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Performance Assessment of Selected Indian Public and Private Sector Banks- A CAMEL Framework

Ibha Rani
Kristu Jayanti College, Bangalore

Dr. N. Mukund Sharma
BNM Institute of Technology, Bangalore

Abstract

A strong Banking Industry is a significant measure of a country's economic development. An attempt has been made in this study to assess the performance and the soundness of the top three public sector banks based on the market capitalization namely SBI, BOB, and PNB, and from the private sector it's HDFC, ICICI and Kotak Mahindra bank. The data has been collected for the period of 2017-18 to 2019-2020 (3 years). CAMEL (Capital adequacy, Asset Quality, Management Efficiency, Earning Quality and Liquidity) framework has been used to evaluate the performance. As per the composite ranking based on all the parameters and sub-parameters of the CAMEL model, HDFC secured 1st rank followed by Kotak Mahindra Bank and ICICI. The fourth and fifth ranks are occupied by Bank of Baroda and State Bank of India respectively while the last position is secured by Punjab National Bank.

Keywords- Bank, CAMEL, Capital Adequacy, Asset Quality, Management ability, Earnings Quality, Liquidity

INTRODUCTION

In the current scenario, banks play an important role by which people will be able to make transactions anywhere easily. The banking industry is an important aspect of the financial system that contributes significantly to a country's economic development. The India Brand Equity Foundation (IBEF) claims that the India's financial and economic status is significantly superior to that of any other country in the world. In the globalized economic scenario, Banks plays a significant role in the mobilization of savings and transmission of credit across the economy's many sectors. In the past several years, banks have achieved several milestones and it reaches even to the backward area of the nation. After the initiation of the government of India in 2005, the concept of financial inclusion has been initiated by the Reserve Bank of India. This scheme connected the rural and outskirt area with the banking sector. Currently, most of the citizens are connected to the banking sector. To

maintain the trust of people in the banking sector and to protect the economic health of the country, it is critical to assess the banking sector's financial soundness.
The CAMEL framework has been used to assess the financial performance of selected banks in this study.

CAMEL Rating Model

Three federal banking supervisors of the United State (Federal Reserve, the Federal Deposit Insurance Corporation, and office of the Comptroller of Currency) created the CAMEL model for the first time in the 1970s. In India, the CAMEL model was adopted by the recommendation of the Padmanabham Working Group Committee in 1995. Later on, RBI used this rating model for the Annual Financial Inspection to measure the liquidity, solvency, and operational health of banks. This model has been modified in 1996 with the sixth component as "S" (Sensitivity to market risk). On a scale of 1 to 5, each component of this model is rated. The Best-rated bank receives a Score 1 and the worst rated bank receives a score 5. CAMEL is shortened form of five components of bank financial health.

- (C)APITAL ADEQUACY
- (A)SSET QUALITY
- (M)ANAGEMENT EFFICIENCY OR CAPABILITIES
- (E)ARNING QUALITY
- (L)IQUIDITY POSITION

LITERATURE REVIEW

Praveen Kumar (2014) has **evaluated** the efficiency of the commercial bank under the ownership of public and private sector banks for five years from 2007-08 to 2012-13. As per the CAMEL model the average private sector bank is better to compare than the public sector bank.

Jagajeet Kaur and Vineet Kaur (2016) assessed the financial soundness of public sector banks from 2003-04 to 2013-14 by the use of CAMEL model. As per the composite ranking, 1st position is secured by the Bank of Baroda followed by Punjab National bank while the last position is secured by the Central bank of India. Canara Bank and State bank of India was average performer while Union bank, bank of India, Syndicate Bank and Central bank of India were considered as a below-average performer.

Ramya (2017) used the CAMEL model to examine the financial performance of the State Bank of India from 2012 to 2016. As per the study, for improving the financial position of SBI, The management should take some necessary step in terms of some parameters as Debt-Equity ratio, Operating profit and non-interest income to total income**.**

Princika Bothra & Ashwin Purohit (2018) has examined the performance of selected public namely SBI and Private sector namely ICICI bank for the study period of 2012-13 to 2016-17. This evaluation has been done by using the CAMEL model. As per the study, both banks have to improve in certain parameters. For ICICI Bank, capital Adequacy ratio and quality of Assets and for SBI Management Efficiency, Earning Quality, and Liquidity parameters should be improved.

Santosh Kandel (2019) evaluates the performance of selected commercial banks operating in Nepal through the CAMEL rating model. The study suggested that in Nepal there are four contributing factors for better performance of selected Nepali banks namely Capital adequacy, Asset quality, Earnings Quality and Liquidity. Within these four factors, Earning is the main contributing component for influencing directly to the performance of a bank. Other factors too influence the banks' performance such as capital adequacy, asset quality and liquidity other than earnings.

Shelly and Pramod Kumar Singhal (2020) measured the financial position and performance of 21 Indian Public Sector banks over a 10 year period of from 2008-09 to 2018-19. As per the composite ranking of CAMEL model, Indian Bank secured 1st rank followed by the Andhra Bank, Bank of Baroda, SBI and Syndicate bank respectively and the lowest rank is secured by the Central bank of India.

Anh Huu, Hang Thu and Houng Thanh Pham (2020) examined the financial performance of 31 Vietnamese banks for a period of 6 years from 2013 to 2018 through three econometric models based on the CAMEL component. As per the study, the four-component of the CAMEL model, such as Capital Adequacy, Asset quality, Management efficiency and Liquidity position have an important impact on the performance of Vietnamese commercial bank.

PROBLEM STATEMENT

Banks play a significant role in our developing country's development. According to the majority of studies, private banks in India earn is more profit than that of Public sector bank. As a result, the study will assess to evaluate the performance and position of Public sector banks (SBI, BOB and PNB) and Private Sector banks (HDFC, ICICI, and KMB). The top three banks are based on the market capitalization chosen for the study.

OBJECTIVES OF THE STUDY

- To assess the financial performance of sample of Indian public and private sector banks in terms of **C**apital adequacy, **A**sset Quality, **M**anagement ability, **E**arnings and **L**iquidity position.
- To assign a ranking based on the CAMEL model's components.

RESEARCH METHODOLOGY

Data Collection

The data used in this study is secondary in nature. The essential data is gathered from the annual reports of selected banks as well as data from Reserve bank of India.

Study periods

The research study covers a period of three years for the financial year from 2017-18 to 2019-20.

Sample Banks

Samples of six banks (Three from the public sector and three from the private sector) have been selected for the study. The criteria to select the sample bank were based on the highest market capitalization. The banks matched under these criteria are State bank of India, Bank of Baroda and Punjab national bank from public sector bank and HDFC, ICICI and Kotak Mahindra bank from the private sector

Statistical Tools

To examine the financial position of selected banks, internationally accepted CAMEL ranking models have been used. It is a subjective framework to assess the financial strength of banks and composite ranking shows the bank comparative position in terms of other banks. Ratios, mean and percentage have also been used for the analysis.

EMPIRICAL RESULTS AND DISCUSSION

In this section, we will assess the financial health of selected banks based on the CAMEL framework. Only those parameters are chosen which are appropriate for the study. The selection of parameters is based on analytical significance, availability of data and its relevance for the study. The below table indicated the selected parameters for the study under each acronym of the CAMEL framework:

Table 1- Calculated Ratio under CAMEL Framework

Capital Adequacy	Asset Quality	Managerial Efficiency	Earning Abilities	Liquidity Position
a. Capital Adequacy ratio	a. Net NPA to net Advance	a. Return on Equity (ROE)	a. Return on Assets (ROA)	a. Liquid Asset to Total Asset
b. Advance to Total Assets	b. Investment to Total Asset	b. Business per Employee	b. Net Interest Margin (NIM)	b. Liquid Asset to Total deposit
c. Government Securities to Total Investment	c. Term Loans to Total Advance	c. Profit per Employee	c. Operating Profit to Total Asset	c. Cash Deposit Ratio

1. **Capital Adequacy (C)**

It shows the capabilities of the bank to absorb unforeseen losses. It is necessary to maintain for the safety of people’s money with the banks. In case of loss of loans, it helps to meet the demand of depositors; As a result it’s necessary to maintain a significant level of adequacy. As per the Basel III norms, a bank should maintain a CAR of 8% but as per the RBI, Public sector banks should maintain a CAR of 12%.

The three ratios have been considered for this component, which are:

a. **Capital Adequacy Ratio (CAR)**- It is determined by dividing the Tier 1 capital and Tier 2 Capital with Risk-Weighted assets. Higher the percentage of this ratio indicates the better position of the bank.

CAR= (Tier1 + Tier 2 capital/ Risk weighed Asset)*100

b. **Advances to Total Assets Ratio -** This percentage indicates how strong a bank towards lending which results in improved profitability. The greater the ratio, the higher is profit and it is ranked number 1.
ADV/TA Ratio= (Advances/Total Assets)*100

c. **Government Securities to Total Investment-** Government securities are widely regarded as the safest debt investment option. It means higher investment in it will result in lower risk and vice versa.
Govt. Sec to T. Inv Ratio= (Govt. Securities/ Total Investment)*100

Table 2: Composite Capital Adequacy (C)of Selected Banks

Type	BANK NAME	CAR		AD/T.A		GOVT SEC/INV		GROUP RANK	
		%	RANK	%	RANK	%	RANK	AVERAGE	RANK
PUB	BOB	12.95	**4**	59.67	**3**	89.49	**1**	**2.67**	**3**
PUB	PNB	11.02	**6**	57.52	**6**	80.81	**4**	**5.33**	**6**
PUB	SBI	12.79	**5**	58.08	**5**	79.76	**5**	**5.00**	**5**
PVT	HDFC	16.82	**3**	64.22	**1**	81.15	**3**	**2.33**	**2**
PVT	ICICI	17.14	**2**	59.29	**4**	72.84	**6**	**4.00**	**4**
PVT	KMB	17.85	**1**	63.65	**2**	81.40	**2**	**1.67**	**1**

Source- Compiled from Annual Reports of above banks

The above table exhibits that in terms of overall capital adequacy parameter, Kotak Mahindra Bank (KMB) has secured 1st rank followed by HDFC, BOB, ICICI, SBI and PNB. The PNB is ranked last in Capital adequacy as well as in the composite ranking but it still maintains the CAR of 11.02%, which is above the minimum requirement of 8%.

2. Assets Quality (A)

The asset quality is an important aspect to check the financial position of a Bank. The main objective is to examine the quality of the asset. It’s calculated using the percentage of Non-performing assets present in the total assets. All the bank wants to keep the NPA as low as possible for them. The below three ratios have been considered to check the quality of the asset.

a. **Net NPA to Net Advance**: This is the most often used ratio to evaluate asset quality. It is determined as the net NPA as a percentage of net advances. The lower the ratio, the higher the level of quality.

Net NPA to Net ADV Ratio= (Net NPA/ Net Advance)*100

b. **Investment to Total Assets**: it is calculated by the total investment to the total assets. It indicates the percentage of assets deployed for investment purposes. A larger ratio indicates the management conservative policy of management, so the lower ratio is desired.

Inv to Total Assets = (Investment/ Total Assets)*100

c. Term Loans to Total Advance: it is calculated as a term loan to the total advance of a bank. The loan which has been given for a fixed time period.
Term loan to Advance= (Term Loan/ Advance)*100

Table 3: Composite Asset Quality (A) of Selected Banks

Type	BANK NAME	NPA/ADV		INV/T.A		TERM LOAN/ADV		GROUP RANK	
		%	RANK	%	RANK	%	RANK	AVERAGE	RANK
PUB	BOB	3.98	**5**	23.24	**3**	50.94	**5**	**4.33**	**3**
PUB	PNB	7.86	**6**	27.06	**5**	33.90	**6**	**5.67**	**5**
PUB	SBI	3.66	**4**	27.83	**6**	61.55	**4**	**4.67**	**4**
PVT	HDFC	0.38	**1**	23.97	**4**	71.71	**1**	**2.00**	**1**
PVT	ICICI	3.09	**3**	22.45	**1**	69.09	**2**	**2.00**	**1**
PVT	KMB	0.81	**2**	22.67	**2**	67.84	**3**	**2.33**	**2**

Source- Compiled from Annual Reports of above banks

The above table shows the asset quality of HDFC and ICICI banks is equal and it's better than the other selected bank. Kotak Mahindra Bank got second place in asset quality followed by Bank of Baroda, State Bank of India and Punjab national bank.

3. **Management Capabilities (M**)
This is the ability of management to locate, find, monitor, calculate and manage the risk. This parameter is subjective in nature and reflects how efficiently management is running the operational activities of the bank. The below ratios are considered to evaluate this:

a. **Return on Equity (ROE):** It shows the profitability of the bank and it calculates the amount of funds that have been utilized to convert into income.
ROE= (Profit after tax / Shareholder's wealth)*100

b. **Business per Employee (BPE)** : This indicate the utilization of employees for generating the business of a bank. It reflects the average contribution made by the employee in the total business of a bank. Business means the addition of total advances and deposits of a year.
BPE= (Total Business **/** Number of Employees)*100

c. **Profit per Employee (PPE**): This shows the employee's efficiency in terms of generating revenues for the bank. A higher ratio is preferred.
PPE= (Profit after Tax / Number of employees)*100

Table 4: Composite Management Efficiency (M) of Selected Banks

Type	BANK NAME	BPE		PPE		ROE		GROUP RANK	
		LACS	RANK	LACS	RANK	%	RANK	AVERAGE	RANK
PUB	BOB	1843.67	**2**	1.67	**5**	-1.30	**5**	4.00	**4**
PUB	PNB	1656.00	**3**	7.00	**3**	-17.38	**6**	4.00	**4**
PUB	SBI	1884.00	**1**	1.23	**6**	1.19	**4**	3.67	**3**

PVT	HDFC	1648.00	**4**	22.33	**1**	16.45	**1**	2.00	**1**
PVT	ICICI	1191.67	**5**	6.67	**4**	5.60	**3**	4.00	**4**
PVT	KMB	945.33	**6**	12.33	**2**	12.53	**2**	3.33	**2**

Source- Compiled

The above table indicates each parameter of Managerial efficiency. In terms of Business per employee, SBI is having the most secured business followed by BOB, PNB. The BPE is very low for Kotak Mahindra. On the basis of profit per employee and Return on Equity HDFC bank secured 1st rank followed by KMB and PNB. Concerning composite ranking, HDFC is on the highest rank followed by Kotak Mahindra and State bank of India. While the BOB, PNB and ICICI having the same ranking.

4. **Earning Quality (E)**
It indicates the bank's ability to earn spontaneously and it measures the capabilities of a bank to generate income from its operational activity. This component indicates the growth prospects of the bank. The banks earning quality is assessed by using the three ratios shown below.

a. **Return on Assets (ROA):** It indicates how efficiently a bank uses its asset to generate the profit. It is the ratio of net profit to the total asset of a bank for a particular year. It is calculated as
ROA= (Net Profit / Total Asset)*100

b. **Net Interest margin to Total assets (NIM):** The difference between a bank's interest income and the amount paid as interest to the lender is known as Net interest margin. It's measured in terms of proportion of total assets. A higher ratio equates to larger earnings.
NIM = (Interest earned- Interest paid / Total Assets)*100

c. **Operating Profit to Total Assets:** it shows the bank's potential to earn profit from its operations for every single rupee invested in total assets. The operating profit will rise if assets are used to their full potential.
Op profit to Total Assets = (Operating profit / Total Assets)*100

Table 5: Composite Earnings quality (E) of Selected Banks

Type	BANK NAME	ROA		NIM		OP PROFIT/ T.A		GROUP RANK	
		%	RANK	%	RANK	%	RANK	AVERAGE	RANK
PUB	BOB	0.03	**5**	2.51	**4**	2.49	**4**	4.33	**4**
PUB	PNB	-0.94	**6**	2.53	**6**	2.14	**6**	6.00	**6**
PUB	SBI	0.07	**4**	2.04	**5**	2.48	**5**	4.66	**5**
PVT	HDFC	1.95	**1**	1.47	**1**	4.13	**1**	1.00	**1**
PVT	ICICI	0.69	**3**	1.85	**3**	2.98	**3**	3.00	**3**
PVT	KMB	1.76	**2**	1.8	**2**	3.96	**2**	2.00	**2**

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Source-Compiled

The above table represents the average percentage of earning quality of a bank. Based on all the three parameters as ROA, NIM and Op profit to total Assets, HDFC is at the top followed by KMB and ICICI. In terms of group average of three ratios also, HDFC is at the top followed by KMB and ICICI, While PNB scored the last position because of its poor performance.

5. **Liquidity position (L):**

Liquidity means the bank's capability to fulfill its short-term obligation without any hindrance. A bank should maintain adequate liquidity as it has a significant impact on financial soundness. Too much liquidity has a negative impact on profitability while too low increases the risk of insolvency. The following ratios have been considered:

a. **Liquid Asset to total asset**: Liquid asset constitute Cash in hand & with other banks in India as well as in foreign, Cash in RBI and Money at call & short notice. If available funds are not used, the bank may suffer loss as the idle cash has no returns.
L.A to T.A = (Liquid asset / Total Asset)*100

b. **Liquid Asset to Total Deposit:** The ability of a bank to convert their deposit into cash is calculated by this ratio. Total deposits include demand, saving and term deposits. The banks with higher ratios are preferable.

L.A to T. Deposit = (Liquid asset / Total deposit)*100

c. Cash Deposit Ratio: A bank should maintain the liquidity in the form of cash withheld by them or with the reserve bank of India. This ratio shows the amount of money available as a percentage of total amounts of money kept by its customer into a bank.

C-D ratio= (Total cash / Total Deposit)*100

Table 6: Composite Liquidity position (L) of Selected Bank

Type	BANK NAME	LA/ T. A		LA/ T. DEP		CD RATIO		GROUP RANK	
		%	RANK	%	RANK	%	RANK	AVERAGE	RANK
PUB	BOB	16.02	**4**	14.19	**2**	3.82	**6**	4.00	**5**
PUB	PNB	2.24	**6**	12.27	**4**	4.90	**4**	4.67	**6**
PUB	SBI	69.19	**2**	7.49	**6**	5.59	**2**	3.34	**3**
PVT	HDFC	10.10	**5**	10.65	**5**	8.21	**1**	3.67	**4**
PVT	ICICI	43.78	**3**	14.25	**1**	5.43	**3**	2.34	**1**
PVT	KMB	113.81	**1**	13.79	**3**	4.35	**5**	3.00	**2**

Source- Compiled

The above table exhibits the liquidity position of selected banks. In terms of Liquid assets to total assets, Kotak Mahindra has secured the 1st Rank followed by State Bank of India and ICICI bank. On the grounds of Liquid assets to total deposit, the highest score is achieved by

ICICI followed by BOB and KMB. Based on the group average of three ratios, ICICI bank secured 1st rank followed by KMB, SBI, HDFC, BOB, and PNB respectively.

Overall Ranking of selected banks Based on CAMEL Framework

the overall rankings of selected banks are presented below, based on all the components of CAMEL model.

Table 7 : Overall Ranking of Selected Banks as per CAMEL Framework

Type	BANK NAME	Capital Adequacy C	Asset Quality (A)	Management M	Earnings E	Liquidity L	Average	Grand Rank
PUB	BOB	2.67	4.33	4.00	4.33	4.00	3.87	**4**
PUB	PNB	5.33	5.67	4.00	6.00	4.67	5.13	**6**
PUB	SBI	5.00	4.67	3.67	4.66	3.34	4.27	**5**
PVT	HDFC	2.33	2.00	2.00	1.00	3.67	2.20	**1**
PVT	ICICI	4.00	2.00	4.00	3.00	2.34	3.07	**3**
PVT	KMB	1.67	2.33	3.33	2.00	3.00	2.47	**2**

Source- Compiled

As per the composite ranking, the bank which has the lowest average stood at the top rank. As per the above table, HDFC bank is at first rank with an average score of 2.2. This means that the performance of HDFC is the best followed by Kotak Mahindra and ICICI. The top three positions are secured by the private sector bank only. In the public sector category, the Bank of Baroda’s performance is better compare to the State bank of India and Punjab national bank.

CONCLUSION

It is determined that with reference to all the parameters and sub-parameter of CAMEL model , the overall performance of private sector banks is better compare to public sector banks. In the private sector, HDFC secured the 1st Rank followed by KMB and ICICI bank. HDFC has shown strong performance on grounds of Quality of Assets, Management efficiency and Earning Quality while it is lag behind in terms of liquidity. Out of the selected bank, Punjab National bank had secured the last position in all of CAMEL metrics of the examined banks. So to improve the performance PNB has to work for all the metrics such as Capital Adequacy, Asset Quality, Management, Earnings and Liquidity position. On grounds of the Capital Adequacy ratio, PNB has maintained only 11%, which is below the level set by RBI for public sector banks of 12%. Bank of Baroda has performed better compared to the State Bank of India almost in all the parameters of CAMEL.

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