attempt has been made to extend the literature in the current scenario.

Mode of Analysis

- *Simple Average Analysis* **-** To rank the respective banks by averaging the ratios for five years. This analysis is used to rank the banks based on the selected components of the CAMEL model. In order to avoid subjective judgment, the weights are avoided and simple averages are calculated.
- *Descriptive Analysis* **-** To illustrate and sum up the behavior of variables (e.g., Mean, standard deviation).
- *One Way ANOVA* **-** To examine the mean difference of various ratios across banks. This is used when we want to compare the means of more than two or more samples. The confidence interval here is assumed at 95%. That is, the level of significance is 5%. The One Way ANOVA is used in our analysis to test the

null hypothesis. The null hypothesis is: There is no considerable variation in the performance of new generation PVBs in India. The variables to be used for the study are presented below (Table 1).

Table 1: Description of Ratios Representing the Components of the CAMEL Model

Components	Representative Ratio	Significance	Assessment
Capital Adequacy	Capital Adequacy Ratio(CAR)	This ratio indicates the risk taking ability of banks. This ratio is an indicator of risk absorbing capacity by banks on account of risky assets.	The higher the ratio better is the financial health of banks.
Assets Quality	NET NPA/Total Assets	This ratio is an indicator of the quality of the asset of banks. It indicates the proportion of NPA of total assets.	Lower the ratio better is the asset quality.
Management Quality	Return on Net Worth	ROE shows the efficiency of the management in the successful deployment of the owner's fund in profitable investment opportunities to generate sufficient return.	A higher ratio is desirable.
Earnings Quality	Interest Income/ Total Assets	This ratio indicates the proportion of interest income generated on total assets. Interest income constitutes a major portion of a bank's total income.	A higher ratio is desirable.
Liquidity	Liquid Assets/ Total Assets	This ratio indicates the proportion of liquid assets in the total assets of the bank. The bank with more liquid assets can meet its customer demand and emergencies. Liquid assets here comprises of Cash and Balances with Reserve Bank of India and Balances with Banks Money at Call and Short Notice.	A higher ratio is desirable.

RESULT AND DISCUSSION

Simple Average Analysis

Table 2: Performance Analysis based on the Capital Adequacy Ratio

Company Code	Company Name	Capital Adequacy Ratio (C)	Rank
1	ICICI	17.27	1
4	KOTAK	17.19	2
5	YES	16.80	3
2	HDFC	15.76	4
3	AXIS	15.55	5
9	DCB	15.22	6
10	IDFC FIRST	14.88	7
6	INDUSIND	14.42	8
8	BANDHAN	12.14	9
7	IDBI	11.22	10

Source: Author's own calculation

The above Table 2 designates that all the banks have maintained the CAR of 8% as required to be maintained under BASEL II. But, amongst the ten private banks for the study ICICI bank has maintained the highest average CAR of 17.27% for five years followed by Kotak Mahindra Bank with 17.19%. Thus based on this CAR, the ICICI bank is ranked as 1, Kotak Mahindra Bank as 2 and so on as shown in the above table.

Table 3: Performance Analysis based on Assets Quality

Company Code	Company Name	NET NPA/ TA(A)	Rank
2	HDFC	0.17	1
8	BANDHAN	0.24	2
9	DCB	0.47	3
6	INDUSIND	0.51	4
4	KOTAK	0.61	5
5	YES	0.74	6
10	IDFC FIRST	0.82	7
3	AXIS	1.99	8
1	ICICI	2.48	9
7	IDBI	5.67	10

Source: Author's own calculation

To represent the Assets Quality, Net Non-performing Assets (NNPA) to Total Assets (TA) is used and based on this the banks are ranked. A higher NPA out of the total assets discourages investors and depositors to invest and deposit in a bank. The depositors withdraw their deposits and thereby create a massive liquidity demand that can impact profitability again. Thus, this ratio is very significant as NPA reduces, liquidity improves.

HDFC Bank has the least average Net NPA/TA ratio of 0.17 for five years followed by Bandhan Bank with 0.24 and so on. Accordingly, these banks are ranked as showed in the above Table 3. The lower NNPA/TA ratio indicates the efficiency in managing the NPA and sound lending policy by these banks and the results indicate that HDFC bank is the most efficient in this case.

Table 4: Performance Analysis based on Management Quality

Company Code	Company Name	Return on Net Worth (M)	Rank
10	IDFC FIRST	21.45	1
2	HDFC	16.04	2
5	YES	14.69	3
6	INDUSIND	14.55	4
8	BANDHAN	13.02	5
4	KOTAK	11.32	6
9	DCB	10.96	7
3	AXIS	9.19	8
1	ICICI	9.00	9
7	IDBI	-28.55	10

Source: Author's own calculation

Management quality can be measured in terms of ROE, business per employee, profit per employee, etc. It shows the efficiency of the management in generating higher earnings, business volume, profit at a least cost. Sound ROE indicates the efficiency of the management in the successful deployment of the owner's fund in profitable ventures. Here, IDFC FIRST Bank has the highest average ROE (21.45%) followed by HDFC Bank (14.69%) and others (Table 4). IDBI Bank has negative ROE indicating the inefficiency of management to generating the minimum return on its owner's fund and thus it stood at the last position here amongst the ten private banks.

Table 5: Performance Analysis based on Earnings Quality

Company Code	Company Name	INTEREST INCOME/TA(E)	Rank
8	BANDHAN	8.70	1
9	DCB	8.56	2
4	KOTAK	8.21	3
6	INDUSIND	8.20	4
2	HDFC	8.04	5
5	YES	7.71	6
7	IDBI	7.31	7
3	AXIS	7.27	8
1	ICICI	6.95	9
10	IDFC FIRST	5.34	10

Source: Author's own calculation

Earnings and profitability are two important components in measuring the performance of any organization. Earnings indicate the ability to meet the demands of various stakeholders of any business entity. Interest income constitutes a significant portion of the earnings of banks. Banks earn interest income on various investments and their advances as well. Here, Interest income (II) to total assets (TA) ratio is averaged for five years. Bandhan Bank is positioned at the top in terms of Interest Income to Total Assets Ratio followed by DCB, Kotak, IndusInd, HDFC, YES, IDBI, AXIS, ICICI and IDFC FIRST Bank. YES Bank, IDBI and Axis Bank are more or less showing the same amount of Interest Income as a percentage (%) of their total assets (Table-:5:). Similar is the case with Bandhan Bank, DCB, KOTAK, INDUSIND and HDFC having little variation in the earnings quality. Bandhan bank has the strongest earnings quality and IDFC FIRST Bank has the lowest earnings quality amongst the ten private banks.

Table 6: Performance Analysis based on Liquidity

Company Code	Company Name	Liquid Assets/ Total Assets(L)	Rank
8	BANDHAN	14.68	1
1	ICICI	9.12	2
2	HDFC	8.37	3
4	KOTAK	8.23	4
5	YES	7.81	5
3	AXIS	7.54	6
7	IDBI	7.27	7
9	DCB	6.62	8
6	INDUSIND	6.60	9
10	IDFC FIRST	4.76	10

Source: Author's own calculation

Liquidity is essential for any banking company. Any bank needs to maintain enough liquidity to fulfill its customers' demand apart from the mandatory requirements like CRR, SLR,etc. Liquidity is an important criterion for measuring the performance of any bank. Banks with more liquidty would be able to fulfill the demands and emergencies of their customers. Also, higher liquidity indicates better working capital management of the banks. Here, Bandhan Bank ranked 1st in terms of liquidity (14.68%) followed by ICICI (9.12%). Thus, Bandhan Bank is more efficient in managing its liquidity compared to the other nine new generation private banks. YES Bank, Axis Bank and IDBI are positioned with the more or less same amount of liquidity. DCB and IndusInd are also positioned next to each other with a little variation in their average percentage of liquidity (Table 6).

Table 7: Performance Analysis based on Composite Rank

Company Code	Company Name	NET NPA/ TA(A)	INTERESTINCOME/ TA(E)	Capital Adequacy Ratio (C)	Return on Net Worth (M)	Liquid Assets/Total Assets(L)	Average Score	Overall Rank
		A	E	C	M	L		
1	ICICI	2.48	6.95	17.27	9.00	9.12	8.96	6
2	HDFC	0.17	8.04	15.76	16.04	8.37	9.68	2
3	AXIS	1.99	7.27	15.55	9.19	7.54	8.31	9
4	KOTAK	0.61	8.21	17.19	11.32	8.23	9.11	5
5	YES	0.74	7.71	16.80	14.69	7.81	9.55	3
6	INDUSIND	0.51	8.20	14.42	14.55	6.60	8.85	7
7	IDBI	5.67	7.31	11.22	-28.55	7.27	0.58	10
8	BANDHAN	0.24	8.70	12.14	13.02	14.68	9.76	1
9	DCB	0.47	8.56	15.22	10.96	6.62	8.37	8
10	IDFC FIRST	0.82	5.34	14.88	21.45	4.76	9.45	4

Source: Author's own calculation

By using the CAMEL model overall performance of the ten banks is summarized in the above Table 7. The average of all the five ratios is calculated for each of the ten banks and then composite ranks are assigned. Based on this, Bandhan Bank has evolved as the best private sector bank among the ten new generation PVBs followed by HDFC Bank, YES Bank, IDFC FIRST Bank, Kotak Mahindra, ICICI Bank, IndusInd Bank, DCB Bank and Axis Bank. IDBI stood at the last position with the lowest average score of 0.58.

Descriptive Analysis

Table 8: Table Showing Descriptive Statistics

Descriptive Statistics	NET NPA/ TA(A)	Interest Income/TA(E)	Capital Adequacy Ratio (C)	Return On Net Worth (M)	Liquid Assets/ Total Assets(L)
Mean	1.37	7.63	15.05	9.17	8.10
Median	0.63	7.78	15.72	11.40	7.83
Standard Deviation	1.74	2.03	5.76	20.03	3.34
Range	8.18	12.92	31.48	152.96	20.49
Minimum	0.00	0.00	0.00	-50.99	3.87
Maximum	8.18	12.92	31.48	101.97	24.36

Source: Author's own calculation

The descriptive statistics revealed the mean score of NET NPA/TA, Interest Income/TA, Capital Adequacy Ratio, Return On Net Worth, Liquid Assets/Total Assets are 1.37, 7.63, 15.05, 9.17 and 8.10 respectively. This indicates that the new generation PVBs in India are having less NPA to total assets on an average (1.37). The companies are also maintaining a sufficient amount for capital adequacy and thus, these banks can absorb the risk arising out of risky assets. But, there are wide fluctuations in Return on equity and liquidity which can be seen from range, standard deviation, maximum and minimum value. This shows the liquidity position and management efficiency are not consistent over the years. The minimum value for NET NPA/TA, Capital Adequacy Ratio and Interest Income/TA is zero. This is because IDFC FIRST did not report these values in the beginning year.

One Way ANOVA

Table 9: ANOVA Table Comparing the Performance

ANOVA FOR CAPITAL ADEQUACY						
Variation	**SS**	**dof**	**MS**	**F**	**P-Value**	**F (crit.)**
Groups(between)	149.83	9.00	16.65	0.52	0.85	2.21
Groups(within)	966.84	30.00	32.23			
Total	1116.67	39.00				
ANOVA FOR ASSETS QUALITY						
Groups(between)	117.23	9.00	13.03	27.57	0.00	2.21
Groups(within)	14.17	30.00	0.47			
Total	131.40	39.00				
ANOVA FOR MANAGEMENT QUALITY						
Groups(between)	8879.78	9.00	986.64	21.08	0.00	2.21
Groups(within)	1404.10	30.00	46.80			
Total	10283.87	39.00				
ANOVA FOR EARNINGS QUALITY						
Groups(between)	52.88	9.00	5.88	7.61	0.00	2.21
Groups(within)	23.15	30.00	0.77			
Total	76.03	39.00				
ANOVA FOR LIQUIDITY						
Groups(between)	234.18	9.00	26.02	4.21	0.00	2.21
Groups(within)	185.59	30.00	6.19			
Total	419.76	39.00				

Source: Author's own calculation

From the ANOVA analysis (Table 9), we can see a considerable variation in the means of the ten banks in case of all the ratios except for the Capital Adequacy Ratio. The degrees of freedom are indicated by dof (Table 9). Here, in all the cases p-value is significant (< 0.05) except for one case. In other words, the F-statistic is greater than the critical value of F for all the four parameters of the CAMEL model except for Capital adequacy where the F-calculated (0.52) is less than F-critical (2.21). Thus, the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a considerable variation in the performance amongst the ten new generation PVBs in India. So far as Capital Adequacy is concerned, since all the banks are trying to maintain the minimum required capital as per Basel-II norms, there is insignificant variation in their performance and it is statistically proved by the results shown in the above Table.

CONCLUSION

The present research tried to study the financial performance of ten new-generation Indian private sector banks. The study found that Bandhan Bank is the most efficient amongst all the new generation private sector banks followed by HDFC Bank while IDBI Bank was placed last. Thus, it shows that Bandhan Bank after getting the permission of setting up a universal bank, started giving fair competition to the well-established private sector banks. At the same time, IDFC FIRST Bank is also able to position itself in the fourth position showing a good overall performance. The private sector banks have a significant contribution to our economic growth. The Indian banking sector has been experiencing several dynamic structural changes with the introduction of new generation private banks. The predominance of public sector banks in the industry has reduced considerably as private banks are capable to build up a sound position within the industry by utilizing technology and skilled management. Many of the social-economic activities are directly or indirectly linked with the banking system. Therefore, the banking sector needs to be on a sound base. Along with the social obligation of banks, liquidity and profitability are also important. A bank with a sound financial base can build the public's confidence as well as discharge social obligations. The study can be beneficial for investors while making a sound investment decision amongst these new generation banks. Management efficiency and liquidity can be a good option to look at before taking any investment decision. The study can also help the regulators and the government in taking appropriate regulatory and policy decisions. The government can assess the requirement of infusing capital and can identify the bank.

Only secondary data has been used for this study. Only limited ratios are selected to represent the CAMEL model and it is carried out for five years period 2015-19 only. The study focused on new generation private banks only.The result may not be generalized for all banks in India but the result can be generalized for all private sector banks in India since the new generation PVBs cover nearly three-fourths of the total assets of the private sector banks in India.

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